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A search for collaboration in vocational education: Enhancing self-regulated learning in a psychology course for nursing students

A critical realist-informed cognitive-behavioral monitoring application

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ABSTRACT: A search for collaboration in vocational education: Enhancing self-regulated learning in a psychology course for nursing students

A critical realist informed cognitive behavioral monitoring application

From the critical realist practical approach, the scientist-practitioner's research objective, via empirical experimentation in the teaching of psychology, was to promote the deep learning of public health nursing and general nursing students in the strive to move from formal instructive teaching practices to collaborative teaching and trustworthy teacher–student communication. By applying CBT methods the aim was to decrease barriers and obstacles to students' daily metacognitive learning and to alleviate their worry and rumination.

The psychological research was executed in a polytechnic over a period of six years (2000–2006) across four separate empirical research projects. The research projects were composed of an evolving consequential practical work to progress from scaffolding of teaching psychology to software-managed scaffolding of a student's daily learning behaviors via integrated distance and classroom learning. Large student groups of thirty students, mainly female, participated in each of the four teaching and research projects, and each research project was carried out with pre- and post-test measures. A descriptive survey about the nature and problems of the students' learning was carried out in the first project via the deployment of behavior monitoring records. The students' anxiety and uncertainty behavioral patterns were empirically explained as their behavioral competencies in the second research project by the use of functional behavioral analyses. Behavior monitoring and training protocols were devised and implemented via CBT means through the performed functional assessment of the students' behaviors in the third and fourth research projects. The aim of the protocols was to alleviate the students' worrying and other safety-seeking and avoidant behavioral patterns that generally impaired their reflective intensive learning.

It was discovered that it is possible to gradually enhance students' metacognitive and reflective learning and decrease students' worrying and rumination via the daily behaviour monitoring exercises and integrated CBT treatment in the students' ordinary learning course of psychology. Together with lay teaching of vocational psychology and software-managed scaffolding of a student's daily learning via psychoeducation, coaching, real-time feedback to individual learning outcomes and collaborative supervision of a student's learning, it is possible to alleviate students' mild stress and psychological problems, and by these preventive means to support their mental heath. Based on this four-step empirical research it seems that CBT treatment methods clarified by a dialectical, critical realist practitioner's emancipatory approach to constrained social practice, promotes students' deep learning and underlying behavioral competencies.

For a scientist-practitioner's work in vocational education the four-step empirical research provided means to evaluate practical options to devise and, via scaffolding means,

to implement stepwise educational programs to enhance students' deep reflective learning in their social educational environment. Integration of CBT methods with behavior monitoring exercises, especially in strengthening collaborative educational discourses, is executable and promotes students' behavioral competencies in deep learning within the slight degree of room available in the deeply structured, dualist social educational practices.

ABSTRAKTI: Kriittisen realismin tutkimusorientaation mahdollisuudet ammattikorkeakoulun hoitotyön opiskelijoiden metakognitiivisten taitojen ja valmiuksien elvyttämisessä kognitiivisen käyttäytymisterapian menetelmin

Tutkimuksen tavoitteena oli kriittisen realismin viitekehyksessä kehittää opetuskokeilujen kautta ammattikorkeakoulun terveydenhoidon ja sairaanhoidon opiskelijoiden syväoppimista nojautumalla opetuksen luottamuksen ja yhteistyön periaatteisiin. Kognitiivisen käyttäytymisterapian menetelmiä soveltaen pyrittiin vähentämään oppimisen psykologisia esteitä, varsinkin opiskelijoiden huolehtineisuutta ja murehtimista.

Tutkimus toteutettiin vuosina 2000-2006 neljässä itsenäisessä tutkimuksessa, jotka muodostivat seurannon. Yksittäiseen psykologian opetustoteutukseen osallistui noin 30 nuorisoasteen ammattiopiskelijaa, pääasiassa nuoria naisia. Kuhunkin tutkimukseen sisältyi alku- ja loppumittaus. Ensimmäisessä tutkimuksessa kahden opetusryhmän opetustoteutuksessa kartoitettiin opiskelijoiden oppimistoimintoja ja niiden ongelmia. Seuraavaksi toisessa tutkimuksessa n funktionaalisella käyttäytymisanalyysillä selvitettiin vastaavan opetustoteutuksen kahden opiskelijaryhmän opiskelijoiden ahdistuneisuutta ja epävarmuutta ja niiden yhteyttä heidän toimintavalmiuksiinsa. Kolmannessa ja neljännessä tutkimuksessa yhteensä neljässä opiskelijaryhmässä kognitiivisella käyttäytymisanalyysilla selitettiin psykologisesti oppimisongelmien käyttäytymisen luonne. Niiden pohjalta rakennettiin ja toteutettiin arjen toimintojen monitorointimenetelmiä softwaren opetus- ja oppimisalustassa, joilla opiskelijat todensivat todellisten oppimisen toimintojensa laatua sekä saivat palautetta monitorointimenetelmien toimivuudesta. Näin pyrittiin vaikuttamaan myönteisesti oppimista haittaavien suojatoimintojen vähenemiseen ja syväoppimisen elpymiseen.

Havaittiin, että päivittäisten toimintojen monitorointiharjoituksilla ja niihin integroiduilla kognitiivisen käyttäytymisterapian harjoituksilla voidaan edistää vähitellen metakognitiivista ja reflektiivistä oppimista ja lisäksi vähentää opiskelijoiden murehtimista. Psykologian opintojen ja päivittäisten toimintojen opetuksen keinoin -- psykoedukaatiolla, valmennuksellisella opetuskeskustelulla, reaali-aikaisella opiskelijakohtaisella oppimispalautteella ja opiskelijan kollaboratiivisella ohjauksella -- voidaan vähentää opiskelijoiden lievää stressiä ja psyykkisiä ongelmia ja siten myös tukea heidän mielenterveyttään ennaltaehkäisevästi. Toteutetun tutkimuksen valossa näyttää siltä, että kognitiivisen käyttäytymisterapian menetelmät kytkettynä dialektisen kriittisen realismin viitekehykseen tarjoavat hedelmällisen lähtökohdan edistää opiskelijoiden syväoppisen valmiuksia.

Neljän osatutkimuksen projekti antaa välineitä psykologian ja opetuksen tutkija-praktikolle arvioida sosiaalisen opetusympäristön monitasoisia jännitteisiä käytäntöjä ja sen tiedon kautta soveltaa opetuksen ja oppimisen telineitä internetin resursseja käyttäen joilla voidaan vaiheittain useiden tutkimusten kautta päästä opiskelijan laadukkaan syväoppimisen elpymiseen. Kognitiivisen käyttäytymisterapian monitoroinnin menetelmät vahvistavat kolloboratiivista yhteistyötä ja luottamusta tavalla, jotka ovat omiaan edistämään opiskelijan syväoppimista.

Foreword

An ongoing study composed of four separate empirical projects that sought optimal scaffolding of students' learning was conducted within the years 2000–2006 during courses in Basic Introductory Psychology (2 credits) for a nursing program. The focus of the empirical research was the adequacy and feasibility of programmatic implementation in enhancing the basic behavioral learning skills and the competencies of the pre-adult and adult nursing students. These competencies could arise or could be obstructed by the constrained social realm of education. Dialectical critical realist understanding of human reflection and its individual development occur in the social ontological realm. The given ontologically pre-existing, social tensed and constrained practice of education is a main research objective in psychological research. The transdisciplinary research stance on the polyvalent world introduces social life as ontologically existing in its many contradictory mechanisms, multilayered mediations and transformations, which have to be taken into account in psychology teaching of adult students. It is not feasible to address the origins of mild and latent anxiety problems, for example worrying, via rigid dualist, psychological mind–body theories and methodologies but they can be targeted by a scientist-practitioner's CBT-informed work on scaffolding students' daily learning.

The course was presented to groups of approximately 30 first-year students in a basic nursing program at a Finnish polytechnic of applied sciences. The majority of the students were female, with less than 4 males in any given group, with an age range of 18–25 years. The initial goal of this stepwise research is to support students' academic progress towards self-regulated learning and working, so that the learners would be able to maintain reflective, metacognitive problem solving in overcoming obstacles in their studies. The scientist-practitioner's aim was to scaffold a practitioner-teacher's teaching in the first two research projects, then to scaffold the students' learning in the last two research projects. The objective of this research is to reach optimal scaffolding of teaching and learning in these social practices.

The first part of this research introduces the scientist-practitioner's critical realist research stance in conducting empirical psychological research in a given social educational organization. The logics of scientific enquiry as 'an issue-driven research' differs considerably from both theory- and method-driven research on students' learning and teachers' teaching; it is a psychological research of students' behavioral competencies and their potential changes of which the main focus is students' basic competencies as inherent tendencies, not the measurement of students' abilities and skills per se.

It was empirically observed during the research that in a situation where students have divergent behavioral skills and competencies, and where the usual teaching social practice is based on multilayered, discursive, structurally conjoined mediations, this education environment tacitly tends towards surface teaching and learning. In contrast to the organizational basic educational values and goals, students' deep learning is unlikely to show any improvement on a daily behavioral basis. It was also determined that the introduction and deployment of CBT tools was the most feasible approach to supervise the studying behavior of students in introductory studies of psychology because it was practically possible to set up and validate basic scaffolds that would enable self-regulated learning through a virtual learning environment and extensive use of software technologies.

In its initial dialectical stance the innovative learning environment enables a practitioner to introduce and incorporate specific psychoeducational and behavioral monitoring, CBT treatment methods into students' daily learning to frequently restore their metacognitive mindful learning. In addition, such learning indicates a student's increased awareness of her uncertainties and anxie-

ties in her behavior management. When students lapse into procrastination, worry and despaired self-reflection, they need a more accurate and re-validating insight into their daily learning behavior; such insight is possible in the derived mindfulness, CBT therapeutic stance in behavior monitoring recording and thus enables its implementation for preventive educational purposes. It is regarded as the fourth wave in CBT-mindfulness therapeutic practices.

The report elaborates on the methods of teaching continuation in the described scientist-practitioner's stance in theoretically and normatively laden emotivist educational discourses. Due to the fact that the majority of prevailing teaching and learning social practices primarily maintain surface learning, learning of theories and idealist, normative practices, these practices as transfactualities are causally efficacious in themselves in the social life of education and students' living. They could, if sufficiently strong, abolish intentional action, metacognitive problem solving and mindfulness behavior in all normative and lay discourses. This authentic, constrained social world of education in itself, justifies its logics of scientific discovery: the definition of a research problem within a particular social realm, the direct measurements of the students' behavior and behavioral characteristics, for example competencies in human control, as well as how to attain empirical results that justify the whole practical research.

This initial perspective of restoration of behavioral monitoring of students – of monitoring their behaviors and learning – represents the utilization of specific and progressively tailored monitoring activities that are incorporated in students' real learning as scaffolds and exercises. The researcher views behavior monitoring not as a general methodological layout of specific monitoring methods and tools, but as a justified application of the most appropriate monitoring exercises in teaching and supporting the students to get rid of their worrying behaviors. From the initial stance of CBT conceptualizations of one's daily human behavior, concurrently self-regulated learning behavior is exhibited in all daily behaviors of students. In ongoing research it has been established that students' worrying is closely related and largely originated by constrained social educational practices: constrained social learning realms are not secondary (as usually seen in CBT considerations) but central ontological factors that initiate the students' mild worrying and emotional problems that need to be assessed and confronted in psychology teaching.

The divergence in the students' learning competencies that was indicated in the first research project was validated as genuine in the three consequent teaching–research projects. It has been confirmed that students possess latent anxiety-related deficiencies, such as worrying and ruminating, in their limited self-regulation of despairing moods. This empirical outcome permits a practitioner to implement new teaching scaffolds for self-regulated learning as additional, tailored treatment methods, and the specific empirical research strategy for measuring feasibility and practical applicability of these scaffolds as pre- and post-test measures.

This thesis argues that the critical realist philosophical stance is generally consistent with cognitive behavioral psychotherapeutic practices and it establishes a teaching template that addresses students' worrying and ruminative behaviors. Although additional guiding resources are required for the assessment of students' learning difficulties and for conducting teaching as a CBT group practice for students with divergent learning competencies, this template simultaneously enables each student's learning in tune with her initial learning capacities and enhances self-regulated learning as mindful behavior. It also facilitates a practitioner's supervision of students' learning behaviors in real time along with coaching and CBT collaborative supervision via software technologies, especially via a 'virtualia' teaching software platform – the most crucial teaching methodology and a practitioner-teacher's resource.

Acknowledgements

In my long career in adult education and client psychotherapy, my options to study and seek adequate, educative, sociological, psychological and philosophical means for vocational social and health studies have been broad, but there has always been a practitioner's undercurrent, at least tacitly, teaching objective towards human emancipation. While already being interested in philosophical critical realist issues in empirical research of vocational social and health studies, my innovative integration of this philosophical position and cognitive-behavioral therapeutic practices was a fertile template in my teaching and psychotherapeutic practice after accrediting to cognitive behavioral psychotherapy. This personal and professional journey of many years led to an elaborated and explicit integration of dialecticised, philosophical, critical realist practical tenets in my client and educational practice through cognitive therapeutic means. It has enabled me to make changes to ordinary psychology teaching by scaffolding a student's daily learning of a psychology course and in other courses on sociological and philosophical scientific issues.

I am grateful to Riitta, my wife, for her understanding that every human being needs leisure and solitude in order to lead a rich everyday life.

I am grateful to the many discussants who have contributed to the debate of critical realism. Those discussions often culminated in the reading of Bhaskar's rich book *Dialectic, the Pulse to Freedom* and have reinforced my position to go on with this empancipatory stance. Bhaskar's book has been taken generally as very demanding and problematic; I found the book to be demanding but clear-cut in the way it is possible to elaborate these issues in this new, dialectical, critical realist philosophical sense. So I took his writing style as consistent with his main philosophical theses and tenets on what individual human knowing really is. However, it is important to note what has been left unsaid in Bhaskar's book, what might be missing in his rather clear-cut sentences. My decision to stick with this philosophical approach when conducting issue-driven research emerged from a strict ontological position; at least to the degree possible under the heavy social constraints in education where no room was made available for innovative methodological deployments.

I would like to thank the many experts who improved my English during the writing process, specifically Natalie Mikhaylov, Harri Laaksonen, Ranjan Ghauduhri and Pekka Boman. The expertise of my proofreader and language editor, Linda Free, and her deep trustworthy commitment to the text encouraged me to go through this last revision of the text. I am also grateful to the many people not mentioned here who have contributed to this long-lasting and persistent writing process, in improving my arguments in the thesis that are rather complicated when seeing it from a reader's perspective. I have hopes that the hugely important issues raised in this thesis, at least in vocational education, will become accepted as relevant and somewhat in need of this kind of writing style. My deepest concern has been how to shorten the text, but to no avail when working within this kind of specific and real, social educational life.

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I. Establishment of a teaching template for fostering student learning in psychology studies

Abstract

This critical realist-informed, social psychological research in a given social practice – higher vocational education in nursing – searches for a feasible emancipatory approach to actual empirical programs to enhance metacognitive self-regulated learning. How this novel attempt in academic studies diverges and abstains from theory- or method-driven psychological research requires elaboration of its critical realist philosophical roots. This type of emancipatory-oriented, social psychological research in the practitioner-teacher's transdisciplinary practical endeavors arises from a given social-constrained, ontological polyvalent world; it does not only focus on the empowerment of students individually. Primarily, it searches for means that would abolish constraints that hinder students' reflective intentional learning in their daily behavior. The actual transformative social practice through which the scientist- practitioner scaffolds students' self-regulated learning is done via a critical realist philosophical category of absence and moves to deepening the psychological description of the students' divergent learning behaviors.

The scientist-practitioner in his practical teaching and empirical research for optimal scaffolds to teaching and learning, intended to determine whether mindfulness-informed behavior monitoring could provide an adequate teaching template both in assessing students' vast divergences in their behavioral reflective competencies and in seeking tailored scaffolds to their reflective learning. Means to monitor and record behavior were derived from the scientist-practitioner's reflective evaluation of the social psychological mechanisms of the educational transformative practice. This evaluation enabled the scientist-practitioner to refine adequate teaching scaffolds for self-regulated learning of human nature.

The research was based on two separate teaching groups of about thirty students. A pre- and post-test setting arrangement was used to measure the feasibility of implemented scaffolds for self-regulated learning and the results showed that approximately two-thirds of the students' behavioral monitoring was significantly impaired. In the majority of cases their crucial deep learning skills were deficient or lacking: in particular, text comprehension and other advanced academic learning skills. Novel teaching scaffolds were implemented, such as conceptually rich and deep learning materials, practitioner-teacher's coaching and execution of constructive and dynamic teaching procedures in the form of a laboratory program. However, the program was not effective enough to bring back deep learning in the majority of the students. The students demonstrated

many crucial behavioral learning deficiencies that manifested as procrastination, scarce learning activities and as superficial theoretic knowledge in their learning outcomes.

The scientist-practitioner's conclusion from the first research project was to search for further practical means to collaborative teaching by applying cognitive behavioral therapeutic (CBT) tools to the assessment of students' divergent learning behaviors. CBT tools were used to attain a deeper psychological explanation of why the students' behavior monitoring of their recent contextual behavior remained so dualist and broken in their deep learning activities.

Key concepts: coaching and other teaching scaffolds for self-regulated learning, monitoring daily behavior via diaries and records, domain and vitality of students' metacognitive behavior monitoring, the nature of the students' divergence in learning behaviors, anxiety-related behavioral problems.

1. CRITICAL REALIST PHILOSOPHICAL ROOTS IN THE USE OF BEHAVIOR MONITORING TECHNIQUES

1.1 A scientist-practitioner's critical realist-informed philosophical approach to understanding transformative educational practice

This subsection elaborates the research project's nodal, dialectical, critical realist philosophical position in the enhancement of student learning through the use of the practitioner's scaffolding by depicting the general demarcation points on how transcendental realist research logics can arise (see transcendental realism; Bhaskar, 1978, 1986). Here it is essential to see how it might be possible to incorporate the introduced, and here expanded, metacognitive monitoring position in real teaching practice into students' daily learning. This psychological research on improving the divergent female students' education in the psychology of human nature and stress management, by addressing their functional and dysfunctional behavioral competencies, has been an exciting adventure for the practitioner particularly after initial progress was achieved in the first two empirical research steps.

During the first two research projects the workload of the practitioner was intense and the social confinements to instructive teaching were almost too coercive, which did not allow the teacher and the students to employ innovative learning templates for an initiation of their creative learning activities. The practitioner could see that his teaching did not enhance deep learning for the majority of the students in nursing who faced new stressful living circumstances and adverse adulthood living objectives. The students' tacit tendencies to turn to theories and nomological knowledge manifested in their hopes to acquire accurately defined theoretical concepts. They seemed to think that such knowledge would directly provide them with the means to deal with their individual and vocational practical concerns. This epistemic fallacy and loss of the real polyvalent world[1] is the dualist orientation; these kinds of educational practices do not initiate mindfulness or non-dual reflection as alluded to by for example metacognitive learning. This first report summarizes a search for practical teaching methods that would enhance a student's contextual reflection that would evolve into a deep and non-dual reflection.

The monitoring and recording of one's daily rhythmic behaviors through behavior modalities goes beyond traditional dualist cognitive psychologies, such as theoretically

derived empirical measurement of cognitive mechanisms discerned as general lawful likelihoods. There is a huge amount of cognitive behavioral research on nomothetic behavioral mechanisms intitated from the mind-body dualist perspectives that, although informative, is not a guiding basis for the practitioner to move on to the critical realist, philosophical emancipatory-oriented position. Similar to recent general psychological elucidations into anxiety sensitivity behavioral features, see for example Bernstein et al. (2005), Bernstein et al. (2007a), Erickson and Newman (2007) and Olatunji et al. (2009), in psychological research of this kind, psychological mechanisms in the realm of higher mental operations as objectives of empirical research are not nomothetic or abstract metaphysical issues, they arise and have their form in the real transformative social life. This social cube position in the practitioner's description and in the search and validation of the optimal psychological explanations of the object phenomena (the students' divergent and often superficial learning) is crucial.

First, its basic critical realist philosophical tenets are briefly presented, and then secondly, the practitioner's intensive reflecting in his transcendental argumentations of the generative mechanisms of the students' learning and their real transformative life. Here, the practitioner, by seeking to eschew empiricist theory or method-informed research, ventures in his continuous reflecting of the students' real social learning via his transcendental arguments[2] about the polyvalent social educational world to see the students' learning in their daily social life. In this approach, transitive[3] (social and psychologically malleable) multilayered practice becomes the practitioner's, as well as students', central focus in the search of freedom that enables and guides the students to shed coercive social educational constraints in their learning. The practitioner who is teaching students about human nature via a critical realist philosophical position can have a direct practical emancipatory eye (not a God's eye) to students' competencies in their behavior monitoring, and can set up scaffolds to its recording and training via means of cognitive behavioral therapeutic (CBT) treatment means.

This critical realist stance in emancipatory research does not mean the traditional concept of empowering human personality as inherent rationality. However, social constrained life as transformative practice[4] is the focus in emancipatory-oriented research: in the ways it enables a human being to have more choices and develop competencies to make intentional choices in her daily behavior and learning that enhance her own behavior. The specific critical realist quotations at the end of this first phase of the report can provide the reader with a glimpse of this critical realist-informed psychological research, and the primacy of seeing social constrained life as ontologically existing whether known or not by the researcher or the subjects of the study. For the reader, the logic of this four-step research can only be comprehended and evaluated by seeing that empiricist psychological research does not have social ontology: a problem of ontological monovalence that the philosophy of dialectical critical realism has delineated, elucidated and shown to be a world that is polyvalent. In his critical realist philosophy, Bhaskar (1993) solved this problem by elucidating four kinds of real negation[5] and dialecticized the pre-existing critical realist philosophical ontology.

The practitioner uses CBT tools for self-regulated learning to scaffold a student's social learning environment in her psychology studies. This novel perspective in teaching departs from contemporary method-driven pedagogical research by bringing back a student's learning into all her real, functional and dysfunctional daily activities in her real social life. It is hoped that this scientist-practitioner's work shows the way to move from instructive teaching to collaborative working in teacher–students co-working activities.

The stepwise research demonstrates how instructive teaching practice in psychology studies of human nature occludes and obstructs students' metacognitive learning in vocational academic studies when students are very divergent in their behavioral competencies.

This practical psychological research in education is not possible in scientific enquiries such as theory- and/or method-driven psychological (empiricist) research. In this transcendental realist research position (if possible it is to be demonstrated in this research) into teaching, the real social constrained world is the basis for a teacher-practitioner's attempts to bring change to a student's problem-solving behaviors. In this empirical research the practitioner's derivation of the research problems and the logic of enquiry are based on personal reflections – such as dialectical and transcendental arguments – of the problem area and ontologically relevant means of scaffolding student learning. It is not feasible to delineate in this project the practitioner's transcendental, dialectical and other arguments for the social generative mechanisms, the reasoning of which goes beyond inductive–deductive reasoning according to Bhaskar's introduction of the concept of holistic causality[6]. The practitioner's path to deeper psychological explanations of the students' divergent daily learning behaviors shows that there really is a multiplicity of causalities at work in the educational social realm that need to be accounted for in the assessment of the students' behaviors. Bhaskar's concept of holistic causality also informs the practitioner's means to scaffold the students' metacognitive learning behaviors. The logic of the research enquiry takes as self-evident that the multilayered and inherently contradictory social-psychological-material polyvalenthic ontological life is the basis for development of adult students' functional behavioral competencies and skills, and human mind needs to be assessed holistically as these forces might arise or be absented[7] in the ontological transformative realm of the social cube[8].

This research is the first attempt to report a practitioner's psychology teaching where the practitioner's reflective endeavors are informed by the teaching practice and its concurrent research are conjoined informing each other in the practitioner's reflective endeavors. When the researched educational social practice works at least tacitly by its norm-directed practitioners' activities for occluding the practitioner-teacher's work, there are no pre-planned exact executable activities to be carried out. Rather the practitioner keenly focuses on how this teaching becomes integrated or abolished into the other teachers' teaching in the students' vocational learning and in their daily activity patterns. Regardless of the opposite educational mechanisms at work the gradually evolving stepwise study was possible, and it was argued as the only option to research constrained educational life, while taking as self-evident that the research might be abolished by counterfactual forces of the social life. According to the applied emancipatory idea in dialectical critical realist philosophy, the only possibility to do social psychological research here was to transcend and go beyond these actualist normative social practices, and to search for abolishment of empiricist theoretic teaching practices by enhancing students' reflective learning. To enhance students' reflective learning the practitioner set up new scaffolds for the students' daily self-regulated learning in their ontological life, so that they could take on new activities towards abolishing bad constraints in the transitive, transformative social educational life.

1.2 Critical realist-informed research into metacognitive behavior monitoring goes beyond theory–practice psychologies

The starting point of this empirical psychological research is to enhance the students' problem-solving competencies; it covers both the practitioner's expertise in psychological research into teaching as well as his expertise in the cognitive behavioral psychotherapeutic tools commonly used in clinical settings. Studying the enhancement of self-regulated learning in pre-adult and adult nursing students brings to the fore the assessment of students' behaviors and their metacognitive behavior monitoring in their daily behavior management. Students' tacit and largely semiconscious activity realm of behavior monitoring is the key object of interest in the practitioner's assessments of their core competencies; it does not allow for any pre-theorizing of students' skills and other overt personal characteristics. The teacher-practitioner's observation of students' behaviors is the core of the assessment of the students' behavioral competencies and deficits. The concurrent evaluation of students' learning behaviors by the students themselves (via recording) and by the practitioner maintains the initial stance of collaboration in teaching. But, as shown in this research, an expanded behavior analysis requires an expanded behavioral assessment, which is only attainable in the open and total reframing of the transformative social forces at work that impact on the students' daily learning behaviors. In this critical realist philosophical approach to transdisciplinary research and practice, the CBT methods and means utilized could increase, intensify and individualize learning by implementing this behavior monitoring practice; frequently, this aspect is missing in traditional dualistic theory–practice teaching discourses and approaches. In dualist discourses, individual behavior monitoring is not possible, a fact which is easy to understand in situations where collaborative trustworthy communication is neglected by the interlocutors in their constant traversal of inductive reasoning and search for absolute, deductively true arguments.

In critical realist terms and in principle, an individual always finds herself in a pluriverse of her individual negation activities in a subject–object dualist behavioral position where her intentional being comes into existence in the ways it occurs in dialectical moments of IM, 2E, 3L and 4D (MELD)[9]. This pluriverse is the individualization realm in the maintenance of primary polyadization[10] (of individual being also) as the initial state of the ontological world. In the ontological 'social cube' life (and especially in psychological laboratory research into that social life), individual monitoring and evaluation of one's behavior and its internal and external activities is the core or the real essence of human behavior. Following this philosophical stance, behavior monitoring is not a specific theoretical and methodological research approach, but it is logically coherent in its methodological recording means because dialectical, critical realist philosophical notions elucidate an individual's detachment activities in living in the constrained ontologically dualist world. Individual reflection is a reasoning activity covering all ontological realms of negations, including radical, subjective, transformative negations in one's contextual negating reflections on one's subject–object dualisms.

The other empiricist approach to teaching practice about human nature is more common and it is based on inductive reasoning. When inductions involve reasoning from values to facts they do not sustain the real option of knowing without losing values in reasoning, which sometimes in an individual's reflecting can directly be facts or not on other occasions and on other individuals as Bhaskar has philosophically elucidated (see for example, 1986). Inductive reasoning can tacitly intrude into the individual's reasoning

and it can be flawed and lead to irreal generalizations such as knowledge of sensations or emotions, but not the real facts of the relations of world things. Therefore, when having referential detachment[11] (Bhaskar, 1993, p. 223) as the way to human knowing, induction is not at its core an adequate way of understanding an individual's knowledge of things in the real social world, and would not lead to any practical approach to individual behavioral modalities, as is the position of this report, particularly in the third and fourth research projects. For this researcher-practitioner, the objective was to reflect on both the a priori and a posteriori social conditions of the open social cube (see the philosophical elaboration of its going beyond Hegelian and Marxian dialectics as elaborated by Bhaskar, 1993, p. 22; 1994, p. 119), as they manifest and are absented by their dialectical powers, and transfactually and causally efficacious relations in discourses and structured mediated practices.

Contrary to the aforementioned actualist and irrealist approach, the practitioner's assessment of a student's behavioral competencies is possible via an absence category in seeing the open, multilayered, constrained transformative educational life. As a psychological research outcome, the social cube in the individual realm of the human structured agency[12] (the students here) emerges as a learning template for students' behavior monitoring of the behavioral forces at work (modalities). That is the practical realm for the practitioner's transcendental arguments to identify and to implement scaffolds for teaching and learning psychology. The practitioner's intention with the newly invented and scrutinized learning activities enabled by these tailored scaffolds is to aid the students to shed their potential dysfunctional activities and to encourage engagement in self-regulated learning by providing incentives for their daily doing and learning.

1.3 Scaffolding of a student's daily learning via behavior monitoring devices eschews instructive teaching

An applied, broad, behavior monitoring stance grounded in the critical realist perspective arises due to subject–object ontological dualism and the maintenance of individual reflections. This position on activity scheduling, of basing one's daily rhythmics on one's recent behaviors, involves the use of recording and diary techniques that then evolve into collaborative teacher–student discourses which thereby eschew instructive dualist teaching practices. In the critical realist approach of having a direct non-conceptualized basis for individual knowledge of real ontological things, an individual must have referential detachment from the activities of the real ontological things in order to exist at all. Behavior monitoring is an individual's core focus on her or his behavior management, and behavior monitoring and its recording does not need, nor is it initiated by, one's epistemological or conceptual positions. In philosophical terms, individual reflection in all forms of negating activities can evolve into non-dual thinking about the real polyvalent things of the world. This direct view into human contextual behavior is impossible in empiricist psychological theory- or methodology-driven research because it does not maintain the primacy of ontology as the critical realist position does.

The metacognitive behavior monitoring approach developed here, via specifically tailored behavior monitoring records of one's recent daily behaviors, when implemented in the teaching practice might revive a student's critical and functional behaviors. She will identify and appraise her potential dysfunctional behavioral activities, and will find other behavioral options to scrutinize and implement. However, as the first two research projects here demonstrate, the methodology is easily restricted to the students' scrutiny

of their dysfunctional behavioral problems. In the third and fourth projects it was possible to expand this approach into the monitoring of all one's divergent behavioral forces, if the practitioner can use this method in the assessment of the students' daily functional and dysfunctional behaviors. A student's scrutiny of her daily learning could occur through tailoring and targeting the monitoring records for each student's successful validation and revision of her real, potentially dysfunctional behaviors. Similarly, it could reflect the student's intrinsic mindful behavior and critical and metacognitive thinking into her or his spontaneous doing. Lapses into theoretical generalizations and flawed abstractions might eventually become abolished in the student's learning and daily being by means of her metacognitive behavior monitoring exercises. If the practitioner's exercises provide adequate means to assess and evaluate the student's subjectively invested nature from her chosen specific interests, then her continuous scrutiny in recording would provide her with the means to shed her dysfunctional interpretations and appraisals, and for taking more adequate and more holistic (mindful) perspectives to her past, current and future contextual behaviors, which is also the core of the self-regulated learning objective in academic studies.

Behavioral recording would help the student to see how her recordings might rely on idealist forms, norms and concepts that distance her from spontaneous monitoring of her behaviors, in a process where she, by her use of theoretical reference points for her behaviors, decreases her spontaneous touch vis-à-vis her present challenges and on-task performance. In her biased reflections she might digress from her real, contextually constrained behavior and focus instead on her unreal (epistemic, idealist, illusionist, etc.; not as ontological things) abstractions; according to Beck's (1987) formulation these cognitive distortions could decrease her cognitive on-task performance and its metacognitive management. Thus, by conceptualizing abstractly, metacognitive behavior monitoring entails all one's tacit or overt attributions and evaluations of one's activity management under one's daily, constrained rhythmics.[13] Flavell (1979) has presented a preliminary sketch of mindful and mindless behaviors, which is also the general behavioral issue in recent behavior control and cognitive behavioral psychotherapeutic literature.

It is important to note that metacognitive behavioral competencies emerging from one's daily rhythmics are not possible to measure via dualist theoretic positions, which have been the main research approach in empirical psychological research on human self-regulated behavior and learning. These actualist, inferred laws presupposed to be residing in human behaviors lapse into the reductionism of metaphysical or physical laws, and these 'laws' are not contextually derived mechanisms in social transformative life (whereas Bhaskar's delineation of the social cube is). Seeing and theorizing only about constant social conjunctions does not give access to the generative mechanisms of human behavior in all relations within the social cube that is the Four-Planar Social Being (Bhaskar, 1993, p. 160). The multilayered transformative social life with its various constrained relations is the realm where human intentionality, as an ontological aspect of the social cube, can be delineated in all MELD forms in dialectical, critical realist philosophical terms. Because all human competencies are to be assessed in working with clients in clinical and educational settings, in this psychological research the most appropriate psychological conceptualizations and explanations of human agency, or of all student behaviors, as well as practical options for enhancing that behavior in daily learning and well-being, are CBT formulations and conceptualizations, as shown in each phase of this report.

Metacognitive behavior monitoring via tailored monitoring exercises enables the practitioner's assessment and evaluation of the students' behaviors and their monitoring via recording. The exercises also concurrently provide access for the practitioner to the realm needed to evaluate the students' behavioral competencies in their reflective problem-solving realms; this is because behavioral competencies, as human dispositionalities in individual anxiety and uncertainty management, are core behavioral issues that do not need theoretical positions but rather the direct observation of the students' behaviors and their records of their behaviors. In clinical, cognitive behavioral psychotherapeutic settings, the assessment of an individual's daily behavior and behavioral deficits prompts changes enabling the shedding of problematic dysfunctional behaviors.

This clinical psychotherapeutic approach, and the practitioner's clinical experience in encouraging a client's validation and appraisal of her real behaviors, allows the introduction of additional teaching scaffolds while concurrently teaching basic knowledge about human nature and developing the students' problem-solving competencies. It is expected that the students will experience stress: they see that their real behavior is deficient and is negatively or dysfunctionally appraised by them, causing disruptions to their contextual task management behaviors. So the devised behavior monitoring means would also support a student's revalidation and restoration of her real contextual behaviors.

A behavior-monitoring research stance in the practitioner's teaching of psychology seeks to invigorate the students' real metacognitive learning. Owing to a student's lapses into theoretical issues or to surface learning and thus her potential escape from her ontologically real entities as internal and external behavioral determinants, from a critical realist stance there is a need to invigorate her constant meta-evaluation, otherwise the human context might be evaded by the individual student. For example, according to some critical thinkers, this is the crucial issue in Theodor Adorno's philosophy. The loss of real ontological things in individual reflections indicates learning by imitation and operant learning, in which mindful activities are lost as the real embodiment of intentional actions. Under a student's tacit learning behaviors a practitioner-teacher's instructions, often even purposefully, transform her learning of theories and unreal norms, which are not real ontological things in the transformative and transforming world. However, as has been stated above, this abolishes a student's real behavior as metacognitively appraised and initiated. There are no appropriate methods for teaching a student the ways to learn in a deep sense, one that maintains a student's metacognitive problem solving.

From the teacher-practitioner psychoeducationally driven collaborative teaching requires a firm commitment to observational knowledge and to the empirical research approach embedded in a critical realist emancipatory[14] stance, in spite of the fact that contemporary psychological or sociological educational research does not consider it as a real and explicitly elaborated option. However, in this version of the critical realist approach it might be feasible to maintain an empirical investigational platform from the very beginning, as established by these four separate and conjoined research projects. The initial approach to students' metacognitive behavior monitoring excludes other research approaches, such as attempts to define basic concepts theoretically (e.g. mindfulness, self-regulated and surface learning): a method for behavior monitoring intended to discern conjectured theorized mechanisms in the human mind, or an adherence to specific fixed methodologies commonly applied for measuring a student's abilities or skills. The measurement of metacognitive behavior monitoring and cognitive monitoring is here inferred directly from the practitioner's behavioral assessment of the students' competen-

cies and deficiencies. The attainment of deeper psychological explanations of the students' daily behaviors (anxiety and uncertainty management) is crucial because in large group settings the practitioner's tacit reflections on the students' divergent behaviors would not satisfy the requirement of adequate deeper psychological explanations of the students' behaviors in order to provide sound grounds for special scaffolding and empirical research into the feasibility of the scaffolding.

Thus, the empirical research carried out in each of the four projects is not theoretically formulated, but is based on real social educational practice – as multilayered and constrained as it turned out to be. The measurement of the students' learning behaviors by diaries and records, and the behavior assessment of the students' learning behaviors and competencies so derived, gets to the core of the students' real behaviors. As a scientific psychological discovery, such an approach represents this practitioner-teacher's intensive attempts to infer the research problems directly from the relevant social practices, and it enables his intensive and flexible methodological research steps for validating the assessment, as well as the empirical results obtained

In a similar vein, via additional CBT tools and resources for emancipatory work in teaching, this metacognitive behavior monitoring approach with its practical educational format itself enables innovative options and activities to be implemented in teaching. First, the attainment of pre-test/post-test arrangements for measuring the feasibility and practical adequacy of the implemented teaching scaffolds as designed and introduced in self-regulated learning and problem solving is facilitated by this approach. Second, as a further step it enables the construction and implementation of improved teaching and learning scaffolds. These empirical programmatic arrangements in addressing a student's individual learning are tailored methods and monitoring exercises, to which contemporary CBT psychotherapeutic treatment methods provide additional accuracy and an option to encourage a student's direct commitment to her behavior management through her own (and always malleable) activities. Behavior monitoring exercises are not theoretically inferred or conducted, for example mindfulness is not a theoretical issue. Self-regulation or metacognitive monitoring, and all the constructed and deployed teaching scaffolds, are initially based on the practitioner's assessment of the students' real behaviors; the practitioner's thinking is not initially based on theory–practice dualism because he/she reflects on the real social transformative and open educational practice that is being engaged in, where a student's metacognitive learning has its manifestations (if any). And in a student's really performed reflective learning endeavors, the initial theory–practice dualism can either become identified and alleviated by her intensive deployment of these behavior-monitoring recording exercises or be removed by a student's utilizing of the practitioner's collaborative supervision of her real learning behavior.

However, a great number of serious practical obstacles in the teacher-practitioner's scaffolding need to be surmounted. First, there is a need for refinement of the basic scaffolding of teaching in the first two projects in order to establish real options for the development of additional tailored scaffolding for the students' learning in the third and fourth projects. As this was possible in this research practice, the scaffolding of teaching was transformed into the scaffolding of student learning. Before all else, this research work delineated in real practice how difficult it is to move to scaffolding students' learning, even in psychology studies where the issue of human behavioral competencies is the core focus. In pedagogical studies, this educational endeavor has been diffusely called the issue of adequate learning environments, but scaffolding a student's daily learning environments in fostering her self-regulated learning requires the CBT approach and its rich

means in setting up dialectical, complex and tailored scaffolds for the management of students' learning behaviors.

1.4 Critical realist scientific discoveries in psychological emancipation-oriented research

Section 1 elaborates that critical realism-informed psychological research in any open social real life setting (in nursing education in this case) has no specific methodologies or rigid theories as initial starting points. This discovery is impossible to formulate in strictly logical terms because strictly elaborated logic would be based on theories or methodologies, which would abolish the scientist practitioner's approach from the beginning. Research problems arise from these constrained practices: they involve a complicated transductive procedure (that is, inference from closed to open systems, cf. Bhaskar 1993, p. 232) for the scientist practitioner to identify them as objectives to be researched as they really are. It is also difficult to find a deeper and more optimal psychological explanation of the mechanisms that maintain the problems that might be translated into empirical attempts to establish practical programs to enable the purported changes in these mechanisms, and to thereby reach for an emancipatory social life.

In fact, this student behavior assessment and specifically delineated functional behavioral assessment has emerged in recent years in CBT-informed practices; it is possible to elaborate as a transcendental realist philosophical notion how a practitioner, by his or her referential detachment activities, reflects on all clients' behavioral determinants as (broad and contradictory in their mediations) they arise through the absence category. This research is focused on the importation of the idea of behavior monitoring, its recording and the use of CBT training, which enable the execution of the practitioner's functional behavioral assessment of the students' daily learning behaviors as philosophically adequate. The demonstration of the behavior monitoring approach in this reporting is crucial because via that route in large student groups emerges a practitioner's template to assess a student's functional and dysfunctional behavior competencies as they arise or disappear as real time dispositions within the multilayered, constrained educational practice. Therefore a delineation of the route to an expanded functional behavioral assessment is not the main issue in this research report.

Behavior assessment is well established in CBT client practices, although there are many divergent practical approaches to assessment. At least tacitly, the practitioner intends to invent and devise inventions and implementations for practical programs for clinical clients in order to treat their mental health problems in their real social lives. It seems that social life becomes taken as the source of special constraints directly pinpointed and discerned as the client's epistemic descriptions without warrant. This pretheorization of social constraints that maintain client's problems excludes the client's or the practitioner's understanding of the real deeper mechanisms that need to be confronted and the search for new behavioral solutions. Here, the non-dual position on social life is more pivotal because social practices as entire structures and multilayered relations (within the social cube previously referred to) comprise a great number of conjoined, multilayered dialectical and causal relations that need to be accounted for in the practitioner's assessment of the students' behaviors. In the social transformative practice (social cube), causally efficacious forces are also embedded in the realm of individual behavior and in large group settings; a practitioner's acquisition of clinically or psychoeducationally (or at least educationally) valid data of each student's real-time behaviors is needed for

any functional behavioral assessment to be true and sufficiently adequate to warrant implementations of specific practical programs for the invigoration of a student's efficient and self-regulated learning activities. The dialectical critical realist approach supports the view that the social cube, as an ontologically pre-existing transformative realm, is the ontological sphere where the scientist-practitioner assesses the acquired empirical data about a client's behaviors through dialectical and other arguments in emancipation-oriented practical work. As the third and fourth projects in this research demonstrate, this kind of functional behavioral assessment was sufficiently achievable, at least after the basic scaffolding of the practitioner's teaching was well developed, enabling also students' self-regulated learning.

Similar to the goals of cognitive psychotherapeutic practice, this emancipatory research stance for discovering the feasibility of the established and implemented practical programs requires the practitioner's work to construct a research strategy and methodology entirely separate from practical teaching in order to have a valid research template. This also seems to be Simpson et al.'s (1997) general scientific approach in their empirical research into the effectiveness of academic assistance programs (pp. 78–80). To develop a critical realist approach that applies their suggestions on how to reach a deeper understanding of "having the information necessary to determine, if their [academic assistance programs] goals are appropriate and relevant to their students' needs" (ibid., p. 79), an empirical research program requires the importation of many CBT tools and resources for practical teaching. As reasoned and shown in this practical research project, it means the execution of student behavioral assessments, at least in separate student subgroups. Only by these means might one ensure adequate deeper psychological explanations of the students' divergent and disparate behavioral competencies in order to have the requisite ethical warrants needed to set up scaffolds enabling the improvement of their reflective problem solving and academic learning.

This mode of psychological research into the students' behavioral (learning) skills, capacities and, more importantly, in the search for a true emancipatory approach to the students' behavioral dispositions, implies that changes in these educational social practices might be negative or positive). In this research report, it is asserted that an issue-driven research approach was attained in the third and fourth research projects by discovering the vast discrepancies in the students' behavioral metacognitive competencies. Contrary to this position, by reliance on the tacit idea of social life being deterministic and thus predicable, theory- or method-driven approaches and idealist educational programs, by their rejection of contextually engendered changes, are not able to conceive that this negative possibility of deterioration in individual behaviors needs to be accurately accounted for. This is because social life is constrained and mediated in its transformations, and is the originating 'appearance realm' for each individual psychological being. Social life with its structured relationship to human agency is not graspable by flawed deterministic approaches, which incorrectly seek to discover forms with their inherent forces presupposed to be inside of the forms. Social life is not composed of separate atomic entities and forces that reside in an individual's mind that, which would be appropriate for analytical reduction into the pre-theorized basic mechanistic forms under an individual's lay behaviors.

Of all the different research approaches into assisting student academic learning, metacognitive behavior monitoring is the most innovative because it directly addresses metacognitive behavioral issues. Simpson et al. (1997) give a detailed and evaluative account and state that such behavior monitoring has not been applied in recent educational re-

search. Here it appears to be workable as a critical realist practical approach in the practitioner's practical teaching, and its concurrent research program is demonstrated in the four separate studies of this report. In widening the conception of human behavior to metacognitive realms, the practitioner's position takes as self-evident that every individual appraises their behaviors metacognitively and that these appraisals are the pivotal realm of their present reflective problem-solving behaviors. The students' appraisals, as real data on their real behaviors, provide the means for the practitioner to obtain a deeper understanding of their learning needs in the domain of the students' daily behaviors. Its feasibility is demonstrated and becomes enriched through the application of CBT tools in teaching: both in the assessment of a student's learning behaviors and in the enhancement of her basic functional behavioral competencies. However, the first task is to demonstrate that such research into the optimal behavioral monitoring methods for a student's learning of psychology is workable. Because the means of workable behavior monitoring and the potentially arising rich and intensive options for scaffolding of students' daily learning are occluded in and by the instructive teaching practices, the practitioner must start from scratch or from nothing in order not to lapse into theory-informed methods. The latter methodologies as strongly dualist approaches do not address a student's individual contextually arising behaviors as apt for her recording.

2. THE SEARCH FOR A TAILORED BASIS FROM WHICH TO GUIDE THE STUDENTS IN THEIR DAILY BEHAVIOR MONITORING

This section begins by delineating and outlining how behavior monitoring from a non-dualist position via the practitioner's assessment provides practical means to scaffold a student's learning of psychology. Similar to CBT clinical settings, this practical achievement simultaneously opens up the psychological research setting to measure the feasibility of the implemented teaching and learning scaffolds on the students' metacognitive behavioral dispositions.

Next, it is elaborated how, from a critical realist philosophical basis, the teacher-practitioner's tools are devised and refined in the assessment of a student's learning, and in practical inventions and implementations of scaffolds for enhancement of her self-regulated learning via behavior monitoring tools.

2.1 Critical realist perspectives of the practitioner's basic tools for teaching the students about human nature

2.1.1 Recording of metacognitive behavior monitoring as the practitioner's bridge to teaching practice

The means of implanted behavior monitoring and recording provide a bridge aimed at collaboration for the students as well as for the practitioner to refine the means of behavioral assessment, and from that assessment position to execute tailored scaffolding for enhancement of a student's daily learning in psychology studies. So this practical approach diverges from all contemporary research and its practical approaches in the teaching of psychology about human nature in academic educational and college settings. The

critical realist position into human psychology and human behavior comprises the realms of dualist positions (for example mind or external behaviors) as well as non-dual positions both of which are widely and flexibly utilized in contemporary CBT clinical practices.

The critical realist perspective enabled the practitioner's practical teaching and his concurrent empirical research on the feasibility of teaching that would sustain the students' acquisition of basic knowledge about human nature. The critical realist perspective was also used to enhance students' daily self-regulated learning through scaffolding of the teacher's teaching and the students' learning. In the practice there opened up an adequate basis for practical teaching via means of scaffolding as well an empirical research of its feasibility: in the first two research projects the scaffolds to teaching students in their self-regulated learning and in the last two research projects the objective was to support student learning.

2.1.2 The practitioner strives towards an expanded behavioral assessment of a student's divergent behavioral competencies

The teacher as a researcher and as a practitioner in his teaching of basic psychology in vocational nursing studies is confronted by many difficulties in how to teach the students at all about human issues which are deep and require one's individual understanding and creativeness about human development. It is demonstrated that there is no need for theoretical elaborations of hitherto rich self-regulated contemporary research practices, or of empirical outcomes of this theoretic research when dwelling on the unknown practical issue of metacognitive behavior monitoring. This position requires a psychological approach to human behavior where all intrinsic and extrinsic behaviors (without dualisms as is the original psychological position) become grasped at once by the practitioner's working. That is only possible if the practitioner has tools for assessing and accounting for all of a student's flawed and functional behavioral modes in a student's real behavior monitoring and its recording. This was possible from the mindfulness psychological perspective, for example Baer's (2003) outline of the issue of metacognitive behavior monitoring. This position was refined via the critical realist philosophical position into human behavior, so that an individual by her or his referential detachment activities, that is transductive reasoning, can search for regularities in her or his recent- and future-oriented behavioral patterns.

Reflections are, or rather arise from, the internal and external emergent and absent things (forces, powers, etc.) of the ontological polyvalent world; that also means human reflections of absented things of the open, constrained and continuously (in principle) changing world which have their deterministic impact on these practices. This firm initial commitment to conceiving mindfulness activities, such as behavior monitoring, in the ontological world beyond pure epistemic and epistemologies requires a critical realist philosophical stance for noticing and comprehending the entire dynamic sphere of behavior monitoring, as Bhaskar (1993, p. 4, pp. 111–112) discusses in his ontological realism and epistemological relativism of the emergence of real knowing as judgmental rationalism in human beings' reflections. Behavior monitoring is monitoring of real internal and external ontological things as the determinants of an individual's contextual behaviors in one's daily rhythmics; here behavior monitoring is not monitoring one's behaviors from preissued theoretic or other specific individualistic realist viewpoints or interests[15].

This initial approach stands for metacognitive behavior monitoring of individual daily rhythmic or individual world-lines. This 'thinking' or internal activity of reflecting on all things of the world is the realm of both human control experiences and metacognitively managed functional or dysfunctional evaluations. The psychology on human control and its behavior has been the realm of many conflicting and ambiguous theoretically deduced explanations. These explanations, which are not specifically targeted at a given transformative social life, do not provide a practical basis for this practitioner's practical interventions to enhance a student's self-regulated learning through behavior-monitoring recording techniques. The main objective of this project, under diffuse or broad learning conceptions, is not philosophical or psychological theorizing but an empirical search for the most feasible behavior monitoring exercises for bringing back a student's self-regulated or self-directed or self-initiated learning. Theorizing and attempts to find a rigid or one adequate method for monitoring exercises was excluded by taking a non-dual position to an individual's internal and external individual behaviors and to the monitoring devices. Instead of this theoretic position the practitioner's objective is focused on the behavior assessment of a student's daily learning behavior, as elaborated in cognitive behavioral psychotherapeutic practices (Kohlenberg & Tsai, 1991; Barlow, 1993; Haynes & O'Brien, 2000; Persons, 2008). Without plunging into crucial philosophical issues, it should be said that behavior assessment is viable and executable by the practitioner's referential detachment activities in knowing of the real constrained and mediated things, powers and dispositions of the objective world. Because this kind of a practitioner's assessment might be inadequate or impaired through his tacit ideological objectives its workability and practical adequacy has to be discovered empirically, as performed in these four research projects. Initially, a practitioner's behavior assessment of a client's as student's behavior is based on his observation, the same applies to functional behavior analysis as a specific and more elaborated assessment. In critical realist terms, the latter assessment requires the practitioner's individual transcending beyond the observable sensate things to hidden or deep structures of the all world things in order to define a client's symptomatic behaviors in their exerting relations.

In working with large student groups, comprising students with disparate behavioral competencies in their individual management of their daily learning in constrained social life, an explicit position in the assessment of the students' behavioral competencies must be performed in the students' transformative social educational practice. Here, from the second research project onwards, the functional behavioral assessment, through the social cube approach, evolved or expanded to the assessment of the student in three divergent subgroups of the students' behavioral reflective learning competencies. The expanded functional behavioral analysis of the three divergent subgroups became possible as a practitioner's dialectical and transcendental arguments became validated by the performed empirical investigation of the workability and feasibility of the implemented laboratory programming of the students' daily learning of psychology. Basic to that practical assessment position are that absented things in the students' learning have real impact on their daily behaviors in relation to their self-regulated learning. For example, if a student did not learn at home, as seen from her behavior monitoring exercises, the fact very often impaired her classroom learning too.

The practitioner's knowledge of a client's behavior and the open social realm, where this behavior occurs, is a practitioner's referentially detached knowledge of all ontological (also social) things, and even things that are absented, that knowing can be possible via the practitioner's dialectical arguments regarding the forms and dialectical and causal re-

lations in the educational social life. This individual direct knowledge by transcendental thinking, that is by transcending the transcendental and transformative world (in the practitioner's reflections too), might or might not be knowledge of real ontological things. Theoretical deduction of the referential detachment as the core of a practitioner's professional endeavors is not specified in any contemporary descriptions of CBT therapeutic assessments. For example, Haynes and O'Brien (2000) propose that its results are to be seen as outcomes of a scientist practitioner's activities, unfortunately they do not elucidate how their position is possible if they tacitly stick with inductive reasoning. They in broad terms describe the assessment of the practitioner's mindfulness activities as mediations, and a great number of things in a client's life are relations of these and are causally determinate. However, they do not elaborate whether the functional assessment is a scientist practitioner's formal problem solving or his reflective activities, in this research it is the latter. As stated in the previous chapter the avoidance of theory- and/or method-driven practical research and the maintenance of an issue-driven research represent an execution of functional behavior assessment. It is essential because a scientist practitioner works through means of tailored treatment and also suggests real options for enhancement of a client's target behavior in abolishment of her symptomatic behavior and increasing of her functional behaviors by re-scaffolding with CBT tools. However, the assessment might be inadequate or re-scaffolding might not be feasible and therefore it requires empirical research to guarantee that its practical execution is optimally feasible.

2.1.3 Psychological dual and non-dual perspectives into basic behavioral skills and competencies

When maintaining the initial approach of monitoring individual behavior a great number of theorists in psychology, especially in self-regulated psychologies, have pursued conceptualizations of human mind and behavior control in individual management of uncertainties and anxieties. Anxiety management is not a theoretical issue; however, it has to be measured directly as a human activity, where individual creativity[16] arrives without theoretical attempts to justify the research task and its method beforehand. To discover the way a student manages anxieties in her behavior is a practical task. Teaching interventions as scaffolds for further evolution of metacognitive monitoring make this task feasible as a mindfulness behavior. In the scientist practitioner's behavioral assessment position, behavior monitoring addresses an individual's inherent forces as internal modalities and therefore its optimal measurement tools and objectives in enhancement of self-regulated behavior as reflective problem solving or mindfulness, where uncertainties are real determinate things and templates for this very behavior. Initially, anxiety management is not a theoretical issue, although it deploys a great number of flexible theoretical conceptualizations and measurement tools from the cognitive behavioral psychotherapeutic tradition.

This behavior-monitoring research approach is practically applicable in large teaching groups for all students' learning, whether learning is in its nature metacognitive or not, where the latter indicates either a limited self-reflection of despairing moods or abstract theorizing. The initial position, discovered at the beginning of the research, states that the students' divergence in their self-regulated behavior and learning is enormous. It connotes the need for conflicting teaching policies; some students do meet the demands of academic studies and some do not. The practitioner-teacher attempts to invent and deploy tailored interventions and scaffolds for self-regulated learning to decrease and elimi-

nate surface learning activities and their teaching methods in the educational practices. The research procedure is not based on a specific and sound theory-driven formula, although it is deeply theoretical in its core practice. Instead, the research logic emerged gradually as an intensified gradual focus on an empirical research in each of four separate and gradually enriched projects. Teaching in nursing studies in its most dominant form can be lectures that are based on student learning by perception and on operant learning, not conditioned learning in metacognitions. Therefore, this whole package of scaffolds in teaching introductory psychology, aimed at initiation of self-regulated activity and metacognitive problem solving in nursing students, is not feasible to implement simultaneously or in one cross-sectional practical project. Each project is a practical empirical study on the most feasible scaffolds in psychology teaching.

The practitioner does not restrict his work to fostering a student's specific academic skills, for example learning arithmetic or spelling. There might be no alternative teaching techniques to interspersing procedures in learning as formal skills, as Cates (2005) outlines in his article on the effects of these interspersing procedures. Rather, the issue is to enhance self-regulated learning in teaching, or at least to verify optimal scaffolds for teaching students in fostering their most efficient strategic learning of some type, even of strategic surface learning. The research issue is not to promote specific theoretically justified student competencies and dispositions or any specific skills, although they might improve in self-regulated learning behavior by attempting to enhance basic core competencies in self-regulated behavior. Starting from Sternberg and Grigorenko's (1997) discussion of styles in the domain of mindfulness (they do not apply the concept to human behavior but address this mindfulness issue in general terms) the incorporation of means of cognitive behavior monitoring into a student's real learning itself might be practically possible when having a critical realist basis of a structured human agency to human behaviors. Mindfulness is a broader psychological issue to human behavior compared with elaborated theoretical self-regulated behavioral positions because it introduces the option that self-regulated learning might not occur due to behavioral deficiencies. Mindfulness does not only refer to presumptive idealistic individual capabilities of human mind but rather to all behavioral competencies or dispositions. The elaborate conception of human individual behavior is a rich pluriverse in its psychic activities of an individual domain of human attention, interpretation, evaluation, and of metacritical or metacognitive awareness, or of spontaneous control over individual internal psychological activities in one's contextual sense making and its management.

This broad non-dual psychological theoretical approach to mindfulness is the main theoretical conceptualization of this project's initial psychological approach. It departs from self-regulated theoretical formulations and from technical methods of enhancing reflective problem solving, as well as from all other techniques in teaching. Mindfulness is not a theoretic issue here but it emerges in individual dialectical thoughts, as a great number of psychologists have outlined since 1970 (see Buss, 1979; Riegel, 1982). This notion has changed to discursive psychology (see Harré & Grant, 1994) rooted in constructivist psychology, following Kelly's (1955) psychology of personal constructs. Without a discursive psychological stance or psychology of human constructs and without having a conceptually elaborated action control approach to laboratory research (Carver & Scheier, 1982a; Kanfer & Kanfer, 1991), this mindfulness has evolved in its post-cognitive psychological or post-Piagetian perspective into pragmatic behavioral positions. For example, Basseches (1984) performed an empirical research in development of dialectical thinking on adults, and Robins et al. (2004) stated by referring to a great number of researchers

that "dialectics have been offered as a coherent system of exploring and understanding our world" (ibid., p. 32). The practitioner-researcher himself empirically attempted to discover adult men's daily activities and their choice patterns that might be specific and typical to adult men with flexible and rich dialectical thought patterns (Puttonen, 1994). The critical realist position to dialectical reasoning as an initial template for reflective problem solving or for spontaneous actions and for intentionality comprises the psychological notion that an individual metacognitively monitors and reappraises her contextual behaviors. Without putting stress on this mindfulness root in philosophical terms, this dialectical critical realist position via its philosophical notions (such as dialectical and transcendental arguments, Bhaskar, 1993, 2002) paves the way for a psychological research aimed at discovering novel methods for an invigoration of human spontaneous behaviors, as was the objective here through the invented CBT behavior recording and scheduling techniques.

Mindfulness informs a strong pragmatist approach to human daily behavior and reflective problem solving. In its initial non-dual perspective it refers to individual behaviors as to how a human being confronts all things under a constrained inner and outer world in her acting from and on world things. In the critical realist philosophical perspective, human mind is not an intrinsic entity with its generative and deterministic forces and powers, rather it gets its existence or manifestation through individual reflective activities from all external real contradictory things. The critical realist perspective deepens the mindfulness psychological notion by introducing a structured conception of human agency where there emerge many layers of internal functions that manifest for example, as referential detachment activities and dialectical thoughts in reaching ontological conclusions of world things (Bhaskar, 1993, p. 107).

2.1.4 Assessment of individual daily behaviors does not start from psychological theories

Here is delineated how a practitioner's assessment of individual daily learning does not allow for the practitioner to restrict his perspective to initially chosen theoretical psychological conceptualizations when uncertainty management is the critical realist position. In CBT practices individual management of anxiety experiences and uncertainties is the core issue needing specific psychological theoretical conceptualizations that arise from the real educational practice, as they become enriched and deepened in each of the four research projects. In that way it is possible for the practitioner to eschew the dominance of dualist psychological conceptualizations and flawed theoretical explanations either on human mind or on environmental psychological conditions.

In critical realist philosophical terms, an individual's reasoning can lapse into theories or sensate things, thus blocking out the transcendental detachment activities of knowing of real world things as specific powers and mediations. Through an attainment of her dialectical arguments[17] an individual might not be able to have real knowledge of the transcendental world mechanisms; individual transcendental thinking might become occluded in the real emergences of an individual's sudden 'out of the blue' human actions. This is the realm of all individual activities in all modes of negation and in all ontological modes of MELD(A), this is a critical realist philosophical notion graspable by common sense and by philosophical pondering and revision of the earlier dialectical issues on philosophy such as Kant, Hegel and Marx. Bhaskar (1993) has deepened these dialectical philosophical notions on how to perform empirical social research. Here an individual's

discursive intellect-activities become gradually conceptualized by means of CBT. These revisions from dualist theories of mind to non-dual perspectives of human behaviors give flesh to the practitioner's endeavors. The ontological dualism between a reflecting mind and external world is a real individual behavioral issue, and in CBT practices it is practically covered by the position of metacognitive or mindfulness behaviors where an individual manages and deals with or finds herself confronted with all insecurities of transformative social things. The issue of tacit and experienced and even metacognitively experienced anxieties, and individual management of emotional and all insecurities as conceived as separate or not from the facts of real things of the world, is the main research domain in psychology of human behaviors. In addition, the crucial issues of anxiety, uncertainty and arousals arise in an individual's mind in her contextual behavior to be acted on. In cognitive behavioral psychotherapeutic approaches and elaborations a common research domain is the behavior management in one's daily rhythmics. An individual's uncertainty experiences can abruptly break or distract an individual's on-task performance behaviors as a smooth mindfulness activity. This is tantamount to individual reflections where dialectical thoughts and behavioral patterns emerge as dysfunctional and might become interpreted as negative or evaluated in a way that might not satisfy the needs for one's experiencing self-efficacy in behaving within constrained living contexts.

The psychological issue of human control, and the broad delineation of adaptive and non-adaptive anxiety control mechanisms and psychological behavioral patterns, are logical and consistent as a dialectical critical realist philosophical approach; a human being is as internally mediated and multilayered as the polyvalent world. Contrary to this point of view, a monolithic conceptualization of a human being, as a theoretically reduced identity with its presupposed universal and deterministic mechanisms, leads to theorized causal relations and theoretical identifications of the presupposed theoretical mechanisms thus losing the real social transformative practice as the research issue. Without elaborating this philosophical issue further, all pre-theorized views on individual behaviors directly abolish or prevent the ever-existing option to psychological research as 'out of the blue' actions, which is the core in mindfulness human behavior. This spontaneous activity or behavior monitoring stands for this mindfulness in human behaviors.

In this research project there is no need to initially theorize the students' daily behaviors. These theorizations remain only as descriptions, not as deeper psychological explanations in the emancipatory search for enhancement of their daily learning. Here the position is practical via means of behavior monitoring and recording. Mindfulness occurs in and grows out of the social and polyvalenthic ontological world. So there is no initially selected theoretical or methodological basis for an introduction and establishment of behavior monitoring records in a certain way. Instead, these records have their justification in the practitioner's assessments of a student's behavioral competencies and deficiencies where human behavioral tendentious dispositions reside. The main issue is to emphasize and elaborate the ways in which the teacher-practitioner's assessment moves on to empirical investigations of the adequacy of the assessment of the students' daily learning, and via that logical route to research the feasibility of the implemented scaffolds to teaching and the students' self-regulated learning, perhaps also paving the way to broader social changes in social educational practices.

There, in the students' mild and latent anxiety behavioral problems, the issue of invigorating and strengthening a student's non-dual reflective activities is the main issue. It turned out to be crucial here, when the students did not primarily suffer from clinically significant anxiety behavioral disorders, and where dualist psychotherapeutic means re-

quired much revision in order to find direct and strong practical means in behavior exercises for strengthening their broader reflection of all social world things, and when their schooling was primarily focused on educating them to confront mind and material physical mechanisms conceived as separate and malleable through instructional methodic means.

2.2 Into metacognitive behavior monitoring via CBT-informed recording techniques

Self-regulated behavior as an individual's intentional behavior (in Bhaskar's philosophical terms, 1993) and as mindful behavior and learning (in Langer's terms, 1997) depends on the individual's skills, capabilities and behavioral dispositions and on the constrained social life. In order to account for both realms in the practitioner's assessment of a student's dispositions and potentialities, a need arises for the practitioner to use cognitive behavioral approaches and conceptualizations in order to warrant the practitioner's behavioral assessment. From that assessment, the practitioner devises practical programs in order to introduce changes in individual behaviors that would decrease educational coercions in learning and individual life. An individual student's behavioral realm is the only level and realm of the transformative social practice where positive changes can be assessed and generated as a student's mindfulness behaviors. Its initial collaborative practice continues with the third wave of Behavioral and Cognitive Therapies (see specifically Hayes et al., 2004). To utilize behavior monitoring methodology in Hayes' acceptance-mindfulness terms, this behavior assessment and its CBT practice, "emphasizes contextual and experiential change strategies…and the relevance of the issues for clinicians as well as clients" (ibid., pp. 5–6).

In teaching the students about human nature, the utilization of means of behavior monitoring recording and scrutinizing requires specific scaffolds incorporated into the teaching structures and discourses (as learning processes, learning materials, classroom coaching and evaluation of learning outcomes, etc.). These specific scaffolds to guiding students to these deeply and subjective psychological learning activities are not possible in dualist teaching discourses which through instructive teaching means either reify individual personal realms into mechanistic positions or use superficial descriptions about the general and idealist social environments. Therapeutic objectives of focusing on human skills can be risky because the focus might conceal knowing of a client's hidden and continuous re-emergence of new behavioral factors and mechanisms behind the maintenance of individual contextual behaviors. Ferrer-Wreder et al.'s (2004) position lapses into a theoretic stance on skills and they did not consider this potentially flawed and methodically rigid option in improvement of a client's basic skills. Also Bradley-Klug and Shapiro (2006) notice that skills-based approaches in improving students' learning entail weak generalization effects outside the specific task sought to be improved by instruction-based CBT-training programs (ibid., p. 289). Here, via stepwise practical critical realist-informed research, students' behavioral competencies were attained as demonstrated in this report.

A serious obstacle is confronted in this dialectical critical realist position if the focus is only on overt behavioral skills because it does not address the deep generative mechanisms where the client has access to and rise to her true intentionality through her new actions in her daily behaviors and its metacognitive management. Sternberg and Grigorenko (1997) have sought for psychologies of styles instead of abilities. Because they do not

discuss a practitioner's option to measure a client's behavioral competencies directly, as they emerge as an individual's dispositions in real social life, they merely prevail in specific dualist pre-theorized skills approaches. Sternberg's and Grigorenko's position to individual styles remains a strict empirical method for nomothetically preconceived cognitive behavioral styles. In this research, individual features and personal and behavioral styles, although being only overt descriptions and theoretic categorizations, do not refer to an individual's dispositional competencies as they are generated or become absented in a client's daily rhythmic.

A human skills-based research position would exclude an invention and execution of means of tailored behavioral monitoring to measure individual behavioral functional and dysfunctional behavioral dispositions as used in CBT-client practices. Instead, this project has taken a metacognitive behavior monitoring position, where each individual evaluates her own behaviors. For the practitioner, as well as for a student, an individual's metacognitive evaluation provides direct access to empirical data of all of a student's metacognitive, cognitive and overt functional and dysfunctional behavioral activities as they emerge in individual perceptions, interpretations and evaluations. In order to sustain specifically an emancipatory social science and non-reductionist research position, special kinds of realist approaches to the measurement of separate mind-functions need to be avoided in order to set learning scaffolds that meet the students' divergent needs in their daily learning.

Mindful behavior as the main issue in this research introduces the logical strategy for empirical measurements on behavioral monitoring and its recording methods, informed by CBT. This critical realist approach to self-regulation and its learning departs completely from ability and specific skills-based psychologies where an individual mind is not conceived as a structured human agency with contradictory behavioral tendencies and individual forces. Sternberg's (2000) notion of conceiving self-regulated behavior as an issue of cognitive styles is not applicable to the executed tailored scaffolding. This conceptualization of mindfulness, and a great number of its self-regulated meditative forces behind human problem-solving behaviors, might be consistent with theoretical psychologies of self-regulation if one wrongly assumes that individual self-regulated learning and individual daily self-regulated behavior are the same psychological things. However, by theorizing, self-regulated learning first becomes excluded as a holistic practical position into individual behaviors, which is a deep practical viewpoint in CBT and its psychotherapeutic practices.

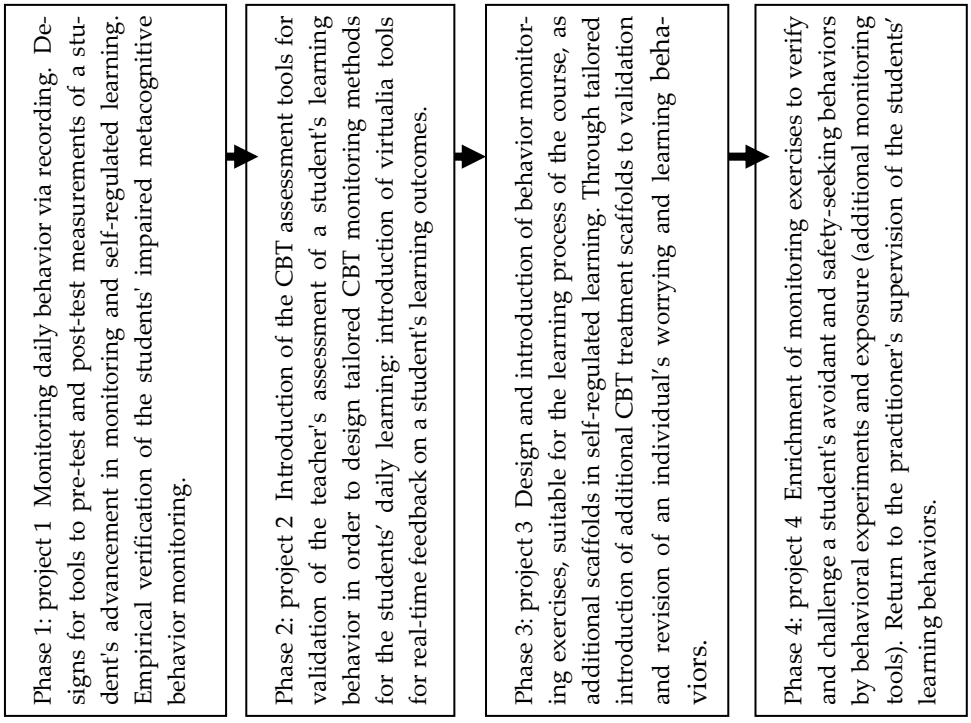
Firstly, in the CBT position to self-regulation is one's monitoring of individual concurrent behaviors; that is one's awareness of individual intrinsic and extrinsic factors in behavioral management. This monitoring is the domain of intentional activity as an initial emergence of human intentional being: self-regulated behavior is 'out of the blue', sudden human behavior, it is contextual and occurs intentionally as Bhaskar (1993, pp. 276–279) elaborated in critical realist philosophical terms. Secondly, to describe briefly the evolving main research approach as an applied social science with its particular logic of a scientific discovery implies the empirical measurement of the workability and impact of the implemented scaffolding on a student's behavioral dispositions (Bhaskar, 1993, p. 133; 1994). Similarly and thirdly, it permits the researcher's metacritical philosophical evaluation of the research logic, such as how truly and in the sense of concrete utopia, the real educational life was addressed by the practitioner's endeavors. Contrary to the option here, traditional empirical research affairs do not provide philosophical means to a practitioner to evaluate and meta-evaluate the accomplished scientific endeavors in broad

and deep metacritical terms in outlining the most feasible research steps and practical endeavors.

The transdisciplinary research approach from a deep transcendental realist philosophical position to sociological and psychological perspectives to social practice is broad and deep in metatheoretical issues and it is concrete in the practical endeavors. Therefore reporting these endeavors requires much discussion and writing in search of different explanation reframes as well as in optimal practical designs and demonstrations of the scaffolding endeavors. In fact, by going beyond critical thinking as a psychological research approach it brings to the fore a totally novel conception into human behavior which is concrete and universal[18] and at the same time dialecticising human mind with its contradictory powers (for example in safety seeking and on-task performance activities).

Among practical solutions for the practitioner's empirical psychological work to enhance a student's reflective problem solving and learning, the most critical moments that need to be addressed in this report are: (a) the scientist practitioner's functional behavioral assessment, (b) the practical execution of empirical programs in order to enable changes in the students' real social behaviors, (c) a direct measurement of a student's evaluations of the nature and functionality of her behavioral dispositions, (d) the scientist practitioner's metacritically reasoned practical steps for intending changes in the real constrained world, and (e) validation of the feasibility of the empirically informed, and by implementations achieved, potential changes in this educational practice. This practical empirical research work consists of separate gradual empirical research steps presented in Figure 1.

Figure 1. The gradual intensification of specific behavior monitoring methods and the most feasible monitoring package to teaching psychology in nursing studies



2.3 Psychological 'laboratory' research work in an open social life

In the critical realist approach, a social study attempts to maintain the pre-existing social life as its core focus. This social life with its variety of forms and relations is open, multilayered, transforming and transformative, whether it is known or not, so the research starts and ends in real constrained social practices. Worth recalling is that it is not possible to present each research project with empirical results and evaluation in a compact manner because the practitioner works under the very constraints that need to be evaluated in each project separately, and which set the limits and options for the next scaffolding and research project.

In general abstract terms, this educational research is similar to the cognitive evolutionary approach of Fostering Communities of Learners where the processes are stressed, as Brown and Campione (1996) elaborate. However, their approach is different from this applied scientist-practitioner's position because they attempt to introduce changes within a closed social totality. In this totality the driving force is a general abstract ideology that abolishes 'out of the blue' action as the initial reflective human behavior. While considering the critical realism and its dialectical position (e.g. epistemological, ontological and justificational realms of philosophical enquiry in human problem solving), as Bhaskar (1993) suggests in critical realist philosophy, for the open human mind the multiplicity of transformations and processes in relation to the real world emerge. Thus, the empirical research of practitioner's teaching endeavors highlights process–in-product, and product–in-process rhythmics in the scaffolding endeavors and the transcendental realist research stance to open social transformative life, and does not enable the presentation of the executed research endeavors according to traditional inductive-nomothetic research logics in empirical realism (Bhaskar, 1978). Presenting the practitioner's work in an empiricist research approach would occlude the sound emancipatory position crucial to this research.

In this critical realist position of an investigation of social transformative life a research problem arises from the real pre-existing (social) life, mainly via the practitioner-researcher's observations and reflections of the practice. In terms of practical psychological research it denotes that general psychological descriptions of the students' learning behaviors must be deepened for identification of the generative mechanisms[19] of this social-psychological-material world; it enables practical attempts to make changes in the transitive constrained world. The first general description of the problem, described in the actual world of lay happenstances from a closed social world, does not enable a scientist's comprehension of the fundamental real mechanisms of the multilayered world. Theorizing actual things of the daily happenstances does not lead to identification of the generative and causal mechanisms[20] that must be targeted while striving for changes in this social practice (in this case – in education), this is why pre-theorizing of these mechanisms must be avoided.

Thus, it is improbable that, in the derived critical realist strategy of empirical psychological research, the logic of scientific discovery will be presented concisely beforehand; in fact the practical approach becomes gradually invented and discovered in the practice, see Figure 1. By the same token, the direct applicability of the applied research logic to perform other psychological research in other social conditions is not ethically justified. The deployed logic in its own right and in accordance with the intensive philosophical research and debate during recent years does not conform to the existing theoretical and methodological psychological empirical works. The reader will comprehend the logic by

following the delineation in each of the following four projects, and in the ways the psychological explanation of a student's behavior was derived from the educational and a student's lay practices by the practitioner taking a CBT outlook in scaffolding of learning as a departure point from the theoretically inferred self-regulated learning behaviors. The reader can see that there are no pre-set theories: the introduction of them and the selection of the optimal ones occur directly in the practitioner's transcendental reflections upon the very social practices themselves. There is no specific methodology or a specific original research protocol for the enhancement of the optimal and expected behavioral and social changes in the open social realm by new conditions through practical (teaching) projects.

The starting point is to attain the changes at the individual behavioral level (of this entire ensemble of the transformative social cube and its all relations here primarily in a student's behavior). If the initial description and its deeper psychological explanation of the transformative practices and their corresponding empirical programs of enabling changes were correct and practically efficient, and if the counterfactual forces to sustain surface teaching discourses would not be too dominant the attained changes in the students' behaviors might become generalized and subsequently extended to all the students' learning and to all teaching discourses (in the social cube). If the students find new teaching arrangements in the practitioner's scaffolds to be exceedingly stressful at least tacitly, then they would continue with their secure and stable learning activities and they would concentrate on other (mainly surface learning) courses, conceived as more rewarding to them. The main coercing reframe of the scientist-practitioner's practical work and research is to set up and implement novel, highly justified and targeted scaffolds, consistent with the original metacognitive competency idea, albeit enabling their surface learning too.

The practitioner's approach to empirical psychological research can be presented as follows. As becomes established later in this study, the main issue in psychological terms is to enhance self-regulated learning or mindful learning and in that interface to research the students' rumination and other safety seeking and avoidant behaviors that potentially interfere with their learning. Rumination or other imported CBT concepts are not theoretically inferred in this practical work, where empirical outcomes can't be generalized to other educational domains. For example, there is no possibility to assess the significance of outcomes by using control groups such as effect sizes. The practitioner could not use control groups because educational norms and teaching practices are causally efficacious and the practices themselves discourage novel practical research attempts (for example, comparisons between control and research groups).

As a psychological research endeavor, empiricism and its instrumentalist- and theory-informed logic of empirical enquiry begins and continues in its initial self-preserving theoretical approach. It attempts to discover general psychological laws in human behaviors practically but the discovered issues do not address metacognitive non-dual issues in human behaviors. The supposed empirically inferred laws of daily occurrences and coincidences (values to facts inductions are often biased abstract generalizations) are not laws of real structures of the ontological real (social transitive) world such as dialectical critical realist philosophical elaborations have shown. It is conceivable through Bhaskar's philosophical categorizations of the world as empirical, actual and real[21] (1978, p. 13) that ontological real things exist and exert their forces whether we know them or act on them, or not. In psychological terms, metacognition and mindfulness if having their place in

human behaviors represent knowledge of real ontological things. Empirically verified regularities are constant conjunctions of the actual world and the verified rules are not real laws of social and transitive life and of its transforming practice. That is why empiricist kinds of actualist scientific explanations are theoretically derived and establish false norms that could conceal the real existence of idealist norms and bad constraints in the transitive (social) realm. They could also prevent a practitioner or every human being from perceiving a true idea of the real mechanisms and maintenance factors at work in social life. These real generative mechanisms require deeper psychological–sociological explanations in order to enable practical projects in teaching and emancipatory research; the objective here of which is an increase in the students' self-regulated learning and behaviors.

The social world as a transitive realm of human behavior and the emergence of individual metacognitive resources is not directly addressed theoretically. Instead, the practitioner, by performing empirical laboratory work for enhancement of self-regulated activity of the researched individuals, has to describe in his dialectical or reflective mind these social-psychological mechanisms in specific and appropriate scientific terms. It suggests revision and retroduction (returning the problem at hand to its feasible antecedent causes in Bhaskar's elaborations; 1993, p. 133) of an applied social research. This is the domain of psychological explanation at a deeper theoretical psychological level that gives plain ethical reasons to design and to implement practical interventional programs for enabling changes in the students' behaviors. In this research the students' learning behaviors were addressed by explaining the students' diffuse self-regulated learning and procrastination at a deeper psychological level as their worrying and ruminating behavioral patterns.

2.4 Individual's access to real world things

2.4.1 An initial ontological position in a search for a student's behavioral dispositions

The issue of the most feasible and effective interventions for changes in these constrained learning and teaching practices is a different scientific endeavor in self-regulated learning perspectives from dualistic, theory-based and theory-driven ones. In dialectical critical realist philosophical terms, self-regulated learning and behavior, as really emerging in a student’s daily behavior, can be conceived as a behavioral realm where the subject thinks (or rather perceives, interprets, evaluates) and overtly behaves by reflecting on all extrinsic and intrinsic things, and things that are also, and prior to everything, social in their ontological nature. In this psychological research this means the introduction of identifying and appraising one’s uncertainties in contextual behavior, and if this reflective activity lapses into TINA (‘there is no alternative’) compromises (in critical realist terms) it indicates difficulties in one’s actionability on her intrinsic and extrinsic things and a rise in her anxiety behavioral problems. The critical realist categorical position in ontological and epistemological world things (see Bhaskar, 1997) is here briefly outlined as follows. An individual knows of empirical things, such as perceptions about sensate things. In addition to that empirical knowing individual knowing can arise so that one knows of actual world things, for example knowing of everyday happenstances. One's individual knowing can go beyond everyday happenstances and emerge as one's knowledge of real transcendental things as they are as mechanisms and powers in the world.

The general philosophical position informs us that a student can lapse into theoretic, ideological thought patterns without any true correspondence or coherence to the real constrained multilayered world things, and so there is a need to be metacognitively reflective if her intentional activities are to be maintained and not merely automatic reactions to stimuli.

An emergence of human intentionality in this mindfulness and metacognitive sense of real world approach is to act with ease and optimal effort as Bhaskar (1993) stated in his philosophy; a human being under stress and under coercive social and other powers might not be in a position to see and to act on these transformative forces, she might only theorize this world in terms of her own internal values or general social actual norms, which are not the real things and generative mechanisms of the world.

Metacognition is not a specific psychological concept that requires a precise definition: rather it is a philosophical concept, which refers to and entails the idea of preserving human behavior as thoughts of second- or third-order layers in the mind. In critical realist philosophy, the emergence of metacognitions in individual thoughts and all behaviors represents 'out of the blue' behavior. In order to maintain this opportunity, according to the general emancipatory idea of human behavior in education, a practitioner's aim is to support or to enable the students to overcome a great number of crucial limitations and deficiencies in their learning behavior. In their overcoming activities or absenting activities from the constraints they become intentional psychological beings. In comparison to the introduction and implementation of CBT tools there is no other real practical option for teaching large groups of divergent students about deep psychological issues because ability- and skill-based psychologies alone do not maintain this behavioral competence realm as a whole in a ground state sense (see Bhaskar, 2002). Behavior monitoring as perceiving, interpreting and evaluating behavior when behaving, by monitoring records of an individual's behavior, is the initial stance in CBT practices. These clinical practices are outlined more concisely in the third-wave behavior therapeutic practices, which through the practitioner's expanded behavior assessment of the students' behavior enable psychotherapeutic preventive work in group settings, as delineated in the third and fourth projects.

Metacognitive monitoring at work within individual learning behavioral activities is the initial theoretical position in self-regulated educational practices. For example, Hacker (1998b) deepens Flavell's (1979) original metacognitive monitoring conception to be consistent with Dunlosky's (1998) summaries, but they both depart from the initial position by restricting the focus of self-regulated learning to the specific learning behaviors of formal learning tasks. There have been attempts to expand this monitoring to all daily behaviors. For example, Lan (1998) implemented it in the teaching of statistics in broad monitoring of all daily behaviors as incessantly changing rhythmic or world lines, and Pressley and Ghatala (1990) apply this monitoring instructional position to learning texts. Both of these authors do not import or apply recording strategies as they become feasible and focused after functional behavior analysis in the CBT practices via collaboration, because of the impossibility to obtain the behavioral assessment of the students in order to supervise them in their daily learning behaviors.

In this project the designed and implemented methods to record one's behaviors are argued to be the most feasible solution for many practical and theoretical reasons, in the theoretical sense it optimally addresses an individual's metacognitive behavioral dispositional realms. For example, it displayed and demonstrated that the students' metacogni-

tive monitoring was frequently either disrupted or insufficient thus delineating how the students in social behaviors and learning relied on surface teaching and on surface learning activities. The deployed behavior monitoring modality or contradictory behavioral forces position does not emerge as an adequate option in empiricist research, such as theoretically chosen criteria-based monitoring designs. For example, all four theorized phases of self-regulated learning (Winne & Hadwin, 1998; Winne & Stockley, 1998) do not adequately address both overt and internal activities at the same time, as the metacognitive behavioral position asserts. The students demonstrated failures in seeing and monitoring their conjoined overt and covert individual behavioral functions and activities. Generally, the mindfulness psychological position in human behavior informs that if there are deployed dualist criteria of ascribing and appraising one's contextual activities there emerge many manifestations of behavioral difficulties and breaks in the management of one's ongoing and continuous behavioral metacognitive daily activities. These difficulties and breaks are not possible to address and revise empirically as isolated cases. Instead, although behavior monitoring has been considered as an important issue in human sciences and is a specific deep behavioral issue, the facts directly inform a strong practitioner's reflective scientific activity. In this research it is argued that a practitioner's strong work position only arises if there is a holistic understanding of all the social cube determinants and forces in the maintenance of an individual's behaviors.

As shown in the first empirical project there is no possibility to enhance each student's learning as self-regulated learning in large teaching groups where tailored methodological instrumentalist tools for self-regulated learning are not feasible to utilize and to deploy to each student. The supervision and instruction of the students in teaching seem to empower their present and intrinsically existing orientation and they turn towards theories and knowledge structures that are not real things of the social world to be managed. When the students' basic self-regulation (social) skills are insufficient in encountering the behavioral challenges they might turn to focusing on forms and theories. Or the individual's, putting it in critical realist terms, theoretically managed self-regulated behavior is identifying and managing with everyday constant conjunctions and this is not the behavioral realm to smooth individual behavior monitoring under the external and internal contradictory enabling and coercing determinants (mechanisms) of the same behavior. Theorizing, which is not metacognitively managed, obstructs and impairs an individual's spontaneous metacognitive awareness. Identified theories as norms encourage a student with underdeveloped metacognitive competencies to resort to restricted and ineffective problem-solving behavior. This is the dysfunctional self-reflective mode of despairing moods, as elaborated in CBT reframes (see for example Clark, 1999), and in this empirical project, this limited reflection comes to the research focus in the enhancement of a student's self-regulated learning and daily behavior. In critical realist philosophical terms, individual metacognitive behavior monitoring and thus its recording position is how an individual can reflect on the priori social conditions of the open social cube too (see its philosophical elaboration of going beyond Hegelian and Marxian dialectics elaborated by Bhaskar, 1993, p. 22; 1994, p. 119), such as educational and all the other discourses, structured mediated practices, and posteriori social conditions of the real social life.

2.4.2 Individual daily learning as an individual's behavioral activities

In critical realist philosophical terms, an emancipatory psychological laboratory work of the design and implementation of optimal learning scaffolds for self-regulated learning means the practitioner's as well as the clients' or students' work in the constrained social learning and teaching practices. Individual learning comprises individual behaviors such as smooth metacognitions in one's strive for freedoms and to abolish internal, social and all constraints. The philosophical issue of different notions or conceptions about individual and/or social freedoms is not the issue. In teaching psychology, the practitioner's objective is to provide the students with means to scrutinize and take new behavioral actions in their daily learning and living activities. Individual learning is not a pretheorized issue; rather, learning entails and encompasses all kinds of individual actions, either dualist positions such as surface learning, perceptive learning, stimulus-response learning, or operational reinforced learning. Individual learning can also manifest as behavioral chains in individual reflective actions, as metacognitive internalized learning or mindfulness behavioral activities.

Bhaskar (2002) has sketched individual and metacognitive learning as a three-phase process in philosophical terms without recourse to specific psychological conceptualizations. Here, this learning becomes delineated as follows. At first an individual searches for contextually adequate orientations to the learning task, such as doing subjectively something via metacognitive skills and tools and identifying theoretical concepts without being tied to them subjectively. Then learning progress continues with an intensification of an individual's viewpoints and the trying on of schemas and thought patterns regarding the social learning issues in scrutinizing the new theoretical knowledge. Lastly, internalizations in the individual's mind might take place, for example new individual plans and considerations of future contextual and subjective restructuring activities in one's constrained daily rhythmics (ibid., pp. 150–151). Learning obstacles are the same as contextual problem-solving tasks in daily behavior; in principle, in individual reflections, there is no dualism between individual learning and other broader contextual problem-solving actions. Via an empirical route, the practitioner's task for the enhancement of individual learning is to search and find workable and feasible interventions for intensifying the students' self-regulated learning as internalized and propagated as is possible in the social rhythmic life, in order to have significant positive impacts and incentives on these social learning and teaching practices. In that learning the students might become empowered to continue with their self-initiated and persistent activities in a self-regulated sense, for example shedding their social constraints that they have identified as impairments to their metcognitive learning.

Thus the first issue in an empirical psychological research work, in real behavioral social conditions, concerns the feasibility of novel teaching interventions for enabling individual changes in a student's behavior and learning. Direct changes in the social transformative mechanisms by general ideological utopias and their initiatives in social psychological research are not doable; idealist programs do not address deep social structures that either coerce or enable individual learning. Social structures and mechanisms can only become transformed when the students are incrementally free in reflective behavior and learning. In principle, these transfactual[22] forces at work in social learning practices are causally efficacious – they are repeatedly reinforced in these educational practices by themselves – they maintain the frequently dominant (as will be described and affirmed later on in this report) position of students' surface learning and the teachers' normative instructive teaching. The students' operant learning acts, such as perceived

and intuitive or inductive generalizations are not necessarily reflective thoughts of all mediations and relations of the transformative forces that sustain these educational practices. Because these social structures and relations are transfactually efficacious and maintain the dominance of the surface learning discourses and structures and individual reflective actions, a student's deep and strategic learning can be abolished. Teachers' attempts and intentions to invigorate and increase mindfulness behavior of a student's reflective actions remain meager, as for example described by Schön (1983) two decades ago in general philosophical terms of the reflective practitioner's work. So the task is to seek other practical options that enable changes in these practices or to seek an abolishment of surface and conditioned learning in and via the students' real behaviors and their sustaining teaching practices by empirical teaching programs.

2.5 Critical realist emancipatory stance in scientific discovery

This subsection delineates how a critical realist position opens up a scientist practitioner's emancipatory work position to an open social world. In the constrained social world it is infeasible to introduce changes by any eclectic or integrative treatments, as Davidson and Lazarus (1995, pp. 105–115) stated in their discussion of the two scientifically based strategies for scientifically informed and validated changes by psychological theoretical and methodological methods and practical programs. However, in two general models of introducing changes in human behavior the authors do not discuss the implementation of integrative psychological treatments and the way for the requirement to address and tailor social generative mechanisms to an individual's scrutiny and revision. The generative mechanisms of the real social world in scientifically proven terms, "the scientist-practitioner model of education and training in psychology is an integrative approach to science and practice, wherein each must continually inform the other. The model represents more than a summation of both parts" (ibid., p. 113). To avoid a lapse into tangled constructivism, the elaboration requires a critical realist stance because the practitioner's transdisciplinary work launches a collaborative CBT practice which, as a group setting of divergent students, requires an expanded scientist-practitioner's assessment stance as becomes possible in the social cube reframe. This teaching practice position does not rely on direct mechanistic and instrumentalist driven practices in education because the practitioner's assessment of a student's behavior has its place (an extended functional behavioral assessment enabled by gradual scaffolding of the student's learning) in the entire open social world of education where student learning and daily behavior occur.

Davidson and Lazarus do not extend their scientific approach outside clinical psychotherapeutic settings to behavioral realms in the social constrained life in the practitioner's assessment of students' (clients') problematic behavioral activities that are embedded in pre-existing social practices. If the expansion in the behavioral assessment is successful, as it is argued to be true in the open social cube reframe, the critical realist-informed behavior assessment in its specific psychological explanations enables tailored interventions and empirical measurement of their workability and feasibility with regard to a student's behavior. Davidson and Lazarus do not delineate the practical work in relation to a certain social life. They elaborate a scientist-practitioner's approach as a direct methodological objective to educate individuals in spite of the fact that when the social world is constrained the educational outcomes could be unexpected or even negative. The authors evidently neglect the crucial issue that the initially pre-existing constrained social world

needs to be accounted for ontologically, not only through parsimonious epistemological viewpoints. In their general discussion they lapse into an empiricist methodological research aimed at introducing changes to closed entities through inductive reasoning and through direct empirical analysis. Programs of this kind, which lack a deepened psychological explanation of the problematic behaviors and laboratory programs that seek to abolish problematic behaviors of the real social life, do not invigorate metacognitive reflections for the researched clients.

Contrary to the general practitioner's empiricist, theory–practice dualist stance delineated above, in this project the practitioner's initial approach is at first to set up scaffolds for data acquirement to behavioral assessment, then to refine the assessment means which would provide empirical data about the workability and feasibility of the implemented empirical programs. Based on that assessment and its deepened psychological explanations of the students' learning behaviors, the practical objective is to search for practical solutions to enhance students' daily learning behaviors. With regards to the enhancement of self-regulated behaviors of the students the psychological problem as an objective in scientific enquiry is inferred in the researcher's reflections. The real social educational life together with a student's private life (in the academic, educational vocational organization of nursing) are not graspable by theoretic reasoning and via rich epistemic theoretic analyses, but through the assessment of the real constrained (ontological) multilayered things to be assessed as an essential part of the underlying mechanisms of a student's daily behaviors.

The objective in psychological research – the social practice to be grasped by the practitioner's referential detachment activities do not only entail a client's behaviors but all behaviors and structured practices within the social cube reframe, with its educational social and other mediations at the core – can be outlined in Bhaskar's terms (1993, p. 160) as a 'transformative transforming practice'. The practitioner has direct access to seeing if social structured mechanisms are too coercive with relation to the student's behavioral social skills and competencies under the constraints in education. For example, the practitioner can reason whether the students in their daily behaviors and individual ponderings have access to deep social educational structures and if they are empowered enough to make changes via their own learning actions. Or are the students, contrary to their initial ethical objectives, tacitly lapsing into empirical experiences and/or to epistemic reasoning of actualist daily things of constant conjunctions and not reflecting on the real generative mechanisms of the social educational life, as a critical realist position to the social generative mechanisms are philosophically categorized via categories of empirical, actual and real (see Bhaskar, 1978, pp. 13–15). The practitioner can see how social constraints often come into a student's mind directly as bad constraints and forms, "there is no alternative" (TINA forms; Bhaskar, 1993, pp. 361–362), as if the norms would be in need to be directly managed. In this case the transcendental mediated social world becomes absented in a student's metacognitive thoughts and in her lay social discourses and in other daily actions, the social world through its bad constraints might occlude a student from distinguishing which constraints and norms are enabling and which are coercive in her behaviors and in all others' behaviors. A student cannot think or search for intentional actionable arguments regarding a great number of things in the real world, or in other words for the meaning of mindfulness in its openness in attending to all things. If interpretations and a variety of separate and contradictory viewpoints emerge in a student's reflections she might not be able to refrain from abstract theoretical generalizations about the social behavioral contexts. Rich empirical psychological research has shown that contra-

dictory and constrained connections and relations are not reachable by an individual's thoughts if an individual experiences great emotional stress.

The objective of the research is to describe the real social practices if possible, and then after attaining retroductive (that is reducing the things to their antecedent causes) psychological explanations of the generative mechanisms at work behind the problem area, to design innovative practical programs for enabling changes in these practices. The scientist-practitioner's task in empirical psychological research is to seek validation of the occurred social changes in the educational practices; that is to elaborate on the type (feasible/ unfeasible) of changes that took place and whether feasible changes have happened via specifically implemented empirical laboratory projects.

According to philosophical delineations, the critical realist approach to practical emancipatory-oriented research does not come into reality by turning to constructivism in its divergent empiricist forms of theoretic and practical driven ideals. Constructivism in its initial approach denotes theoretic '-isms' and thus this empiricist theory inferred position lapses into theories that absent ontological real things or transform new idealist and irreal theories into new transdictive complexes in the social life (transdictive complex in Bhaskar's terms, 1993, p. 405; Engholm, 2007, pp. 268–271) which might occlude a student's intentional and true activities. The dialectical critical realist approach is different to the above mentioned empiricist dualist scientific stances. The ontological dimension of transitive social life is the realm of enabling changes in individual behaviors and within all these structured practices. That is why all research must have its initial basis in the practitioner's dialectical elaborations and explanations of these researched social practices. The grounds for this reasoning are initially based on the practitioner's empirical data and empirical research of the concurrent social practice. It is a specific philosophical issue about the alethic truth and about the 'truth tetrapolity' about the ways truth in human discourses and argumentations become delineated and revised from earlier empiricist philosophical stances in dialectical critical realism (see Bhaskar, 1993, pp. 217–218).

An emancipatory-oriented research requires metacritical understanding of these social practices that are not identified by the researcher's theoretical idealist conceptualizations and theories or merely by his direct observations. That is why there is a constant need for empirical measurement of social changes in research objectives and in individuals' target behaviors. Through deepening and progressive endeavors and attempts the practitioner's empirical research objective is to provide a defined and verified picture of the real practice in education and training. Therefore, at first it is impossible for the practitioner to comprehend these maintaining generative social mechanisms because his understanding and work means are limited and coerced by the very educational practice. This is the reason why the research project gradually went on to verify and validate the teaching practice in the enhancement of the students' self-regulated learning behaviors. Empirical measurement in the practical search of the enhancement of students' skills and competencies is pivotal because the scientist-practitioner in his assessments might be mistaken in his conclusions of the most optimal practical means to address generative mechanisms in the maintenance of a client's behaviors.

In this research it gradually became clear for the practitioner that there were no general treatments or other methods for bringing back or invigorating a student's self-regulated learning behavior because the social structures themselves maintained the students' learning and all behaviors. The transfactually efficacious social teaching and learning practices (such as normative instructions, theoretical knowledge and empiricist evaluations of a student's learning outcomes) and others in manifold, contradictory and mu-

tually reinforcing (social) mechanisms more often abolished or prevented the new emergence of a student's intentional learning activities and behaviors.

Social generative mechanisms are not analyzed in detail (it is a philosophical issue) and nor do they require sociological scrutiny in this psychological research. Nevertheless, as secondary results, the practitioner's psychological research provides novel insights into these mechanisms, for example it shows that these social mechanisms act as forceful and bad constraints (coercive) in teaching and learning practices and practically it is not possible to abolish them through a specific research project. It must be taken into account that these constrained teaching and learning practices at the level of generative mechanisms are in themselves transfactual. That is, they are causally efficacious mechanisms and in that they are enduring as Bhaskar (1993; 1998b) has delineated in philosophical terms. The practitioner becomes aware of these mechanisms in the maintenance of the practical constrained social teaching and learning practices in his search for implementations of interventional programs in his ethically justified practical ventures and attempts to address these mechanisms. The teacher-practitioner seeks to resolve in the psychological realm what the crucial constraints are in the realm of a student's daily behaviors and how to seek their abolishment in these social learning practices in the realm of a student's behavior. In other words, the practitioner must assess in contextual behavioral realms of the students' daily life whether they are optimally capable and empowered to make changes in their daily activities and acts. In addressing the students' skills and behavioral dispositions there is need of psychological theoretic pondering of the contemporary empirical scientific research and its rich and specific psychological conceptualizations (in this project, CBT tools were optimal).

In order to maintain the deep flexible empirical research approach to individual behavioral skills and competencies in the concurrent teaching practice of psychology, application of the CBT tools and methods is required because CBT conceptualizations do not turn into an empiricist deterministic position about the presupposed and lately empirically researched universal psychological dimensions of human mind. The latter empiricist dualist position needs to be eschewed here in order to stick to the emancipatory-oriented position where individual psychological dimensions, of which some entail metacognitive behavioral layers, are not deterministic but come into being in real social constrained life. The social cube position provides the practitioner-teacher with an opportunity to focus openly on a student's real behavior and to seek enhancement of her tacit behavioral competencies. It is impossible to change personal abilities or individual psychological dimensions behind human behaviors directly; in critical realist terms behavioral modalities as behavioral dispositions are formed and evolved in the social constrained practices. Positive psychology is not sufficient in tacit or directly occurring lapses of idealisms in the empowerment of human individuals; human behavior can be dysfunctional and independent of individual's own interpretations or evaluations of its adequacy.

In sum: the social transformative, social practice-inferred, practitioner's behavior monitoring position in empirical behavioral programs into a student's learning allows the construction and arrangement of empirical measurement settings to test the feasibility of the implemented programs. The research supports and validates which programs in teaching are the most workable and feasible in the enhancement of students' learning and before all their metacognitively managed learning. Although the educational structures for student recruitment, educational programs and other deep realms of the social practices were reasonably stable, this research into an enhancement of self-regulated learning and behavior is similar to a laboratory psychological research.

2.6 Social constraints as behavioral obstacles in enhancement of mindfulness learning

2.6.1 The rise of the practitioner's psychological CBT research position

There is no space in the research report to elaborate on the contextually constrained social practices, either in general or in deep structured mechanisms, in order to delineate the critical realist empirical approach for enhancement of student learning in a self-regulated realm. As Bhaskar (1993) elaborates, social transfactual mechanisms are inaccessible through sensate experiences or strict methodological endeavors, instead they exist whether known or not by the actors themselves. Nevertheless, there are social mechanisms that can preclude an expanded emergence of mindfulness problem-solving individual behaviors. If human thinking and all behavior is limited itself to management of identities and given norms within an individual's mind, the 'identity thinking' (according to Theodor Adorno's, 1966, philosophical concept) does not allow a student to solve problems as mindful, contextually arisen 'out of the blue' activities. Limitation to forms remains in a problematic and dominant self-reflection of negatively appraised moods and despairs that might not allow broader reflections. This could impair the increase of individual reflection on all internal and external real things as they emerge and act through an individual's metacognitively managed behaviors.

In Langer's (1989) terms, mindfulness behavior implies that an individual is able to question her behavior, and to perform and to do things mindlessly 'expertly' (Langer, 1989, p. 20). Mindfulness, or 'creative uncertainty', according to Langer's conceptualization, is required for individual problem solving. Langer describes mindfulness as, "the ability to transcend context is the essence of mindfulness and central to creativity in any field" (ibid., p. 131). Without idealizing it as an abstract thing, in critical realist terms mindfulness behaviors require the understanding of the real social world; if generative (social) mechanisms as 'bad and strong' constraints or 'master-slave[2] power relations'[23], in Bhaskar's (1993) terms, are at work in education and in a student's social life (as transitive), there is not opportunity for mindfulness (problem solving) if the constraints are not abolished at first. The guiding approach for the research is that the teaching social practices are themselves causally efficacious and evidently these mechanisms frequently and dominantly maintain the rigid normative social teaching and learning practices (as well as all the pre-existing practices). This absents individual mindfulness behaviors.

In Bhaskar's (1993) ontological delineations of absence and emergence, mindfulness as a human activity is not entirely absented because if something is absent via its absence it still influences the maintenance of concurrent behavior activities in many ways. However, the researcher as the teacher might be able to maintain a concrete utopian idea of further emergence of mindfulness behaviors by critical realist, psychological laboratory research on the concurrent teaching practice. The differentiation of ontological things from one's (for example, a reader's) theoretic viewpoints and concepts is the philosophical approach to how critical realism has an emancipatory input in delineating and finding templates to spontaneous actions and in enhancing intentional activity in abolishing bad social, psychological and other constraints and in striving for human freedoms and for flourishing of every human being[24]. As dialectical critical realism has

soundly asserted in philosophical terms, abstract illicit generalizations and the loss of one's contextual 'out of the blue' activities is the manifestation of human social ills; and this research work is deeply committed to the abolishment of social ills.

2.6.2 Critical realist-informed behavior assessment enables novel interventions in teaching

The required and applied specific conceptions of behavioral assessment and functional behavioral analysis as specific assessment procedures (see Barlow, 1993; Naugle & Follette, 1998; Hayes et al., 1999; Hayes & O'Brien, 2000) are not outlined in this report. Instead the invented behavior monitoring approach and the there attained realm to data acquirement of the students' real daily behaviors is the main objective. Behavioral assessment in clinical settings stands for a definition of a client's problematic and symptomatic behaviors, specifically the discovering of the pivotal maintenance factors for a client's problem-solving behaviors to enable alleviation of the symptomatic behaviors and enhancement of functional behaviors via tailored laboratory programs. The literature and descriptions of behavioral analysis, of functional analysis or of functional behavior analysis are various and diverse among professionals. In a critical realist position, the roots of deployment of adequate assessment tools and their integration are diffuse and in tacit inductive reasoning lapse into tangled constructivist and actualist conceptions and its practices. That is because the pivotal ontological issue of absences in a practitioner's reasoning and specifically his transcendental reasoning are not primarily but only tacitly accounted for, and both of these can become undermined by setting ontological primacy to emergent issues and things. Here it is argued that it is crucial to assess a client's problematic behaviors in dynamic relations and in their maintaining and causally efficacious behavioral and social patterns and mechanisms, at least if it is practically possible. These latter real ontological things require an assessment in order to change these behaviors through the application of psychotherapeutic methods and tools in concurrent working practices.

Hayes et al.'s (1999) initial approach is general and focused on clinical settings in a client assessment. The authors think that behavioral symptoms and difficulties require changes in a client's behavior in order to alleviate the client's problematic behavior (ibid., p. 289). The problem of causal and functional relations and mechanisms determining or having impact on an individual's behavior is crucial as noted by Haynes and O'Brien (2000). When they do not introduce a specific position to transformative social practice itself, they seem to have conceptualized causal and functional relations as an informative basis or as subclauses. They have not affirmed how real and causally efficacious mechanisms guide the practitioner's treatment protocols as specific work objectives that need to be accounted for through practical therapeutic programs.

Generally, a teacher's functional behavioral analysis of a student's behavior problems and all divergent behavioral dispositions can contain the features of nomothetic and idiographic assessment approaches (see Hayes et al., 1999, p. 301). The initial idea is that all individual behavior is dependent on all idiographic situational factors. If it is possible for a practitioner (it might not be possible if a practitioner's empiricist dualist positions are strong and undermine his metacritical thinking of the real things in the social cube) to at least take into account some of the real causally efficacious things in the open social cube position, then the practitioner's assessment is not only a practitioner's elective importation of theoretical reflections about adequate practically adequate treatment means. Func-

tional and causal relations become directly addressed in their nodal points via practical programs when the rich psychological research and theoretic and psychotherapeutic knowledge provide informative and guiding practical approaches. The rich psychological theoretical knowledge in CBT practices inform the most adequate practical programming both in delineations of a client's (a student's) symptomatic and deficient behaviors, and in definition main causal and potentially causally efficacious relations that are worth taking as objectives for therapeutic interventions, as stated in the third and fourth research projects. The fundamental mechanisms behind a client's symptomatic behavior have continued to be the objective of intensive empirical research within CBT by clinicians and researchers, but the practical realm to treatment practice seems, at least in explicit terms, to stay as dualist when all a client's or a student's behavioral dispositions are only delineated as individual deep ability issues and as individual dysfunctional impairments residing within the confines of human mind. For example, in this tacit dualist position only individual deep behavioral issues are therapeutically addressed, and individual rumination and avoidant anxiety behavioral patterns in causally efficacious relations in the social transformative practice can become poorly addressed if only an individual's deep mind issues is targeted. In this project it is argued that for the practitioner it is important to take into account how rumination (for example) can have its causally efficacious and deterministic causes in the transformative social practice (within the social cube) in need of being targeted via behavioral monitoring treatment protocols. The issue of how to practically avoid dualist (either psychological or sociological) positions in the practitioner's work would require more elaboration and delineations than the space available here. The issue only emerges in the practitioner's categorical evaluations about the most adequate practical programs for scaffolding teaching and learning and in specific classifications of the key means in CBT scaffolds introduced into a student's daily learning.

The task of assessing a student's behavioral problems and her behavioral dispositions is functional behavioral analysis. It is not only focused on dysfunctional or pathologic behaviors and symptoms but, via the social cube reframe, the assessment accounts also for functional behaviors and it informs practical designs for the strengthening of functional behaviors. Functional behavioral analysis is required in order to introduce specified treatment monitoring records incorporated as scaffolds in a student's learning. Otherwise, behavior monitoring would lose its metacognitive nature that is crucial for guiding and psychoeducating a student in her own revalidation and revision of her contextual behaviors. In the functional approach to the assessment of the student's target behaviors along with designs of workable obstacles to the treatment interventions of any type (teaching or clinical), the student's symptomatic behavior to be removed or abolished in her behavior by the scaffolding of teaching by construing specific tools (learning materials, constructive learning process, coaching, etc.) is first observed. As seen later in the third and fourth research projects, the occlusion of the real open social transformative practice empiricist clinical work is merely instrumental and dualist in its mind–body, theory–practice and all senses. Thus it is similar to abstract theory-informed implementations and here much stress was invested on how the practitioner would tailor a student's supervision of her real recent behaviors. As it turned out in the realm of the teacher–student collaboration the research was not significantly successful because of the dominant social structures in the maintenance of instructive dualist communicative discourses.

The empiricist approaches to behavior assessment were eschewed and thus the practitioner's objective shifts to functional behavior analysis by introduction of rich psychological conceptualizations of anxiety-related behaviors and by CBT tools in the assessment of

a student's behaviors. A functional behavioral analysis here provides the main approach to the practitioner's strive to attain that practice in teaching practice, it sustains the idea of mindfulness and spontaneous reflectivity that needs to be enhanced; it is not possible via rigid methods that are deduced directly from traditional behavior analysis protocols.

The main approach and purpose is to perform a functional behavioral analysis of the students' behavioral and learning difficulties and dispositions, at least at a subgroup level. The required deeper theoretical approach and extension to the realms of the social transformative practice was obtained in the third and fourth research projects by seeing student's behavioral modes or modalities as mutually opposed and conjoined functional and dysfunctional forces. Otherwise, the assessment would fail due to its empiricist and mechanistic approach and if empirical programs were implemented they might only reinforce the dominant teaching practices and increase the students' worrying and despairing reflection, as affirmed and established in the third research project.

In functional behavioral analysis the students' target behaviors in their daily rhythmics that need to be enhanced requires assessment of the educational social practices, for example in order to construct adequate learning materials and other basic scaffolds in teaching. This broad notion of social transformative practice onto human behavior brings back its main issue, the enhancement of self-regulated (social) behavior, and because it turned out to be successful in the first and second research projects new feasible treatment interventions emerged. Thus these interventions in the third and fourth projects did not emerge by the practitioner's theoretic ponderings but in CBT-informed search as to how to set scaffolds directly to a student's daily learning activities in which new and more adequate learning activities would then become generalized and evolved into all their learning and studying activities. These new behavioral activities might then abolish or shed constraints in the social teaching practice to some extent, because direct communicative teachers' discourses to improve teaching via multidisciplinary and transdisciplinary practical innovations are not possible.

The research project's goal is not to discover the most effective teaching instruments in general or to develop the most optimal formal arrangements and their execution in the educational organization. Nor does it aim at descriptions and conclusions of the specific treatment and teaching methods presupposed as having the most feasible pre-test – post-test outcomes regarding the students' behavioral or vocational skills and competencies. The research project was performed in order to evaluate the feasibility and the level and scope of changes in the students' self-regulated behavior and learning in their basic psychological studies. In the case of a success the change might become propagated and introduced in all of the students' learning activities and thus enhance their self-regulated learning. If that occurs, an individual change in many students might increase novel behavioral reflective activities, and enable and engender more innovative socially deep-structured learning practices in nursing studies. To that purpose, a social research through an action research paradigm would not address or enable these required structural changes, and this kind of research is not practically possible because the surface teaching structures themselves prevent these kinds of research endeavors. In dialectical critical terms the most feasible strategy in addressing the real transformative social life (Bhaskar's social cube; 1993, p. 160) is the practitioner's attempt to invigorate a student's self-regulation and self-regulated learning, which has been discovered to be insufficient in successful academic studies (Puttonen, (2002) an unpublished report on the survey of students' learning styles, knowledge conception and behavioral stress symptoms in nursing and physiotherapy).

The main reason to avoid introduction of direct positive changes by instrumentalist and theoretically driven management operations is the fact that the social mediations and forms in the realm of students' self-regulated learning are not possible to take as targets for a scientific investigation by strict methods and theories. This is because these behaviors are the same thing: learning by living and doing or intentional daily activities. No projects and endeavors arise in changing the surface learning practices in the social teaching and learning environment. Bhaskar (1994) elaborates that there is a possibility and a need for critical realist psychological 'laboratory' work. First, the goal is to search for feasible interventions and new practices and, second, to test empirically whether these laboratory interventions are sufficient for changing the students' learning behavioral activities.

The students' dominant surface learning practices in nursing studies are not discussed in this report: that would not help to enhance the students' new deeper learning behaviors. Deep learning is understood as self-regulated learning and is not a particular theory of a practical learning process or processes. On the contrary, Cates (2005) defines an empiricist and idealist form of individual learning as a process of acquisition, fluency, maintenance, generalization and adaptation (pp. 320–321). This idea is not applied here: self-regulated learning with its great number of tacit and combined psychological behavioral operations in mind and overt activities is not a form to be learned, but it manifests itself in a subject's spontaneous activities without a specific general model or strategy. Cates's explanation of the nature of learning remains at the descriptive level and it does not explain difficulties and their initiating factors in learning in an individual's constrained life, especially not of the students with multiple behavioral shortcomings and deficiencies.

In this research project, clear-cut descriptions or concise deep explanations or critical comments are not available for the practitioner regarding these learning contexts or the ways the course in psychology was constructed to encourage the students to learn reflectively by reading, writing, thinking about and discussing issues on human nature and measuring students' recent learning outcomes. As a special course to contemporary diverse psychological issues in human nature the teaching course is executed as an intensive teaching affair with many concurrent and constrained social forces at work in this practice. Contemporary research has shown that ordinary teaching of psychology has little impact on the enhancement of students' self-regulated learning. Teaching practices are problematic because they can maintain the passive and surface learning stance in many ways, typically through their weak individualist stance in teaching large student groups. Brown and Campione (1996), in their research of reflective learning in programs of Fostering Communities of Learners (pp. 289–290), discuss in detail practical problems in teaching psychology and they delineate how a strict behavioral stance in teaching does not enable reflective classroom learning. Here the position is that the social world is transfactual and therefore these surface learning practices not only disable new learning behaviors but can frequently exclude and discount reflective learning activities in a student's daily learning. When the social educational world is not reflexively engaged with deep communicative transformation in improving education the dominant educational practices exclude the rise of more flexible and deeper practices. Here the practitioner's attempt is to introduce changes in psychology teaching by concurrent empirical research of that teaching in the educational practice of nursing to enable a student's reflective and deep learning. Pure sociological delineations and argumentations about the real practice do not bring changes in the deeply structured transfactual social learning practices.

2.6.3 The practitioner's tailored interventions in scaffolding the teaching of psychology

In the critical realist sense a psychological research on students' learning behaviors extends beyond theory- or practice-driven research approaches by the practitioner's behavior assessment of the students' behaviors and in designing and implementing specific teaching and learning scaffolds via specific empirical programs. The practitioner's behavior assessment of the students' (daily) learning could inform an execution of individually tailored learning scaffolds and enable empirical research of the feasibility of the empirical programs in scaffolding if the feasibility of the programs became validated in the open constrained social educational life (the social cube reframe). The practitioner's approach satisfies Simpson et al.'s (1997) criteria to validate empirical programs for the practitioner's deeper knowledge of "having the information necessary to determine, if their [academic assistance programs] goals are appropriate and relevant to their students' needs", as Simpson et al. (1997, p. 79) explained the establishment of an empirical program of actual improvement in students' real learning. Here in the social cube reframe in assessing empirical outcomes in reference and in viable relations to the social teaching practice, specific methodologies and outcomes on statistical significance analysis do not prove them directly. In the third and fourth research projects, while having an open social transformative template to the students' learning behaviors, it became possible to empirically investigate the students' behavioral functional and dysfunctional competencies via the critical realist conception of a structured human agency with contradictory internal psychological behavioral modalities in the implementations of behavior monitoring recording CBT designs.

The critical realist-informed scientific logic and its empirical enquiry stand for a specific scientist-practitioner's elaborated empirical and gradually enriched research. In dialectical terms, as demonstrated in the third and fourth research projects, the establishment of dialectical and mutually disjoined learning tasks and programs in the individual realm of daily learning behavior is the core of the scaffolding of individual learning. The scaffolding of a student's learning forms a dynamic, flexible and concrete structured teaching basis. It is similar to contemporary CBT treatment client practice, where the practitioner or the clinician as a scientist-practitioner evaluates which innovative teaching operation(s) as learning scaffolds is (are) the most workable and feasible to be executed in each individual case for supporting a student's overcoming of her obstacles in daily learning and behavior management. Although these teaching practices are causally efficacious in themselves through their transfactual and enduring forces the feasibility of implemented empirical programs need to be empirically investigated which becomes possible if the measurement tools address the students' metacognitive behavioral competences. As shown in this research the empirical measurement of individual metacognitive behavioral competencies becomes possible from the second research project onward by execution of CBT questionnaires (which are somewhat behavioral modality-based).

The research logic is similar in its theory/practice-embedded integration in each project because it moves into deeper psychological explanatory realms via CBT recourses that cannot be outlined in explicit terms as formal summaries. Albeit, each of the four separate research projects being organically and at least practically deeply entwined has its specific theory/practice integration or condensation in setting a research problem, a

construction of a research setting and its execution in concurrent teaching and a validation of attained empirical outcomes in the open social life.

In the enhancement and enablement of the nursing students' self-regulated learning the starting point is to elaborate the teaching frameworks that largely maintain the students' surface learning and to search the social and psychological mechanisms argued as reasons for the students' impairments in performing crucial self-regulated learning activities in their learning. The educational practices in the students' learning behaviors emerged as surface learning activities, for example a student persistently attempted to pick up separate concepts from a text in reading to be epistemologically explained at once without subjectively seeing, and restructuring the focus and content, if it was about real ontological life. This signifies a lack of individual management of flexible and vigorous behavioral learning activities in learning, for example individual attention and evaluation of the relevancy of individual mental representations in learning can become overlooked by an individual. However, when attempting to increase self-regulated behaviors and their activities in the students, their surface-oriented learning behavior must at first be described by adequate psychological conceptualizations and from there to explanation of the described behavior, if possible.

The generative mechanisms explained in psychological scientific terms and at work are not only sensed or picked up by theories and through theoretical viewpoints, the mechanisms are beyond sensations and in critical realist perspectives they form up a real deep structure of that multilayered, related world. Only by a deeper explanation might there open up a practical path to an implementation of behavioral learning exercises and behavioral programs in order to introduce novel changes into individual learning behavior. Here the practitioner's attempt is to gain explanations of core behavioral and tacit dispositions and competencies in the student behaviors and daily learning. In the search to strengthen a student's functional behavioral competencies all of the three practitioner's practical endeavors are mutually consistent with the behavioral competency approach: (1) the invented metacognitive behavior monitoring programming, (2) the research position of measuring changes in the individual behavioral competencies, (3) in the concurrent teaching practice. This commitment to a research without any preordained theoretical conceptualization is firm and it enables the core existence of the scientist-practitioner's observational approach to the assessment of the students' learning behaviors. It provides the practitioner with the route towards practical flexible teaching steps for enabling the increase of students' functional behavioral activities in daily learning.

The practical emancipatory approach to enhance the students' core behavioral competencies would not succeed if the practitioner attempted to improve a student's interpersonal or problem-focused skills as technical and specific ones. Therefore the shift is from the psychologies of behavioral abilities and skills to behavioral dispositions and competencies, as well as from theoretical control psychologies to psychologies of uncertainties and to behaviors under and within these uncertainties as they are experienced, interpreted and appraised by an individual's continuous behavior management.

A reader with knowledge of and competencies for scientific social research and who is familiar with the critical realist logic of scientific discovery can comprehend the logic of empirical enquiry. This might not be possible if the reader tacitly or otherwise prefers an inductive-nomothetic enquiry through a specific theoretical approach and model, which provides a clear procedure for scientific verifications and/or falsifications. It might be helpful for the comprehension of the research logic if the pre-existing social world under investigation is conceived as constrained and multilayered with changing forces and

mediations that become understood by the practitioner's reflections. If the practitioner cannot see for looking and metacritically evaluate the social practices then they might become more distinct through the performed empirical research. Fortunately for the practitioner there is a variety of contemporary rich psychological empirical research that identifies behavioral mechanisms that might serve as adequate explanative reframes in his assessment of which options would be the most feasible to address these behavioral and all social mechanisms of the transformative life. Because these generative mechanisms are beyond experience and perception and caught by transcendental and dialectical arguments they are not changeable in the transformative practice directly but become encountered via specific learning programs. The research report will show whether there might arise options for changes in learning and teaching practices in the realm of the students' behaviors. That might occur if the students embark on different behavioral activities in their learning and daily living by taking an open and honest look at their concurrent behaviors and shed their identified daily dysfunctional behaviors and engage instead in individual experimentations of new behavioral learning activities.

2.7 Implementation of the learning scaffolds in teaching psychology to young adults

The ways that the scaffolds for self-regulated learning were gradually implemented during the teaching of psychology over many years are only outlined in general teaching means and structures. Specifically, they delineate the initial state and do not provide the research means to investigate the feasibility of teaching psychology or any specific psychological educational objectives unless one lapses into linguistic fallacy and into the problem of induction where students' scores in research questionnaires become classified in isolation from the students' specific living context in which they completed the scoring. Here, in this research, by reaching at behavioral competency realms in the third and fourth projects, each student's scoring in CBT questionnaires represents her real behavior in critical realist conceived modality perspectives. Her score is a means to see and appraise her behavior along the divergent and contradictory behavioral modalities that are not seen through empirically and dualistically categorized deterministic criteria presupposed to be residing and at work as a monolithic psychological dimension or dimensions in human mind.

2.7.1 The practitioner's transition from dualist self-regulation conceptions to behavior modality perspectives

The psychologist in teaching the students basic problem solving and stress management skills first needs sociological understanding of their social practices to evaluate which practical teaching program or package of the teaching practical procedures would be the most effective to enhance a student's self-regulated behavior and learning. Social constraints in this transformative realm of education reside in and impact on the students' behaviors, which is also Bhaskar's (1993) initial stance on all relationships of the social cube. These behavioral activities and patterns as regularities and generative mechanisms in the social-psychological realm could transform and diverge into directions that would unfortunately obstruct individual flexible reflections, such as into limited reflection on despaired moods (Middleton & Midgley, 1997). Therefore the task of teaching human nature in psychology is to support students in conscious metacognitive control over their behaviors and simultaneously to develop cognitive problem solving as a mindfulness ac-

tivity of individual openness and of intentional self-regulated learning and doing. This is the general constructivist approach (Neimeyer & Stewart, 2000) to the way human behavior is constantly moving towards constructing by seeing, appraising and evaluating stimuli.

By contrast, in this dialectical critical realist stance, the delineated constructivist approach to human behavior and its deep psychological mechanisms specifically emerges theoretically as a conflated and loose hypothesis. It allows its conception either through the lens of scientific realism, or some kind of perceptive and emotional experiences, in critical realist perspectives they both are flawed notions of human behaviors. For example Dobson et al. (2000, p. 411) diverge from the constructivist stance when they merge constructivism with the concept of realism and depart from the critical realist position by taking a rational constructivist approach of a specific type. But the dialectical critical realist stance differs considerably from constructivism because, in the former, human mind also embodies a metacognitive or metacritical individual realm in being within and acting on in relation to transformative social forces. This philosophy delineates the possibility of reflective thoughts of all kinds, for example perceptions, interpretations and evaluations that might be flawed and biased. This occurs when an individual commits TINA formations in seeing and arguing about social mechanisms as fixed theories and explaining daily occurrences by actualist theoretic descriptions of constant conjunctions that are not real mechanisms of the transcendent world. In this critical realist approach this restricted, and perhaps by individual's psychic operations remodification in thinking and individual reflection, does not allow metacritical thinking in regards to the real social and other ontological mechanisms, which are the realm of real problem solving and daily living in an individually constrained rhythmic of all world things.

The intention to leave the domain of ontological and epistemological philosophical issues can be summarized as follows: the critical realist stance in daily social human life does not signify a strictly rationalist approach. Although accepting the existence of real world whether it is known or not by a subject the ontological subject and object dualism between them is a real state of the ontological world where an individual subjectivity has its emergence in all individual empirical experiences, actualist theorizing, and metacritical knowing acts (see for example, Bhaskar's delineation of divergent world domains, empirical, actual, real, 1997). In an individual's dialectical reflections this ontological dualism can occasionally be submerged in her metacognitive and metacritical thoughts in the case of mindfulness behavior. If not, individual reflections through cognitive behavioral conceptualizations become flaws in thoughts and other biased mental activities, such as cognitive distortions, self-focused attention, emotivist reasoning, theorizing of abstract and not of real things, and so on.

The enhancement of metacognitive learning is not a methodological issue as richly established in the contemporary psychological research of self-regulated learning and education. Specific learning and teaching practices, such as learning programs, innovative structures and organization of specific studies in single courses, teaching methods (lectures, instruction, evaluation of learning outcomes, etc.) as accomplished by rigid technologies, do not invigorate or enhance the students' metacognitive problem-solving behaviors because technologies do not bring the constrained social life as the original individual real template for metacognitive learning. Specific methods in teaching coming out as normative practices maintain these idealistic and initial dualist instructional and scientifically reasoned endeavors. When a student's problem-solving behavioral dispositions emerge as deficient in the social life, specific teaching methodologies might not evolve in-

to rich educational free-floating learning environments; the fact becomes richly affirmed also in contemporary educational research. Metacognitive learning, as a problem-solving behavior in an individual rhythmic and constrained life, is neither an issue that can be comprehended through various theories or ideologies, nor it is an observable form or a practical program that might be directly constructed and successfully implemented in daily practice and living. These dualist approaches into teaching practice lapse into epistemic ventures within a closed monovalent social world contrary to the real world that is open.

In his first research venture to do psychological research of the feasibility and workability of teaching practice in psychology, the scientist-practitioner encountered a problem on how, via taking backstage support and guidance from self-regulation and self-regulated learning research, to move into behavioral realms that are the broad psychological perspective in CBT considerations and elaborations. The practitioner encountered a problem regarding empirical psychological research that manifested in his difficulties to eschew theoretic dualist positions that might come up in the psychologies of self-regulation. The practitioner also became familiar with the dualist theory–practice problem in psychologies of self-regulation and many researchers on self-regulation have noted at least implicitly the flawed theory–method driven approach in improvement of student self-regulated learning. For example, contrary to the reified conception on self-regulation as a set of specific operational skills, and the search for optimal teaching methods, Karoly (1993) takes a more dispositional approach (broadly consistent with dialectical critical realist philosophy) on human self-regulation:

> Self-regulation refers to those processes, internal and/or transactional, that enable an individual to guide his/her goal-directed activities over time and across changing circumstances (contexts). Regulation implies modulation of thought, affect, behavior, or attention via deliberate or automated use of specific mechanisms and supportive metaskills. The processes of self-regulation are initiated, when routine activity is impeded or when goal-directedness is otherwise made salient, e.g. the appearance of a challenge, the failure of habitual action patterns, etc. Self-regulation may be said to encompass up to five interrelated and iterative component phases: 1. goal selection, 2. goal cognition, 3. directional maintenance, 4. directional change or reprioritization and 5. goal termination. (ibid., p. 25)

This rich definition serves as the introductory stance to this research and delineates both the social and psychological (as well as material) realms of human self-regulated behaviors. However, restriction of this theoretical conception of self-regulation to the management of specific contradictory situational tasks could collapse into a limited notion of formal problem solving, which is the initial and implicitly taken stance in problem-solving psychologies (D'Zurilla, 1990). The formal position is inconsistent with mindfulness behavior. Langer's (1989) conceptualizations give a broad idea of human behavior which is consistent with Bhaskar's (1993) conceptions of open totality in the ontological realm as the domain of human meta-problem solving in all daily rhythmic and in all con-

strained ontological things. That is why it is crucial to revise or rather to devise psychological approaches and theories to real practice by starting the practitioner's reflections of the social transformative practice directly and to do psychological research of the students' daily rhythmics and ask how limited, unintentional or intentional learning might take place in their learning behaviors. This is the purpose of this research work in the first research project that paves the way toward absolute departure from the theoretical notions on self-regulation without loss of these rich psychological perspectives and means, but instead accounts for each student's functional and impaired learning behaviors by revising the original psychological perspectives on human control and on-task or goal-oriented behavioral activities in a practitioner's assessment position.

2.7.2 Learning scaffolds for an initiation of self-regulated and metacognitive learning

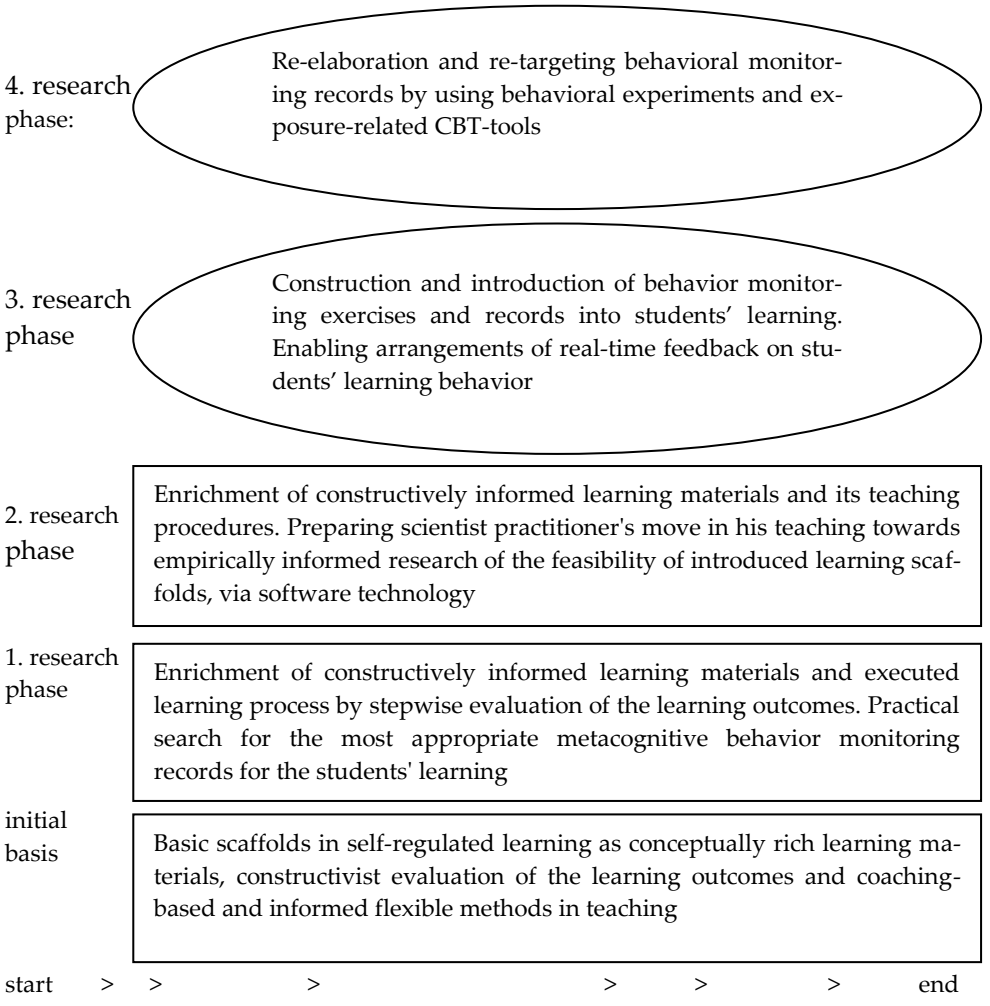
The aim in teaching psychology of human nature and behavior is to create a practical exploratory project of design and application of cognitive behavioral teaching and psychotherapeutic treatment methods to enhance a student's monitoring of her behavior. In pedagogy, the issue of establishment of appropriate learning environments is addressed, but in this project it was deepened and tailored via the importation of CBT treatment methods to a student's monitoring of her learning. If learning increases in the realm of mindfulness, this self-regulated behavior also manifests in effective self-regulated learning activities in a student's daily life. Practical programs to be implemented (e.g. virtualia, psychoeducative programs and teaching methods – real-time feedback) have been applied intensively in this practical teaching and incorporated in the students' self-regulated learning processes consistent with the position of Simpson et al. (1997) who presented a detailed account, primarily in their five program delivery models, of assisting academic learning. Thus this practical program of effective treatments, the teaching methods and scaffolds in their dynamic execution are not instrumentalist, rigid or instructional. The implementation is initially coaching and reciprocal teaching (Simpson et al., 1997) for fostering students' behavioral learning strategies (p. 73).

In classroom-teaching discourses the coaching of a student's real recent learning behaviors and life counseling was guided by the practitioner's assessment of the students' learning behaviors and in their residing nodal points to do learning in individual daily social life. The practitioner's assessment of a student's learning behavior emerged from these teaching and learning practices, and the assessment was incrementally enriched by the practitioner's CBT psychotherapeutic tools in treating clients with behavioral problems and anxiety disorders. Coaching of the students in their learning behaviors allowed the practitioner to research the open social world. The practitioner's educational task was not to change the students' abilities or other individual features in line with traditional empiricist approaches. Teaching through coaching is only executable if the practitioner does not primarily focus on the most appropriate teaching methods or on their application but through collaborative and confrontational discourses to maintain the teaching focus on a student's learning behaviors in the classroom and at home. Classroom coaching of the students began directly from their real individual shortcomings and total failure to do preparatory work on learning issues for the next classroom session.

Figure 2 presents a description of all the learning scaffolds constructed in this teaching practice. The first research project and the constructed and implemented teaching scaf-

folds are described on page 87, and from there this scaffolding progresses in the next three studies, as was practically possible.

Figure 2. Stepwise – scientist practitioner's psychological research and teaching



2.8 Intensive psychological research for scaffolding a student's self-regulated daily learning

2.8.1 Mindfulness psychology as a basis for an invigoration of the students' self-regulated distance learning

Contemporary research in enhancement of academic self-regulated learning frequently focuses on enhancing students' classroom learning, as can be seen in a great number of books on self-regulated learning psychologies (Hacker et al., 1998a; Boekaerts et al., 2000; Schunk & Zimmerman, 1998; etc.) As delineated later on in this report, the problem of enhancing self-regulated learning at home, as a daily behavioral management, has been a

neglected issue, although it has been noted as a pivotal challenge in self-regulated educational research (Schunk & Zimmerman, 1998). This research seeks to bridge the gap between homework and classroom learning as individual self-regulated daily behaviors in the students' studies, in order to merge the students' daily living behaviors and learning behaviors with individual metacognitive problem-solving behaviors within daily rhythmics. Dualism between specific learning activity processes and other daily activities is not reflective intentional learning, in fact, individual self-regulated learning by doing in daily life is dominant and it primarily determines a student's self-regulated classroom learning. Therefore, the practitioner needs to deploy and implement new monitoring methods for the students' daily learning, which requires a broad conceptualization of daily individual behaviors where students' specific learning activities have their place. Mindfulness psychology serves as an appropriate template because it directly informs the invention and implementation of the imported CBT-behavior monitoring records of one's daily rhythmics.

This research project departs from the enhancement of self-regulated learning in classroom settings only; this learning is not individual daily learning under one's daily constrained rhythmics. Classroom learning in large student groups stays restricted to learning within a closed social system or totality; it directly reinforces a student's learning by the memorizing and recalling of theories and concepts; it offers no incentives to a student to learn about her daily behavioral management in her contextual constrained social life. The mindfulness psychological approach to an individual's daily learning behaviors through behavior-monitoring recording techniques allows the avoidance of instrumentalist, empirically informed theoretic stances to individual learning. Specifically, theory-informed techniques and instructive procedures do not produce the required impact on the improvement of metacognitive problem solving as mindfulness spontaneous and intentional human activity in individual social life. For example, instructive protocols to encourage a student's self-monitoring (Prater & Hogan, 1992) produce no significant positive effects, as seen later in the first research project. These classroom teaching and learning instructions do not invigorate a student's home studying at least not under curriculum-based learning programs where learning objectives are laid down under specific practical and/or scientific-based values and interests. Mindfulness behavior as metacognitive learning is not limited to or enhanced in classroom settings alone. As Langer (1989) states, mindfulness itself is the behavior of openness to all things in individual behavior.

The reason for the exclusion of a student's home studies or distance learning (individual homework as it is conceived in the CBT-practical stance) in the empirical attempts to enhance students self-regulated learning is generally the same: the lack of appropriate teaching tools for supporting students' awareness of what she in her daily rhythmic reality is doing while studying at home. The main problem is that general teaching and learning polices with their traditional conceptions of interactive learning ideals have not been able to use internet tools effectively for both the teacher's following a student's learning activities at home, and his feedback on each student's actual learning. The teacher's attempts to construe and implement SMART Environments for support of monitoring, reflection and revision (Vye et al., 1998) were hindered in the sense that self-regulated behavior was the same as self-regulated learning. Classroom teaching projects, with their fragmented specific interventions, fail in initiating a student's self-regulated daily learning, if learning is not restricted to abstract norms and theories. Methods in classroom might be unable to tailor teaching interventions for a student's real learning behavior at home in order to support the development of her behavioral competencies and behavior-

al problem-solving dispositions. Similarly, contemporary psychology as a contextual issue is neglected by psychology studies, although this is essential in nursing practice: psychology studies of human nature lapse into theories. The students with insufficient reflective skills might not be able to divest these epistemologies and conceptions and their reflection remains impaired and limited, causing them emotional stress.

Many researchers of self-regulation and education, for example Brown and Campione (1996), see social contexts as crucial and basic learning realms and scaffolds in enhancing self-regulated learning. They attempted to cultivate communities for innovative learning but restricted learning to classroom through a pursuit of only the most feasible supportive methods in development of students' classroom learning, and therefore they seemed to fail in their rigid instructive stance which does not permit either coaching or tailored collaborative teacher's supervision of a student's real learning behaviors. The researchers initially focused on a specific activity and its behavioral moment or pattern to be directly addressed, or on a certain general and theoretic task to be learned as a universal norm and as an activity procedure or both (learning match or literary expression, text comprehension, etc.). This research in its initial basic stance excludes learning about human nature as informed by contemporary metacognitive psychologies, because 'human' and 'behavior' has been taken as a theory or general conceptualization of individual's own living conditions. There are no guarantees that a student would not escape real things as behavioral determinants in her perceptions, interpretations and evaluations. There is a real possibility that a student reflects only on her abstract thoughts and fragmented emotions while performing learning activities in her tensed daily life. In other words, students in their self-monitoring might remain in their limited reflection, managing only their current intrinsic load without monitoring of and reflecting on their learning. The students, whose self-regulative skills are underdeveloped and even the students with better developed self-regulation skills, fall into this surface learning under stressful living and surface learning circumstances. Surface learning is learning concepts and norms, if learning at all, it is not a set of individually and strategically managed learning activities. This learning occurs especially when teaching practices are based on lectures and presentations of a variety of concurrent urgent teaching topics, such as social education in nursing strives to give general acclimatizing knowledge about everyday nursing practice.

Here the students' monitoring, such as attention, interpretation, evaluation and meta-evaluation as spontaneous mindfulness activities, fails. Students in their learning and daily living might behave mindlessly (Langer's psychological concept, 1989) while reflecting on their despairing and despaired moods. The students' cognitive problem solving might be insufficient, cautious and disrupted, which could lead to procrastination. A student's need for conceptualized knowledge, as viewpoints and other theoretical tools for spontaneous reflection of contextual individual behaviors due to a dualist theory–practice learning template, does not become addressed by a student's surface learning activities, as required in metacognitive learning. Theoretical knowledge remains separate from a student's contextual problem solving; there is no progress towards reflective thinking and its spontaneous and robust monitoring of individual real things. In critical philosophical terms, reflection of ontological things as multilayered and deep is abolished as the real template in individual being and doing, and individual reflection limits itself to epistemological things, fragmented concepts and actual daily happenstances.

In this paper the main procedural research approach of inventing and implementing the workable scaffolds in teaching psychology is demonstrated as a time series program. Thus it will become clear to the reader that every emancipatory step in enhancing a stu-

dent's deep or reflective learning can be obstructed and abolished by the students themselves as well as by the administration and teacher–teacher discourses. That is the reason for the careful planning of all scaffolding steps and for numerous other provisional and divergent options to be excluded in reaching for adequate dialectical arguments for the preferred positive arrangements and outcomes of the implemented scaffolding.

In this research report, the basic issue is to delineate the stepwise approach in the introduction of the most appropriate tools for teaching procedures and its specific scaffolds in the enhancement of a student's behavior monitoring and her reflective problem solving. Here, the gradually intensified specific implementations for monitoring methods are practically feasible as the only option for nursing students because implementations must be executed without hampering a student's ordinary learning. The pre- and post-test setting for an empirical research is optimal for the practitioner, without any arrangements for selection of the students or recruitment of them into specific treatment programs; a student learning psychological studies can be conceived as being in an environment similar to her everyday living and learning in real daily contexts. Hence, learning is initially learning in the ontological world, not of epistemological things, 'this baby (that is the real ontological world) may be thrown out with the water' in self-regulated learning psychologies and studies. This is a strong initial argument for critical realism as a divergent research approach, which is contrary to empiricist scientific research studies (see, for example, a summary of issues to be considered in Bhaskar 1993, pp. 3–4). This philosophy delineates how human reflection might, if not lapsing into actualist norms and into its TINA formations, be referentially detached in surpassing subject–object dualism as the real ontological state of the world. This is the approach in a student's self-regulated learning and in all behavior, as her real behavior, and her subjective dispositions as they exist (for conception of dispositional realism, see Bhaskar, 2000, pp. 27–32).

In addition, the practitioner's gradual enrichment of teaching and learning scaffolds in the nursing studies within the four-year time period provided a research setting for an empirical research on the feasibility of invented specific teaching and learning scaffolds in teaching of psychology. Table 1 is a presentation of the general structure of the educa-

Table 1. The outline of the nursing students' learning program in introductory nursing studies, autumn 2004 learning credits

Ethics and values in nursing	2
Computer technology	1
Sociology	1
Social policy	1
General science of health	1
Management in rehabilitation of social and health services	1
Psychology and developmental psychology	2
Anatomy, physiology and pathology (total of 3 points)	1
Practical skills in nursing	4
Diagnostic supportive services / total of 4 points1	
- Microbiology	1
Finnish language and communication	2
Knowledge acquisition and learning skills	0.5
Optional elective studies	2
Total	19.5

tional program of basic studies in nursing from where the scaffolding gradually proceeded in this research. This program remained almost the same throughout the four-year research. Although the general organizational values in education changed gradually towards more constructivist ones they had little impact on: the actual teaching and learning practices, the evaluation of the learning outcomes, the basic teaching methods (lectures and distance learning) and their concurrent emotionally laden teaching discourses, and the managerial evaluative objectives and methods. The only exception was basic studies in sociological issues, where the teacher was the same person, and it enabled the execution of the general self-regulated teaching template, similar to the psychology studies.

This structural stability in the educational program and in introductory nursing studies provides a promising setting for the practitioner-teacher's practical work in the open social totality of education. All students (with one or two exceptions) in every new teaching group were novices in their self-regulated learning skills and behaviors and they demonstrated the same vast discrepancies in learning skills and competencies. In addition, the general educational structure and thus the management of teaching were stable with respect to all realms recently deployed in initiating young students' metacognitive academic learning. All interventions, aspiring to self-regulated learning, remained as a specific imported single teaching method, general procedure, stable normative theory, no matter how coherent or fragmented. The tension between these two social educational practices – instructive teaching with its momentary intuitive discourses and teaching by scaffolding student's individual learning – remained strong but only latently so, because general teaching had a firm managerial basis in the instructive teaching and lectures, and in the use of software technologies.

It is difficult to enhance the students' self-regulated learning from a position of single curriculum-based teaching. There was no general administration support available and at the start of their studies the students mostly expressed a preference to learn theoretical concepts and a tendency to understand them directly by noticing. This learning is surface learning, which students mainly see, or at least tacitly appraise, as the only possible and effective means to gain the necessary knowledge and skills for study and nursing. Of course, the students' main motivational basis in their learning was extrinsic motivation, to receive direct instruction regarding what is required to learn and what are the preferred outcomes of that learning, as well as exercising expectations within a subjective right to receive the immediately effective teaching support for individual learning. The students saw teaching as an essential part of their studies and they were not able to take much responsibility for their learning or to re-question their performed real learning behaviors. The students' initial tacit and expressed hopes for teaching were not realized frequently in their psychology studies in the self-regulated scaffolding exercises. By looking at this research stance from the apparently dominant theoretical or methodological-deduced educational perspectives, the critical realist argument about the options and practices to enhance metacognitive learning becomes diffuse and illogical. The same thought might occur to the reader if she has a limited comprehension of the educational social life as deeply constrained, multilayered and transformative.

2.8.2 Tailored records in a student's behavior monitoring

In the introduction of flexible tailored records of a student's behavior monitoring the teacher is required to attain a deeper conceptualization, at least with regard to classifying the students into different subgroups, during the assessment of student learning beha-

viors and individual competencies. There is no previous psychological research available at that deeper psychological level. The extensive preliminary survey classified students only theoretically and descriptively and not according to their real learning behaviors (Puttonen (2002), an unpublished report). First, it is necessary to conduct a preliminary empirical research on the students' initial behavioral competencies as their real behavior monitoring. Behavior monitoring is the nodal point in self-monitoring and self-reflection. As delineated later in the report, the behavior monitoring stance is a confused and restricted conception in contemporary psychological literature. The deployed mindfulness stance frequently diverges from monitoring individual symptomatic and problematic behavior to monitoring individual daily rhythmics The most commonly deployed position is more restricted, where only a specific aspect in behavior monitoring remains as the objective in intrinsic self-reflection for individual monitoring. There might not be much point to focus only on the theoretic delineations of restricted reflection or its individual identification that does not address behavior monitoring directly. There a student's broader reflection and metacognitive monitoring are impaired due to her deficient behavioral skills and competencies and due to her contextual stress. The improvement and enhancement of individual real reflective and reflexive behavior are unlikely unless the deep and limited initial core of self-reflection is addressed by an individual's behavior monitoring in her daily rhythmic.

Many theorists in dual categorizations of human control discuss this limited self-reflection and its specific monitoring of individual and emotionally inferred problems and deficits. It is described in cognitive behavioral conceptualizations as self-reflecting on despairing moods and reflecting on task performance (Papageorgiou & Wells, 1999; 2004). During this research in behavioral monitoring and its enhancement, this dual categorization introduces the psychology of mindfulness and metacognitions, which have been elucidated also as dualist categorizations according to Wells' (1995) two-stage theory of worry (worry and meta worry).

According to the first research project's results, this impaired metacognitive monitoring of individual daily behavior seems to exist in line with the practitioner's preassessment of student learning behaviors. That is why there is the need for a broader and more accurate basis for understanding a student's behavior in psychological terms by deepening the understanding of a student's self-regulated learning skills deficiencies. Self-regulated learning is demanding and, like Zimmerman (1998) states, it is an intrinsic motivational control competency: "Skilful self-regulators are able to concentrate their attention on their learning performance whereas naïve self-regulators are easily distracted by diversion or competing thoughts, such as ruminations about errors" (ibid., p. 7). Zimmerman stresses that, "naive self-regulators are drawn to their emotional states or the surrounding conditions whereas knowledgeable self-regulators are better able to remain focused on their learning performance" (ibid., p. 8). The starting point for an empirical psychological research on behavioral monitoring is to establish an empirical basis for the students' learning skills and competencies, and to design monitoring tools and methods aimed at the enhancement of the students' self-regulated learning.

This research project gradually emerged within the apparent manifest confines of instructive teaching educational practices. Under these confines it is a challenging task for the practitioner to have a deeper understanding of the students' learning behaviors when all of a practitioners' focus is restricted to actual teaching practices not to the students' real learning behaviors. The constrained teaching and learning environment pays no

heed to an emancipatory-oriented psychological enquiry rather, at least latently, it tends to eschew this kind of teaching and its practical research. In that educational practice a practitioner's attempts to shift from abstract theoretical conceptualizations to the addressing of individual behavioral skills and then to behavioral competencies is scarce or often impossible to conduct.

As was already established, behavior monitoring at its basic non-dual core into scaffolding a student's learning behavior is not based on psychological theories, it has its critical realist roots as was outlined. A critical realist approach to human behavior and every individual's activities in monitoring one's behaviors directly addresses an individual's real behavioral issues because the evaluation and meta-evaluation (if it is possible for the individual at all) of one's recent behavior via means of introduced behavior monitoring goes beyond individual perceptions, interpretations. At first it was not obvious to the practitioner that usable tools for the deployment and invigoration of the students' behavior monitoring in teaching large student groups could be found. It was already determined empirically that the students had varying behavioral problem-solving skills and severe limitations in self-regulated learning (as described in preliminary surveys of student learning skills, learning preferences, behavioral and stress symptoms, etc.; Puttonen, 2002). More commonly, the students in their dominant surface learning behaviors perceived the learning objectives in psychology for formal theoretic knowledge but they did not directly grasp the idea for their individual and concurrent validation of their personal daily (learning) behavior in the specifically introduced modality-based behavior monitoring reframe. The students were not accustomed to or capable of concentrating mindfully on their concurrent and recent contextual learning behaviors. Rather they evidently could perceive this objective as irrelevant and even interfering with their initial learning in their manifest expectations for having accurate, concrete (normatively relevant) theoretical psychological data applicable to their nursing practice.

In the educational institution the same focus on actual, momentary things and their normative management was apparent in all teaching and its management. The teachers either perceived or overtly described their teaching as a question of selection and implementation of suitable teaching methods for an initiation of students' learning in the practitioner-teachers' prefigured learning objectives. In everyday educational practice the students frequently expressed hopes of receiving the most appropriate teaching and its clear-cut management. The students indicated hopes to gain the most accurate instruction and extrinsic motivation from the teaching that would bring incentives to their learning activities, thus the students manifested their intrinsic resistance to ponderings about the current teaching and divergent learning practices. Because such pondering would take its toll on abstract theorizing, as it would for students with underdeveloped metacognitive problem-solving skills, the students avoided it when they were persistently stuck with their subjective experiences.

In the enhancement of self-regulated and metacognitive learning there was a need for social changes in all teaching practices and discourses, but the requirement was not manifest because the students generally expected to receive normative data and practical skills for nursing and they evidently also had expectations for non-collaborative discourses in teaching. They focused on normative and general instruction of the required normative learning outcomes and they were not orientated to solicit advice for their real learning. They saw the teacher's feedback as normative guidance, despite the fact that it was provided only as a suggestion worth taking into account by the students. Hence a

grounded goal in teaching was not to support the students' validation of and focus on their learning behaviors contextually by their behavior monitoring activities. Individual behavior monitoring is the key psychological behavioral realm that is the core and behavioral realm in individual self-regulated behaviors. Instructions to students and implementations of rich or specific teaching methods leave this deep behavioral core untouched and the methods do not support the enhancement of a student's self-regulated learning as required in academic studies. The teacher's instructive stance in ordinary teaching is useless because it only maintains a student's focus on learning of theories not on her real behaviors. The practitioner's initial understanding was that the students' spontaneous metacognitive ability for self-monitoring and evaluation of their learning was significantly either impaired or became entirely excluded in the instructive dualist teacher–student communicative practices as the critical realist position to the philosophical problem of inductive reasoning demonstrates (see for example, Bhaskar 1978, pp. 215–228).

The applied self-monitoring approach as a constructive and flexible teaching procedure is consistent with the educative aim of psychology studies on re-contextualized human problem solving. It is rooted in Flavell's (1979) introduction to metacognitive monitoring, and in Sternberg's (1997; 2000) elaborated conception of personal styles and dispositions. Prior to that, its metacognitive mindfulness approach indicates a broad notion of human metacognitions according to Schön's (1983) summary of reflective working.

While encouraging a student's recourse to examining her behaviors, which is the core of psychological knowledge acquirement and application, the aim is also to deepen and broaden a student's understanding of all individual behaviors. To enhance the students' deep and strategic learning, and to encourage them to take responsibility for their learning and its outcomes, the practitioner strives for gradual elimination of the surface learning practice and dualist teaching discourses in the search for optimal scaffolds to encounter the deep social structures which sustain these practices. The integration of the practical task of empirical research and the adequacy of the self-recording technique in teaching psychology allows this critical realist approach to measure behavioral competencies as psychological dispositions at the level of a student's real behaviors (internal and external behavioral actions), where the task in psychological studies is to support the student's development in her life and profession.

3. THE FIRST EMPIRICAL RESEARCH PROJECT: DESCRIPTION OF THE STUDENTS' DIVERGENT BEHAVIOR MONITORING SKILLS

A critical realist stance and the practitioner's position on the enhancement of metacognitive learning means here that the practitioner investigates whether the students in their contextual behaviors and in their somewhat explicit descriptions and explanations grasp smooth psychological issues in their perspective taking, appraisals and ascriptions of their and others' behaviors during their studies in psychology. More generally, here psychological studies entail the general educational objective to support a student's individual and vocational development and work, such as how the students revise, deepen

and enrich their psychological knowledge and manage their daily reflective problem-solving behaviors.

From a critical realist perspective, individual contextual behavior is the learning objective before all which directly brings into the research objective the issue of the students' behavior monitoring where the students' reflective capacities and skills emerge: how the students monitor their behavior and what frames their appraisals, psychological descriptions and explanations they introduce and use in their behavioral monitoring. In critical realist terms behavior monitoring is an individual behavioral issue of rich individual reflections either as dual or non-dual realms of and on an individual's daily management. Non-dual reflections connote smooth mindfulness behaviors or spontaneity in performed right actions, as Bhaskar (1993) has elucidated in non-dual resolution of the dualism between thoughts and overt actions.

The practitioner's tasks in the empirical investigation of the students' learning outcomes from their studies in psychology were set from the official baseline of the psychology course, but became enriched via non-dual psychological perspectives. From that real practical basis starts the practitioner's search for the most optimal work approach to make inventions in the psychological course so that teaching outcomes would be more feasible in the non-dual or reflective learning and teaching objectives of these vocational studies on nursing.

3.1 Preliminary description of the students' shortcomings in self-regulated learning

First, the research objective is described in lay sociological and psychological terms from the practitioner's observational basis of the students' learning behaviors in the teaching practice in order to demonstrate teaching confines between instructive and collaborative teaching. The practitioner's observational basis for descriptions of the students' learning behaviors by his dialectical reasoning and commenting emerges as fragmented, rather broad and with minimal conceptualizations of the arisen diverse behavioral phenomena. From the critical realist perspective, in order not to lapse into linguistic fallacy and setting primacy on observation to real social contexts, the description shows how instructive and collaborative teaching are entirely separate teaching approaches in meeting the students' learning objectives, and how the latter is the only educational objective which would support the students' self-regulated learning in their daily life.

The practitioner attained the following general description for his assessment of students' learning behaviors in their daily life during his years of teaching basic psychology of human nature and problem solving in nursing studies. Worth noticing is that all special psychological issues stay diverse and at a superficial level of the real teaching transformative practice which is not revisable or solvable through premature theoretical psychological ponderings.

The students' behavioral skills and behavioral learning competencies varied significantly and their skills were underdeveloped in the realm of self-regulated learning. For example, the students were not generally able to complete their homework without the teacher's normative exact instructions for the preferred learning outcomes and for the required technical learning steps. The students frequently were not able to concentrate on their learning activities required for comprehension of rich psychological texts. The same learning difficulties and shortcomings remained during the entire learning course. The

students were unable to construct any stepwise executable plans for learning on a daily basis. Thus their learning was fragmented and focused only on the most urgent task they faced in other courses. The students appeared to suffer from constant and significant emotional load manifesting in their lack to have motivation or strategies for their learning.

The students' mutual discourses as well as discourses in classroom teaching seemed not to provide any significant support for individual concentration and engagement on deep learning activities. The students frequently were unable to construct, demonstrate or indicate any subjective strategic learning plan as was specially required for deep learning in order to improve teacher's evaluations of their learning outcomes. In the classroom settings the students experienced constant disruptions in their attention and concentration on learning issues at hand. Their thoughts seemed to diverge to despaired individual reflections or to the use of thought suppression strategies that manifested for example as exceptional thought patterns. These disruptions in and obstacles for concentration during lessons were similar to thought suppression, the students passive following of the teaching discourse was not enough for their understanding and conceptualizing of the learning issues. The teacher's effortful activities in dynamic coaching, lectures and instructions and the use of teamwork during lessons frequently appeared not to have a long lasting effect on the students' real learning behaviors.

The students generally understood that they were obliged to study at home in order to have superficial conceptual knowledge in psychology, or to advance beyond formalistic conceptions and norms, or to move on with their innovative learning activities, however, their crucial home studies stayed weak and were restricted to strictly put learning objectives. The same situation occurred with the classroom teaching and the apparently unsatisfactory situation continued throughout the entire course with only some exceptions. The students frequently expressed their dissatisfaction with the flexible and innovative teaching methods as well as disagreements with the teacher's objectives to practically define and execute the general educational objectives in the psychology course that surely required activity-scheduling skills in their management of all daily learning and other tasks. The students' management of their daily life and all studies seemed to be an insurmountable challenge for most of the students. The students demonstrated low motivation to embark on their learning; their motivational difficulties caused constant disruptions in classroom teaching and the students' behavioral patterns in participating with the teaching discourses took a toll on the instructive and illustrative teaching discourse albeit this was not the teacher's original intention. Instructive or otherwise, abstract learning objectives seemed to reinforce a student's limited self-reflection and maintain her initial preference to learn in the maintenance of theory practice dualism which in this psychology course meant to have theoretical knowledge to which they seemed to have a reluctant inherent learning position. Of course this limited emotional reflection manifested as their decreased learning activities as well as their functional management of their intrinsic motivation to their study by doing.

The students frequently seemed to experience acute challenges at home in their daily activity management, but with additional formal instruction in other introductory studies (educational surface practices) they were able to move on with all their ordinary studies. The apparent and extreme stability of ordinary teaching practices did not permit coaching for enhancement of the students' basic self-regulated learning activities, such as guiding them to strategic studying, text comprehension and reflective writing. For these specific formal learning objectives there were arranged specific learning courses, such as language and other intradisciplinary courses, so that the students would be capable to

work in all pivotal work tasks required in lay nursing practice. The general instructive discourse in practice–theory dualism in classroom teaching in the students' studies largely impaired the practitioner's utilization of coaching, because instruction encouraged the students to focus on the general issues.

In social psychological terms this situation in teaching large student groups was diffuse. There appeared to be general ethical norms for nursing practice and education that valued students' abstinence from making contextually arisen critical comments or from re-questioning the concurrent practices through contradictory arguments. Of course at the beginning of their basic studies in nursing the students experienced overt and observable difficulties in initiating and maintaining strategically managed communicative discourses at a personal level. Their discourses of sharing emotional experiences were more dominant or at least their classmates' assertions were often taken as emotionally significant but not targeted at the management of general teaching and learning practices. Thus the students' peer relations seemed to manifest themselves as fragmented, broken and emotionally loaded discourses. By contrast, the students tended to avoid dialogic personal arguments and opinions or, if disagreements arose, the arguments were mainly general and diffuse without an individual constructivist stance towards individual problem solving in the concurrent management of these teaching discourses.

Through the practitioner's observations and meta-evaluations the students' dialogic communication was disruptive and broken and became restricted to parsimonious individual or general issues. It was conceivable that these conditions in discourses tacitly initiated an extensive emotional load for many students, perhaps also escalating into new flawed generalizations apparently by the students' inductive reasoning of their learning difficulties and of the most ideal teaching practices. The students seemed to put extra effort into managing their emotions prior to engaging in further learning activities, a condition which would provide ample opportunities for dialogic communication if the formal learning objectives had been more modest. The students' dialogic communication was evidently insufficient for encountering social real things and social relations as the maintenance realm for their behaviors. Therefore there were no direct possibilities for teamwork on learning issues under the students' weak activity management and under their decreased focus on deep learning and psychological issues. The students' lack of self-regulation skills did not provide means for the teacher's workable supervision of a student's real learning behaviors. Learning about human nature, similar to learning of human contextual problem solving, demands constant restructuring and subjective conceptualization of human matters. Most often this educational objective remained as an unrealized and idealized hope for the students. Instructive and descriptive illustrations and examples that emerged during the teaching about human nature were easily comprehended by the students as general and executable or false norms on how to do nursing in real nursing practice.

The students expressed openly their unanimous interest in having exact concepts prior to their own understanding. They tacitly persisted with accurate formal explanation of the ways to manage actual daily problems. The similar preference to exact normative rules to do work or studies was manifest all along the course, the students expected to have rules and guides on how to manage clients' anger, depression and other daily behavioral patterns. Hence the students were not accustomed to direct communication about the feasible teaching issues and their preferences for teaching methods; rather they expressed excessive expectations for gaining formal knowledge about human nature. In

other words, the students in their shared and mutually reinforced expectations perceived metacognitive psychology of human nature as extremely difficult, abstract, academic and discrete for a real nursing practice. The students appeared to indulge in excessive emotional reasoning while managing their stress; this communicative situation in daily teaching preserved the common approach to instructive teaching. Furthermore, and more generally, this teaching practice provided access for the learning of norms required in practical nursing.

Such an emotional reasoning appeared to escalate in all the students' mutual discourses to a level that compelled the teacher to maintain classroom order by unambiguous and formal presentational discourses on the learning issues. It was conceivable that the students perceived such teaching as tedious. They believed themselves to be under many additional learning expectations, such as to study also at home, for which they did not usually have sufficient time and energy.

Thus students' cognitive restructuring of the learning issues did not frequently take place in their real learning, as required in self-regulated learning. Of course, this makes daily teaching challenging for a teacher, whose only means are to concentrate on the classroom teaching, not on the students' real learning behaviors. In this project the teacher did not comply with the students' formalistic expectations. Instead of that he attempted to continue with innovative teaching interventions and additional scaffolding of learning materials (etc.) and with rich reflective teaching discourses. It meant that the teacher's teaching procedures and means clearly departed from the main teaching approach of the educational institution. This new approach was not encouraged by the educational administration.

Over recent years and in the ongoing practice in introductory psychology the teaching has gradually arrived at a self-regulated initiated path to scaffolding of the students' learning, not merely scaffolding of the teaching by specific instructive methods. The teaching became focused both on classroom and on distance learning and on a student's real learning habits at home. It meant difficulties for the teacher in the introduction of basic self-regulated teaching practices and educational programs because the dominant teaching administration did not provide the teacher with immediate incentives to continue this deviational approach for scaffolding. Instead the dominant learning practices in social and human behavioral issues and teaching practices to nursing conflicted with this novel self-regulated teaching of psychology. The teaching largely maintained the dominating teaching practice of learning of norms and theories. In the end, the formal application of teaching methods was under the service of the dominant educational courses to learn general idealist rules of human behaviors to be accounted for in nursing. Rich learning materials on modern-postmodern and constructivist psychological perspectives that were in need of being discussed and pondered in the next classroom teaching sessions were frequently ignored by the students. The students completed their home tasks superficially to meet the minimal requirements to pass a course by preparing just before the specific diagnostic exam took place. By that superficial learning of reiterating some general psychological concepts and by general definitions the students seemed to expect to gain good grades. Favoring direct recall and reiteration of the presented concepts in the practical management of nursing appeared to be the most common feature of the students' other learning programs and courses.

Of course there was a vast variety in the students' learning behaviors and its main patterns. But generally all the students throughout the course lacked initiative and subjective efforts to receive tailored advice and supervision from the teacher. Actually

some students with better-developed skills in task performance did not need advice or real-time feedback to maintain their strong initiative and evaluative stance in managing their learning activities. However, other students who lacked goal management skills did not understand this option as real or feasible at all. At least tacitly they expected to receive from the teacher formal instructions and immediate reward for noticing the object to be learned. These students rather expected to receive the same formal instructions applicable to all the students independent of each student's learning goals and subjective learning and problem-solving skills. The students with weak self-conceptions and quite stable or rigid metacognitive beliefs tried to get direct norms for the teacher's precise learning tasks for their learning endeavors. These students seemed to perceive the teacher's coaching and individually targeted suggestions and guidelines on how to learn as negative and discouraging feedback to their individual behaviors

3.2 Original inadequate implementations in theory- and method-driven scaffolding methods

This subsection describes the practitioner's pondering on how, via divergent contemporary research approaches in real teaching practice, to proceed to deeper psychological descriptions and hopefully later on to psychological explanations of the students' divergent and often weak learning behaviors. This pondering goes beyond dualist self-regulated conceptions to instructive teaching of psychology and if possible in real practice to move on to a strong collaborative trustworthy basis for teaching discourses.

3.2.1 Instructive teaching does not address individual realms in metacognitive contextual learning

A critical realist scientist-practitioner's stance in this teaching of psychology and its research suggests an avoidance of a direct preference to go on with general programmatic approaches for assisting academic student learning of which Simpson et al. (1997) gave an elaborated account. These main instructive teaching practices are favored historically and ideologically in nursing studies but they do not foster or enhance a student's metacognitive problem-solving competencies.

Formal methodological projects of various general consultative programs in the context of teaching a psychology course necessarily entail that these metacognitive psychologies are not the learning objectives. Curriculum-based teaching structures to a student's learning of formal learning issues do not enhance a student's metacognitive problem-solving competencies in academic learning including a general stress management training program as reported by de Jong and Emmelkamp (2000). This formal program to improve individual stress management without individually tailored programs for each student's needs does not improve a student's weak metacognitive skills and competencies. In this teaching practice the students frequently appeared not to understand or not to have a vocabulary to describe the ways they performed their learning and daily living at home. If they succeeded in this description in their overt expressions they appeared to attribute and ascribe their learning to the most suitable idealist teaching methods and learning materials and to their inherent gift of having the motivation to learn, which seemed to be scarce or lacking. Generally, according to the teacher's observations, they had insufficient conscious control over their on-task performance activities the core of which is individual metacognitive behavioral

management of one's contextual activities.

When maintaining a critical realist perspective and metacognitive behavioral realm and its 'out of the blue' problem-solving activity in the students' learning of psychology there is no recourse to teaching psychology via an application of more specific teaching methods, or via more illustrative presentations of learning issues or via sharpening of basic theoretical concepts on human behaviors. Although this teaching would initiate students' sensations and reinforce their emotional reasoning it does not encourage a student's metacognitive contextual behavior management as their metacognitively directed goal-oriented behaviors. Rather this emotivist reasoning is the basic impairment for individual reflection on the richness and contradictoriness of real internal and external things. That is why the employment of specific inductive-based approaches from values to facts, false inferences and generalizations, are inappropriate in this project. Contrary to Simpson et al.'s intentions for "focusing on cases or problems" (Simpson et al., 1997, pp. 74–76) here it is reasoned that a student's diffuse and formal thought patterns do not address her to metacognitively differentiate her flawed and valid thought generalizations for her revision of her behavioral problems at hand. Nor would the teacher's instructions to the students on how to manage one's thought patterns enforce or provide incentives to their innovative self-regulated learning when they demonstrate many specific weaknesses in their reflective learning skills. The students' expectations for receiving the teachers' precise instructions is a manifestation of the students' dysfunctional hopes and despaired emotions under their new living conditions and adulthood challenges. Instructive means, however adequate or flexible or tailored they are, provide no solution for initiation of the diverse students' self-regulated learning; the other solution is to be sought in this research project via behavior modality-based approaches.

The students' self-regulated learning was more manifestly insufficient in all specific learning domains, such as individual management of strategic learning styles, text comprehension, seeking advice for one's learning problems, personal participation in discourses during lessons, metacognitively-managed literary conceptualization and text writing. The requirement to learn rich learning materials in academic studies also as a preparatory study for the next classroom session remained unattainable for the students, with a few exceptions. Formal and scarce learning materials would not support a student in her individual searches and cognitive structuring on learning issues, if this would have been the practitioner's practical approach. Concisely presented learning materials would not provide incentives and templates for individual choices into cognitive restructuring or revising of her pre-existing mental representations on many psychological learning objectives and behavioral realms. For that purpose Wylie and McGuinness's (2004) attempt is more reasonable when they accomplished and organized rich learning materials for adult students; that has also been Bernstein's (2002) and Bernstein and Wert's (2004) invention in their online-based teaching of psychology. When students' initial and dominant problem-solving behavior is insufficient in text comprehension or when students lack meta comprehension (Otero, 1998) when encountering stress and demands on their overt behaviors they can lapse into worrying which could initiate their avoidance behaviors. Obviously this prevents or impairs their learning behaviors as self-regulated learning. The self-initiated emotional load seems to be a common phenomenon that occurs when reading psychological texts, as was empirically determined decades ago. According to Roemer and Borkovec's (1994) description of a reader's dysfunctional tendency to deal with emotional material it can initiate thought suppression and other

avoidant behaviors when reading emotionally laden texts. The authors performed research on its dysfunctional impact on a student's self-regulated learning and they determined that an individual's attempts to suppress anxious thoughts diminish text reading and text comprehension (ibid., p. 472).

It is arguable that strategic learning approaches, such as specific instructive learning programs for enhancement of self-regulated learning such as for example Butler (1998) implemented successfully, are not workable or effective here; they might be feasible in formal learning tasks such as maths or geography. Instructive teaching is too formal and leaves social constrained transformative life intact as the real template for a student's metacognitive learning. Instructive learning programs do not provide any initiatives for subjective progress in a great number of associative thinking operations about the real world for an initiation of a student's 'out of the blue' activities in striving for new psychological constructivist knowledge. The self-initiated behavioral mode in learning, as a non-instructive learning program and distinct from other formal studies on nursing (because of its formalist and empiricist conception of human behavior), is a precondition to a student having incentives to reach individual deeper and self-construed conceptualizations regarding the behavioral and vocational issues of nursing. Otherwise, learning would be limited to the learning of theories and its ideological norms that, from the critical realist perspective, are only the learning of theories and not of one's practice and such abstract theoretic knowledge could impair individual reflections.

3.2.2 Means of tailored recording in behavior monitoring to scaffold a student's learning

Other optional basic teaching strategies would be learner- or student-centered, or a project-based teaching strategy, such as strategy instruction and collaborative scrutiny of feasible learning strategies (Randi & Corno, 2000). That is the reason for the application of additional coaching and motivational interviewing as the basic teaching discourse in this educational project. But these strategies in their meager metacognitive stances on a student's learning level without viable relation to their real constrained social life and to their daily activities is not suitable for the students who continuously receive reinforcement for surface learning strategies and for obeying norms in instructive teaching. Therefore instructive teaching and dualist non-collaborative discourses in learning are not adequate educational practice in academic studies where values and demands of working life are dynamic and changing and require individual strengths in metacognitive and reflective problem solving.

Reflective learning, deep learning, or what is the deployed psychological conceptualization of an individual's intentional human actions in her open and constrained multilayered social life, emerges in the real multilayered transformative social practice, if occurring at all. In that transformative social practice, it might be possible to incorporate students' contextual real learning behaviors into their own scrutinizing via behavior-monitoring educational designs, if adequate CBT-informed practical means could be carried out through the monitoring designs.

Curriculum-based theoretic intradisciplinary studies are primarily confined to the philosophical notions of deterministic laws in the natural intransitive order and in the real understanding of social life that is continually transitive and transforming. But for the practitioner, as a means of alleviating dualist instructive teaching practices, CBT-informed behavior monitoring training as a students' learning template to learn about

human nature would provide real options. As seen in this research, via the four separate research projects, adequate scaffolds to teaching and learning in the students' real social constrained practice requires rich scaffolding of the students' divergent kinds of learning behaviors. The scaffolds also have to address contextual and contextualized philosophical ontological and epistemic notions of truth and well being (see Bhaskar, 1993, about concrete singularity and concrete universal and dialectical universalizability, p. 209). Rich scaffolding of a student's learning about human and contextualized nature would provide an incentive in the execution of her studies for her individual traversing between the whole and dialectically arranged learning templates. It is important to note that the professional field of nursing requires students with broad and even contradictory professional skills and competencies in specific disparate nursing practices. The rich scaffolding of the students' psychology studies before the research program was launched also verified their vast divergence in their psychological behavioral metacognitive competencies and skills as was already found out in the vast survey (Puttonen 2002: preliminary exploratory investigation of the student's stress symptoms, learning styles, knowledge conceptions, unpublished research report). Neither classroom teaching or practical training alone in practical nursing would initiate or enhance the required individual skills as has been found empirically in a great number of international self-regulated learning research programs and their theoretic elaborations (see, for example, Schauble & Glaser, 1996; Hacker et al., 1998a; Boekaerts et al., 2000).

Basic self-regulated learning skills frequently seemed to be lacking in students' daily behaviors and their self-monitoring and evaluation was disrupted and fluctuated spontaneously under emotional loads in subjective self-reflections, at least in classroom teaching. The confrontation of this educational obstacle requires the enrichment of self-regulated theoretical perspectives by relying on specific cognitive behavioral elaborations and treatment tools in stress and anxiety management. The behavioral pattern as a specific and restricted reflection is noted in Nolen-Hoeksema's (1987) discussion of rumination "as a certain mode of spontaneous and uncontrollable automatic thinking, negative and despaired emotions as its impetus" (ibid., pp. 259–260). In large teaching groups, a student's learning process as an on-task performance pattern suddenly collapses and this limitation in the chains of broken individual multijoined behavioral activities evidently increases her new despaired thinking. Metacognitive problem-solving skills are not likely to be sufficiently improved through one's tacit dualist returns to renewed concentration activities to learning issues at hand when the learning issues are largely broad and diverge from one's initial beliefs and metabeliefs.

In a student's weak metacognitive behavior management the practitioner's coaching appears to be a feasible strategy for the improvement of the student's self-regulated learning as for example Mooney et al. (2005) have affirmed. However, this strategy in teaching under a student's tacit dominant predisposition to attend and learn from lectures appeared to be ineffective without her preparatory home study for acquiring initial familiarity with classroom learning issues. Coaching does not necessarily initiate a student's self-regulated learning activities at home as was found to be the case among a large part of the students in this course during all its learning phases. Application of Simpson et al.'s (1997, p. 67) rather misleading description of a direct instructional model to the coaching of a student did not directly address her real behaviors in ordinary classroom teaching group settings while she concurrently received positive reinforcements to learn through passive attending and tacit ruminative and worrying activities. A teacher's

instruction or lectures basically do not allow coaching of one's daily behavioral activities. On the one hand, coaching as life counseling remains a diffuse teaching strategy because of its insufficient tailoring to encounter a student's tacit and contextually arisen ruminative behavioral patterns. In this teaching the students with active learning cannot be collaboratively encouraged without hampering the harmony required for smooth lecturing in order to satisfy the tacitly worrying students' expectations. On the other hand, the teacher's formal instruction, if applied, would provide discouragement to students with developed self-regulated learning skills in their own search for self-initiated reflective learning activities. The conclusion here is that the practitioner requires teaching means that go beyond coaching teaching discourses and the behavior monitoring approach seems to be the most promising tool for the invigoration of collaborative teaching and learning discourses.

3.3 New teaching templates for a student's self-regulated learning in psychology studies

The research report aims for basic scaffolding that has practical means to collaborative working in teaching and for an empirical research setting in order to discover the feasibility of the implemented scaffolds. The following delineates the grounding of the scaffolding in this phase and how it was developed gradually in order not to hamper the basic teaching practice or enhancement of the students' self-regulated learning.

3.3.1 Students' procrastination requires deeper psychological explanations

Here it is delineated how the practitioner's scaffolding of teaching in the students' psychology studies was tacitly and partly consciously transformed towards self-regulated education in the rich and flexible use of teaching methodologies for initiation of the students' self-regulated learning. The scaffolding also sets up a basic orientation in the teaching to support a student's strong subjective basis in her behavior management and a flexible use of teaching methods as required in behavior monitoring methodology to pave a practical way to a student's strong self-regulated learning. However, self-regulated teaching methods frequently remain relatively ineffective (as briefly delineated next) albeit they establish an advanced learning structure for a student who possesses basic problem solving and learning skills and behavioral competencies in their daily management.

A student's behavior monitoring, as broad in constrained individual behavioral tendencies and behavioral modalities as the practitioner's intention is here, has not been the main objective in contemporary self-regulated educational research. The practitioner-researcher's target in behavior monitoring has been mainly restricted to the enhancement of students' specific learning skills in different and pivotal learning domains, for example learning maths, languages, biology, geography and so on. Researchers have been more focused on developing specific instructions for enhancing students' monitoring of classroom learning activities (e.g. I stepwise problem-solving activities) in more detail (for example Hacker et al., 1998b). Some other researchers have tried to apply peer supervision (see, for example, Simpson et al., 1997, pp. 72–74), but they too are not useful in this project because of vast divergences in the students' basic learning skills and because of their weak basic dialogic communication skills and other crucial shortcomings in individual behavioral on-task performance competencies. However, all specific

methodological research projects are excluded here for practical reasons, of which for example Boekaerts et al. (2000) in their rich and elaborated handbook provide multiple outlines. With the current educational programs and dominant values and norms in the teaching administration they are not acceptable either by the administration or by the nursing students themselves. That is because the nursing students have entered only recently into nursing studies and they are concentrating on learning practical skills to nursing and they are not familiar with or keen on learning issues that are more comprehensive and not formal. They consider their most common surface learning patterns as optimal in current learning programs to which learning the official programs seem more dominantly to inform and guide.

These aforementioned researchers, and Schunk and Zimmerman (1998) too, have sought and constructed theoretical models about the basic psychological mechanisms of self-regulated processes and functions. Here, it is gradually outlined that these conceptual approaches to developing education can be beneficial for students with better developed basic self-regulated learning skills but in theory-informed positions to improve teaching they are not feasible in fostering strong metacognitive reflection in students' learning when the students have vastly divergent learning competencies. The students' actual learning behaviors under these formal, instructive or highly emotivist educational discourses remain disrupted without individual trustworthy collaboration. Under these superficial emotionally driven discourses a student's task behavioral orientation and control frequently lapses into her state orientation, as Kuhl (1984; 1985) outlined decades ago. It indicates weak action orientation in the students' real behavior management.

Another explanation for the students' extreme procrastination and weak self-regulated learning activities would be that in these teaching practices their surface learning has become either strongly or immediately reinforced or both. Thus the students cannot become critically aware of other deeper social dynamics and learning realms in teaching discourses. This would be self-evident when the vocational and largely normative studies to nursing stand for primary normative educational courses and learning objectives from the very beginning of the studies. Oriented to the management of 'lay practice' this schooling positively values directly individual overt activities and truthfully taken assertions as primary, fully accounted objectives to professional work and to its studying. Thus this empiricist educational practice serves as an invitational basis for the students' recourse to high, ideal values to do and to learn nursing practice. This direct objective as an ideal value to nursing in the absence of professional depth in sociological and psychological knowledge breaks down or excludes metacognitive problem solving in a student's behaviors. It can be argued that these weak collaborative or non-collaborative but instructive teaching discourses in themselves (formalistic assessment of a student's theoretical knowledge, many actualist norms to management of constant daily happenstances or natural scientific norms, etc.) might have a strong dysfunctional impact on nursing education while it excludes the social transformative life as ontologically existing in the heart of the educational discourses. However this sociological perspective is not the main objective in this research.

Here, the critical realist-informed starting point to evaluations about the most practical realms in which to develop educational practices is that the pre-existing educational structures of the open transformative totality maintain values to surface teaching. There a general theoretically informed research is specifically an identification of theoretical concepts and a dualist application of these concepts as theoretically sound

and subjectively true viewpoints to practical work. However, these conceptualizations become reified in theoretic forms and in individualist explanations of actual (not real) things, at least by students with weak reflective learning skills and competencies. For example, Simons et al. (2004) delineate this empiricist actualist mode (explaining daily constant conjunctions as happenstances which are not the mechanisms of the life) of formulating theoretic laws by applying general theoretic explanations in learning to provide a starting point for educational research. This research strategy cannot discover the reasons for or nature of structured social mechanisms in the maintenance of the students' generally diffuse and disjointed behavioral learning patterns. Neither can this research strategy support an abolition of the students' surface learning activities in real social life because social life is strongly and deeply structured at its core. Descriptions of students' dominant external motivation in learning do not provide behavioral options for them to enhance their motivational competencies for intrinsic learning. By contrast, intrinsic behavioral competencies do grow up spontaneously when social educational practices do not provide incentives for this change.

The students with their obvious surface learning skills and orientations often do not necessarily have a rich set of assertive and other skills, such as self-monitoring reflectively on the internal and external real determinants of their behaviors. They are oriented to react to direct perceptive stimuli through emotional and inductive reasoning. This general feature to learn at the overt behavioral descriptive level is procrastination (see Ferrari, 2001) and it is tantamount to passive and impaired problem-solving behaviors in all sophisticated behavioral activities in one's real learning. Self-regulated educational research can identify and describe ideal and poor learning at a psychological surface level but description of individual or nomothetically elaborated behavioral deficits do not change behaviors to more feasible deep learning realms. Although methodologies in the improvement of specific self-regulated learning skills can be successful for some students, these narrow specific programs and methodologies can cause greater divergences and the placing of too heavy a behavioral load can also increase behavioral impairments in some. Multiple empirical investigations in contemporary educational psychological research indicate an increased deviation in students' target behaviors due to rigid methodological implementations, but these questions are not discussed further in this research.

The main argument here is that general psychological theoretical explanations of students' learning do not provide means for tailored scaffolding that would improve the students' learning at their divergent competency level. For example, some of the students with adequate competencies might prefer rich scaffolding for self-regulated learning. However, here, these students are in a minority and the majority of the nursing students have moderate or weak learning skills and clearly prefer surface-learning, which behaviors they through their inductive and often flawed reasoning view as deep learning. Specific self-instructive methods for a student's self-monitoring are ineffective because they would turn her learning into a more specific overt behavioral activity pattern and increase her dualistic and theoretic orientation to learn general normative epistemological issues without her own internalized reflection of the real ontological things. These instructive self-monitoring methods apparently are also diffuse or self-focused for the students with better-developed behavioral skills.

Therefore the main valid and practical approach to improve teaching in psychology studies is this behavioral metacognitive monitoring stance for devising and implementing behavioral scaffolds in a student's learning. At least this approach would

cause minimal disruption to the students' teaching and their daily learning where the only tradition to develop education is to have direct suggestions from the students on how the education would maximally satisfy their either emotionally derived or more deeply asserted needs. Behavior monitoring strategy in the enhancement of students' deep learning and reflective problem solving is also quite natural and directly embedded in teaching psychological issues and into its concurrent empirical research in higher studies with their contextual and expanded knowledge conceptions. This research approach, flexible in methodologies, could also provide critical realist means to deeper psychological explanations of students' real behaviors, when abstaining from too hasty theoretical formulations and persistently reaching at deeper psychological understanding about the students' real daily learning behaviors. Here the research objective and reporting approach is the empirical research about the adequacy of the attained explanations and of the feasibility of the specifically implemented scaffolding of student learning.

3.3.2 Specific implementations in teaching and learning scaffolds and measurement of their impact on the students' learning

In the first stage into empirical research of the practitioner's work there are no adequate deeper explanations to the students' learning behaviors in order to measure empirically whether implementations in scaffolds would have an impact on the students' behaviors. Therefore in order to strive to these deeper explanations it is necessary at first to have a deeper psychological description of the students' learning behaviors, which is the research objective in this first project.

There is no space here to elaborate the designed and implemented scaffolds to teaching of psychology the bases of which are on broad psychological elaborations and earlier research in human self-regulation and self-regulated learning. The scaffolds emerged from the practitioner's many years' teaching of nursing students about human nature in a psychology course; the scaffolds became more specifically outlined and constructed and formed into a structured and integrated teaching and learning framework. Specifically, the practitioner's task was to ensure that the scaffolds would enable and intensify student's integration of preliminary and continuous homework and of classroom teaching and coaching. All this integrated teaching required the practitioner's accurate preliminary planning and following of timetables of the course's progress and smooth executions of the scaffolds in his teaching practice. The implemented scaffolds were:

(1) In the constructivist and dialectical critical realist stance a multilayered position to the stratification of Agency (elaborated by Bhaskar, 1993, p. 167) by means of rich and deep learning materials (in perspectives and conceptualizations, introductions to metacognitive behavioral issues) which were incorporated and embedded in the materials as well as in basic teaching discourses to be aware of one's subjective behavioral orientations and perspectives to the present issues at hand.

(2) The practitioner's coaching of the students and a student in real daily learning behaviors in classroom teaching together with an increased psychoeducation of the students to their daily monitoring of their contextual behavioral

management presented as concrete examples into behavior monitoring and activity-scheduling recording techniques.

(3) Three-phase teaching process introduced as a constructive learning process and a broad structure for a student's choosing of her learning strategies and specific learning protocols in her homework and classroom work; from orientating perspectives in human behaviors to deepening and practicing of one's perspectives and conceptualizations and to inventions and applying of one's conceptualizations to one's daily and vocational life.

The scaffolds were redefined and enriched from the previous year's psychology studies, for example learning materials were targeted more deeply to individual daily and anxiety management although the uncertainty individual realm was only covertly presented. Also the deep constructivist psychological and philosophical issue in individual contextual behavioral management was superficially, broadly and flexibly introduced in learning materials and teaching discourses, but it was not specifically taken as the main teaching objective until the third research project. The introduced novel scaffolds to teaching were presented in theoretical perspectives to deepen psychological understanding of self-regulated behaviors and self-regulated learning, although the self-regulation as a psychological conceptual approach was not specifically introduced to the students' learning objectives. The implemented scaffolds were not commonly used in the educational institution in ordinary teaching and lecturing. They are thus totally novel options in teaching as contemporary educational psychological research on self-regulation and self-regulated learning research has shown.

Collaborative teaching discourses with intensified confrontational teaching discourses, crucial in coaching and combined with motivational interviewing (as Levensky, 2003, has recently elaborated in more detail), enable the introduction of new behavioral methods (e.g. stepwise problem solving) by the practitioner's observation of a student's individual learning behaviors. This teaching did not directly reinforce a student's passive attention to learning objectives or overt reading of theoretical issues. In addition, individual behaviors were addressed in classroom coaching and learning materials through a student's metacognitive perspectives and (dysfunctional) beliefs. In each course's constructive execution the practitioner's feedback to an individual student of her recent attained learning outcomes at each of the five learning phases guided and encouraged her to individual restructuring and its evaluation. However, no option emerged for extensive application of software technology at that time and the practitioner's summative confidential written evaluations of each student's learning outcomes was an unsolvable flawed guidance approach which did not encourage her to more confrontationally identify her recent precise steps and activities in her execution of learning. Some students were unable to benefit from the practitioner's evaluative feedback on their individual learning outcomes in each of the course's five phases because they evidently took the feedback as merely diagnostic devices and not as suggestions for evaluations and revisions of one's individual learning activities. This shortcoming reduced the effectiveness of students' collaborative feedback and it surely sustained the students' surface learning patterns.

The practitioner's coaching was urgently required as an encouragement and collaborative instruction to the students in many of their strategically managed real self-regulated learning activities. Because the students often did not concentrate on their

strategic self-regulation behaviors, their coaching stayed as relatively ambiguous and ineffective especially for those students whose skills in self-monitoring might have been weak or when the students' behavior monitoring was otherwise disrupted. The students' insufficient behavior monitoring also tacitly took place in the classroom setting because the practitioner's utilization of coaching put extra stress on a student's own responsibility on her real learning activities for which she was not already prepared in her evidently manifest orientations to learn of theories and exact concepts. Therefore a student's learning context became a dynamic and contradictory learning template compared to other, and the most common, social learning environments the students encountered at that time. Although the executed coaching often prevailed as life counseling without much stress on one's real behavioral activities it stayed as quite a weak strategy to encourage the students to challenge their preconceptions and automatic thoughts. Coaching of a student's behavior brings metacognitions, schematic thoughts and dysfunctional thinking patterns into a student's focus and revision when life coaching is more generally and mainly focused on general lay, socially preferable behavioral patterns.

In any case, coaching was rather an advanced teaching method in these educational nursing frameworks. It is an individually targeted teaching discourse and thus it evidently was not easily accepted and welcomed by all of the students. The dominant teaching method was illustrative instruction of learning topics and direct presentation of the basic normative and structured knowledge related to practical nursing. As a more individually and behaviorally orientated method, coaching sets a feasible stage for the practitioner's behavioral assessment of the students' real learning behaviors and it also establishes a specific template for the validation of the diverse learning outcomes of a student's learning activities through the evaluation and revision of their recent behaviors.

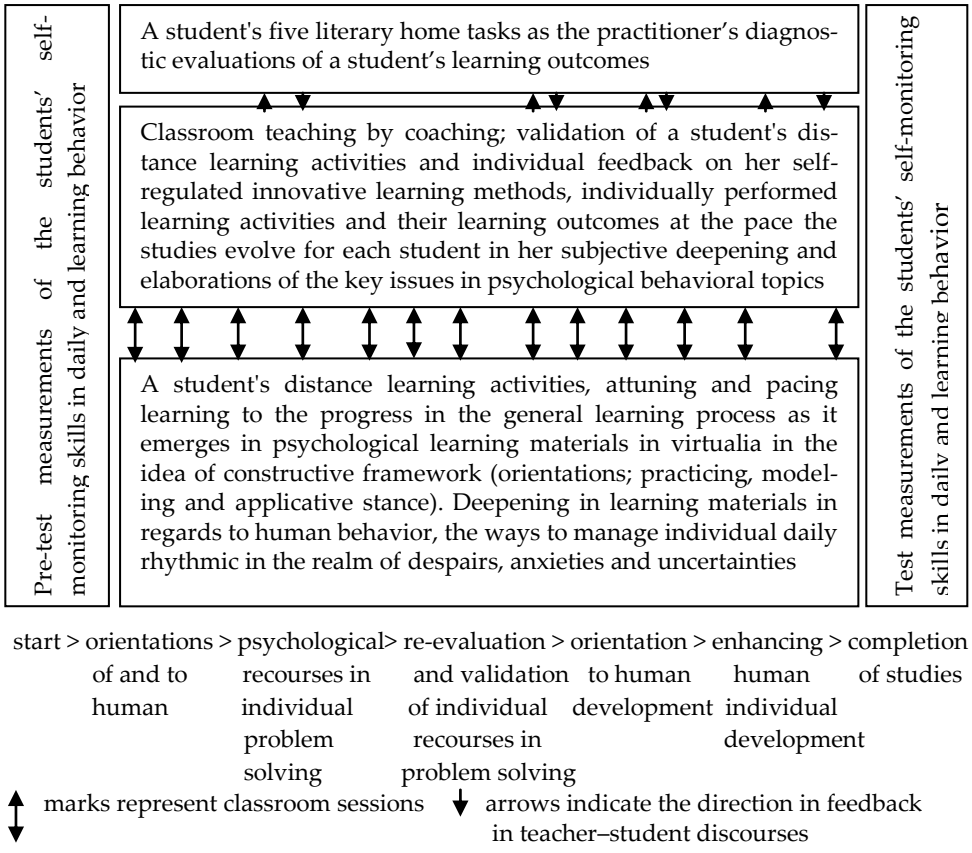
Owing to the students' intentions to revise the practitioner's coaching discourse into lecturing of easily graspable learning issues the practitioner was frequently unable to concentrate and to target his supervision to each student's main individual management of their behavioral learning problems. Therefore the coaching lapsed frequently into identifying a student's basic metabeliefs regarding human behaviors or into validation of the real deficiencies and limitations in her real recent learning. The shortcomings in coaching did not often provide incentives and practical steps for an individual change of one's recently performed individual learning activities. Although the student might interpret feedback from coaching as discouraging, it might increase a student's sudden intrusive thinking and avoidant behavioral attempts to abolish the discrepancy between her implicit beliefs and new educational viewpoints to her own behavioral and apparently partially deficient learning activities. This initiation of the student's intrusive thoughts could also increase her restricted emotional self-reflection that could interrupt her broader reflection required in metacognitive monitoring of individual world-lines. Due to these two discrepant interpretative stances and viewpoints from her own and from official educational objectives encountered by a student she could interpret and take superficially any feedback from the practitioner. Therefore the feedback in coaching seemed to fail to reinforce a student's extra attempts for making self-initiated changes in her real learning behaviors. In the students with concentration problems in attending to and reflecting on psychological issues disruptions in individual learning behaviors as recourses into instructive teaching were thus unavoidable.

Moreover, the practitioner's coaching method, in broad outlines similar to Schunk and Zimmerman's (1998) strategy teaching, of empowering student awareness, responsi-

bility and trust, required that the practitioner on a concurrent basis had accurate knowledge about each student's real learning behaviors. This knowledge was not possible for the practitioner when the students often declined from their intentional learning orientations, for example in classroom conversations and in concrete searches, for advice to their real learning behavioral activities in order to validate the efficiency of performed learning activities. In this practice, Randi and Corno's (2000) coaching approach of two domains coaching, by instructing students on both their learning and collaborative innovation for the most feasible learning steps is not frequently workable. For an individually tailored implementation, this type of coaching requires that a practitioner gain an accurate knowledge of a student's daily self-regulated and problem-solving behaviors (not only theoretical categorization of a student's skills) and also of a student's behavioral deficiencies. That individual knowledge might be possible if the practitioner's knowledge of each student's behavioral monitoring records were available (as determined in the third and fourth research projects), and it might provide the data for the practitioner's behavioral assessment of each student's learning behaviors.

Individually tailored coaching would allow the practitioner to construct and to implement additional tailored scaffolds, as Figure 3 outlines. The scaffolds were indivi-

Figure 3: The general teaching and learning package for the teaching process in psychology



vidual coaching, specific introductions to individual use of behavioral monitoring techniques and of the students' completed pre- and post-test behavior monitoring records, a student's behavioral assessment through coaching, the constructed learning process in basic teaching structures in five-phase psychology studies. This scaffolding enables the practitioner's empirical research of the workability and feasibility of the teaching program in the enhancement of students' self-regulated learning. Finally, if the students' self-regulated learning sufficiently takes place in their daily learning of psychology the constructed teaching scaffolds could provide options for introductions and deepening of broad, constructivist and conceptually rich psychologies in individual anxiety and uncertainty management in the realm of an individual's real daily behaviors in the third project (as becomes affirmed).

Figure 3 presents the entire structure of revised and mutually combined scaffolds in teaching and a student's learning of psychology. It is the teacher's first attempt in his search for a real scientist-practitioner's work in the generation of empirical data on each student's monitoring skills and of her potential behavioral changes in a pre- and post-test setting, the changes to which in their studies in the psychology course would arguably and soundly have a real impact or influence.

3.4 Empirical research on the students' behavioral competencies via daily behavior monitoring methods

This subsection first delineates how psychologies on self-regulation and self-regulated learning do not provide a practical basis for the introduction of specific behavioral monitoring means into the students' daily learning. Then it is stressed that other basic conceptual matters on self-monitoring, behavioral monitoring and metacognitive behavior monitoring have emerged from real educational practice through a mindfulness behavioral stance in critical realist philosophical elucidations and contemporary CBT clinical practices. It is noteworthy that here, designed monitoring records both as methods for obtaining research data of the student's daily learning behaviors and for enabling behavioral changes in the incorporated learning scaffolds via metacognitive monitoring records, became invented and designed by the practitioner's more implicit assessment of the students' real learning behaviors such as of their surface or deep learning activities or of both. The practitioner-teacher's observation of a student's behavior is the main method of obtaining data for evaluation of the students' behaviors and of their behavioral competencies. Of course the assessment requires much of the practitioner's reflective activity to find the adequate psychological description and explanation reframes in the students' behaviors. If successful, the assessment would logically and practically inform the most adequate construction of the scaffolds applied for reinforcing and enabling a new rise in the students' self-regulated behavioral dispositions in their problem solving and learning behaviors. It is not viable to discuss Bhaskar's (1997, 2000) elaborations in dispositional realism in critical realist philosophy briefly. In any case, the discussion is not the issue here, because the introduced psychological approach stays rather diffuse regarding human skills and/or dispositions. A psychological non-dual psychological approach to human behavioral dispositions is sound and here it is essential for the introduction of novel scaffolds for a student's daily learning throughout this research project. It directly demonstrates the way to focus on students' real-time learning and on the practitioner's move from teaching psychology to enhancement of their deep or reflective learning by providing learning scaffolds for their

mindfulness learning in their psychology studies.

3.4.1 Shift from formalized self-regulation measurement designs to measurements of the students' daily metacognitive learning behaviors

Here it becomes shown how a critical realist position deployed here in behavior monitoring is not based on any theoretic position including recent and more sophisticated psychological theories on self-regulation and self-regulated or self-directed learning. In recent psychological research self-regulated behavior has become elaborated in many ways, there is no room here to elucidate the many approaches on how theoretic or methodical criteria have intruded into deployed recording and monitoring designs that entirely exclude an individual's daily rhythmic position. For example, some of these theoretic introductions to self-regulation and self-regulated learning are based on cyclic phases (Zimmerman, 2000), others are based on specific features in innovative behaviors (such as concentration, peer supervision, classroom instruction techniques) and some are focused on specific problem-solving behaviors (learning maths, language, etc.). Middleton and Midgley's (1997) conceptualization of self-reflection and goal-directed on-task reflection provides the general approach but they do not outline in practice how to put their dualist notion of individual opposite forces into empirical research In CBT conceptualizations limited self-reflection and broad reflection also become delineated and it has critical realist philosophical roots, for example this was Theodor Adorno's main focus that remained unsolved for him. The critical realist modality approach to a structured human agency, which is consistent with broader and limited reflection, was elaborated further through CBT conceptualizations in the following research projects. Here it is considered that one's traversal between these modalities could manifest as disruptive metacognitive behavior monitoring in the students' demonstrations of their completed records of their recent daily behaviors.

To put into research the practice of behavior monitoring recording and other techniques requires much writing and elaboration of the basic critical realist philosophical tenets. Researchers in education and self-regulation have noted difficulties to empirically research self-regulation because it always recourses into theoretic positions as occurs also in deployment of trace technologies although Winne and Perry (2000) do not note that problem. Also, trace methodologies are deeply theory informed and thus they do not demonstrate directly the ways and the tacit evaluative criteria behind the monitoring of a student's present (and recent) daily behavior. The methodology devised here is considered as more suitable and accurate for the practitioner's analyses and evaluations of the students' completed behavioral monitoring records and of their written appraisals and ascriptions laid on their behaviors. It was noticed in this research that the students' literary expressions of their behaviors indicate and demonstrate the idiographic ways a student acts and tacitly appraises her behaviors as her individual inherent behavioral orientations, albeit the completed records do not provide specific theoretic clues or mechanistic criteria for their nomothetic scientific categorization. An experienced practitioner and psychologist familiar with CBT practices and informed by critical realist philosophical tenets can utilize the students' monitoring records and written appraisals as general evaluative criteria and indications of the students' metacognitive reflective levels or their individual behavioral modality frameworks in their reflective behavior management. This research of real indications and manifestations of the students' behavioral competencies in their monitoring of their

recent lay behaviors via recording designs does not require the practitioner's detailed and theoretic pre-evaluative criteria in classifying the students' metacognitive evaluations and ascriptions when the designed monitoring devices are focused on demonstrating the smoothness or discreteness of, or of a student's non-dual or dual positions of her ascriptions to her recent situations arising from her behavioral load. In the practical research stance the construction of monitoring recording devices could provide real data on the students' behavioral modalities and frameworks in metacognitive behavior monitoring and evaluation as their tacit behavioral dispositions when the practitioner's proposals to utilize formal criteria in their behavior monitoring do not interfere with students' metacognitive behavior monitoring.

The attained data could show students' tacit behavioral patterns and their ways to feature their contextual behavior either as environmentally determined (according to Middleton & Midgley's, 1997, conceptualizations of task performance monitoring referred to above) or as problematic and stressful in their internal emotional descriptions (as limited self-reflection in Middleton and Midgley). It could be that these two disjointed dualist attributive patterns of their recent behaviors do not appear to be sufficient for the students with better developed intentional competencies and activities. Then they might be able or determined to describe their contextual behaviors in terms of both of these mentioned behavioral modalities and thus seek and construct their internalized metacognitive attributions for maintaining an individually internalized and balanced activity orientation in their contextual behaviors. In the latter behavioral description and ascription a student makes a metacognitive choice between balanced interpretations and evaluations in her present contextually arisen considerations of her performance and of her post-task self-reflections regarding her all contextual and metacognitive self-regulated activities in a way Schunk and Ertmer (2000, p. 634) have broadly theoretically outlined.

Schunk and Ertmer's elaboration (or any other theoretic positions to self-regulation and to self-regulated learning) does not comprise a mindfulness position or critical realist position to individual metacognitive or metacritical problem-solving behaviors in one's real-world approaches to referential detachment and dialectical thoughts, therefore their delineation provides no way into behavior monitoring and recording devices in an individual's daily rhythmics. The above mentioned researchers seem to suggest empirical research about an individual's pitfalls in her behavior monitoring, which is a dualist position to maladaptive and not adaptive behaviors. Here, in a non-dual position, the students also experienced these shortcomings or difficulties although they, in spite of their difficulties, were often able to concurrently sustain their 'out-of the blue' behavioral activities in some behavioral realms of their real daily rhythmics. This fact strongly suggests that designs in behavior monitoring need to comprise an individual's mindfulness as well as mindlessness behavioral features or modalities. The position taken here is that in individual spontaneous contextual behaviors and its appraising frameworks it is self-evident that the students behave more reflectively and mindfully compared to the students who are unable to construe their internalized metacognitive appraisals of and ascriptions to their recent behaviors.

All specific methodological research projects (see Boekaerts et al., 2000) on behavior monitoring are excluded here for practical reasons. With these current educational programs, dominant values and norms in the management of teaching are not acceptable either by the administration or by the nursing students themselves. The students in nursing have just entered into their nursing studies, they are focused on learning

practical skills and they are not familiar with the more encompassing and informal learning issues. They see their surface learning as being the only learning mode and they consider it to be directly dependent on adequate teaching methods and on their inherent motivation.

As was broadly outlined above there are many reasons for not measuring the students' on-off activities as functional and nomothethic personal capabilities, or meta-theoretic individual behavioral skills. It is necessary to take into account that a number of self-regulated activities that are not on-off activities because individual self-regulated behavior in itself can be partially flawed through specific and mutually conjoined perceptive, attentive, interpretative and evaluative activities behind the scenes individual metacognitive behavior management. Endler and Kocovski (2000) do not take this into account, instead they only highlight all metacognitive monitoring strategies as positive without addressing the fact that by reinforcing these mental activities by all means (for example, by creating a therapeutic climate for having new outlook on the self) would be either workable and beneficial or not. Direct research by behavior monitoring records occludes the practitioner-researcher's idealist pre-formulations of functional problem solving and its monitoring and preconceptions of this kind do not indicate the students' tacit real behavioral tendencies. Idealist formulations and theory-informed methods in practical implementations would increase the students' tacit dysfunctional self-regulated behavior and would exclude their mindfulness spontaneous behaviors.

Instead of placing idealized notions of behavior and its monitoring above the expansion of the metacognitive monitoring position into an open totality of one's daily rhythmics, the practical monitoring position becomes enriched as internal multilayered mediations in the initial and somewhat formulated CBT therapeutic approach to individual recourses to all internal and external mediated and changing things at work in self-regulation management. In that research position, the loss of accuracy of measurements is covered by all other aspects; it sustains human contextual inherent multilayered reflectivity, metacognitive transcendentalism, openness and ongoing rebirth of the human mind and individuality. For the present direct measuring purposes, behavioral records and diaries are the basic behavior monitoring recording method applied here (see Appendix I). Although as written records they deal with past behaviors and therefore are individual present interpretations, evaluations and meta-evaluations, they are not necessarily single real things. Facts of past behavior, evaluations and meta-evaluations are open to continuous re-evaluation in one's contextual life in one's renewed evaluations and meta-evaluations. Each evaluation is an individually taken contextual stance describing the pivotal realm of individual metacognitive problem solving. Thus contextualism is maintained in this research stance as critical realist philosophies purport the initial template in human knowing and doing as a concrete and universal singularity (Pratten, 2007, pp. 73–74).

The CBT monitoring strategy, as a recording device of individual contextual behavior, describes monitoring as individual post-task evaluations. It comprises a great number of individual meta-reflections in evaluations and given attributions of previous daily conditions and behaviors. This collaborative method is commonly applied and looks into a client's depressive and anxiety behavioral problems, such as obsession and rumination (see Barlow, 1993, pp. 252–253; Fennell, 1999, pp. 188–192; Salkovskis & Kirk, 1999, pp.154–155; Brown et al., 1993, p. 155). The continuous behavioral monitoring is the essential part of individual ongoing metacognitive behavioral activities. Performing one's behavior monitoring via recording is not possible for an individual if a great number of

disruptions arise in her daily behavior and impair her on-task performance mindfulness activities. This has been also been noticed by other researchers; for example Butler (1998) and Belfiore and Hornyak (1998) outline that the relationship between behavior monitoring and cognitive meta-evaluation is mutually reinforcing in both directions.

Of the two divergent and mutually exclusive positions to behavior monitoring (theory–practice), dualist and non-dualist, the non-dualist position in emancipatory social life is sound and this practical approach becomes enriched by some CBT treatment protocols in the accounting of an individual's contradictory internal forces in the third and fourth research projects. The introduced non-dual position also entails individual metacognitive behavioral realms and thus in the practitioner's ventures it addresses divergent individual behavioral and contextually adequate behavioral tendencies and forces. In this empirical research the position is the latter that arises when a structured human agency with contradictory internal forces and tendencies and with metacognitive evaluations becomes taken as self-evident and sound as has already been broadly outlined.

3.4.2 The critical realist-informed stance in self-monitoring and behavioral monitoring

Next is delineated how for the practitioner a recording path towards broader behavior monitoring emerges within the non-dual self-monitoring realm. The performed research itself demonstrates and gives reasons whether an empirical research of students' general or core behavioral competencies is practically manageable.

Theoretic roots into self-monitoring and broad behavior monitoring. The issue of metacognitive self-monitoring diverges from theory-informed stances and from actualist theoretical empiricist stances of measuring the reified forms of attained or unattained ideals and norms in an individual's focused monitoring and behaviors. In the critical realist philosophical position to individual behavior monitoring is an issue of individual referential detachment activities of knowing of things that are not the same as subjective experiences although known through subjective experiences. The delineation of the behavior monitoring stance opens up in the dialectical critical realist philosophical subject–object dualism and in the derivation of human behavioral non-dual mind activities in human knowing (for example referential detachment and transcendental reasoning and arguments) as was already broadly outlined in critical realist philosophical terms. This stance does not emerge in theory-based specific psychological conceptualizations that psychologies on self-regulation view as a crucial issue in self-monitoring but not in behavior monitoring issue (see for example, Schunk & Zimmerman, 1998: Hacker et al., 1998a; Boekaerts et al., 2000).

Metacognitive behavior monitoring by behavior registering means, such as activity scheduling and recording of specific contextual psychological and behavioral things (as the emergence of symptomatic behaviors) is a common strategy in CBT-informed psychotherapeutic client practices. For example, individual daily records are a starting point and introduction to collaborative therapeutic special treatment protocols and they guide a client in her validation of a frequency of and of specific individual (symptomatic) behavioral activities under which time–space tensed conditions this symptomatic or other problematic behavior occurred in an individual's daily life.

Monitoring via recording of only symptomatic or problematic behaviors in the self-monitoring position is an inadequate strategy in this research when taking into account

the vast discrepancy between the students' behavioral competencies. Tacit reinforcement into focusing only on one's symptomatic or problematic behaviors might only sustain an individual's dualist and dysfunctional behavioral patterns if dysfunctional behaviors are not related to one's other daily behaviors, because in the critical realist position every human being is internally multilayered and constrained also when under stress and under psychological health problems. As mentioned above, these discerned special features and characteristics in individual behaviors can be either a practitioner's or an individual's own TINA formations. Thus they might not be an individual's own metacognitive appraisals of all her internal and external real things in the transformative social life if an individual in referential detachment activities can't know of the real things, thus knowing only her subjective experiences.

Traditional empiricist notions to human knowing do not take into account that all individual's referential detachment activities are worth accounting if seeing an individual as a concrete singularity with all dialectical modes (see MELD axiology). In psychological research this directly informs the practitioner's initial stance to assessment and seeing and measuring of a client's (a student's) internal forces in their mediations. This initial practitioner's stance must be taken as self-evident if empirical measurement of individual behavioral attributions and ascriptions towards one's own behaviors is to be possible at all. This empirical measurement of a client's (student's) internal forces and tendencies does not come up at all in theory-informed research positions. For example in the latter stance, Winne and Perry (2000) seek a theory-informed trace methodology in measuring behavior monitoring. Theoretically driven idealistic criteria of finding flaws or idealized criteria in individual metacognitions traces do not represent or are real individual behaviors in one's daily rhythmics. Their position is against Flavell's (1979) original idea of behavior monitoring as a metacognitive activity which was shown recently in critical realist elaborations, for example in sound delineations of individual's dialectical and transcendental reasoning activities. Here the approach is that an individual's reappraisals in her monitoring of real-life conditions are an individual's continuous reorganizing activity where behavior and its monitoring recording take place. If remaining in empiricist theory-informed positions in pre-theorized categorizations, potential individual changes in metacognitive monitoring require a stable attachment to a single methodology in metacognitive monitoring and as a practitioner's epistemic position it is based on a flawed and idealist static world order without change. This excludes the practitioner's contextual and flexible stance in the applied tailored methods as the practitioner's newly constructed monitoring techniques via his assessment of the students' all recent functional and dysfunctional behaviors. Self-regulated or automatic individual behaviors might have both dysfunctional and functional features and goals, not only the latter or the former alone as theory-driven self-regulation theories have outlined.

In critical realist philosophical conceptions, to have primacy of ontology over epistemological human knowing within the subject–object ontological dualism and in non-dual individual actions and so on, and to know and to act, are new concepts that do not require general psychological theorization here. Because human behavior can consist of broad (non-dual) reflections or limited (dualist) self-reflections with their concurrent biased reasoning, metabeliefs or other TINA formations of viewing real social things as theoretic forms is sufficient for present methodological measurement purposes because the entire broad issue is a practitioners' obstacle to his CBT conceptualizations, his assessment of the students' behaviors and his practical enhancement endeavors in

teaching. Students' daily activities take place in their contextually reflected basis to which activities they have direct access in their metacognitive referential detachment activities.

When researching an individual's self-monitoring in the course of her behavior the theoretic approach of focusing on problems in individual self-monitoring is common in basic psychology studies. But this clinical theoretic basis excludes a critical realist practitioner's stance to enhance behavioral and self-monitoring as the potential link to and resource for an enhancement of self-regulated learning and behavior. Empiricist strategies of measuring monitoring as a special and separate theoretic stepwise and strategic form are useless here, as Zimmerman (1998) delineates, they, as guided self-instructions, do not address an individual's potentially impaired self-judgments, they in fact lose the initial practitioner's work position by turning to rigid methodologies. But in critical realist perspectives, broad designs in individual behavioral modalities by a student's identification surely serve as real incentives for her to validate and re-modify her behavior but just monitored in a more functional way. The introduced designs in behavior monitoring also provide the practitioner with real-time empirical information of the student's behaviors that can increase options to practically strengthen teacher–student collaborative work which is not possible in instructive teaching discourses. The initial mindfulness stance towards individual openness cannot be returned by instructing or by teaching psychological concepts and theories. As discussed above, learning of theories can impair a student's reflective doing in her ontological and constrained life.

Introduction to broad designs in mindfulness and mindlessness behavior monitoring. There are no available reports in contemporary empirical and educational research on academic students' use of critical realist-informed and modality-based mindfulness monitoring research positions. In CBT-client practices the utilized monitoring methods and records are not direct research and reporting issues. So here it is necessary to start from scratch in the introductions to behavior monitoring devices and records that are attuned to the nursing students' basic behavior monitoring competencies and in their residing behavioral deficits. Here a discovery of adequate and workable self-monitoring tasks for recording individual behavior in the sense of CBT (that is behavior of human mind and overt acts simultaneously in the realm of human metacognitions) has been under the practitioner's investigation for many years. For example, it was found in CBT-informed research that the students in their problems spontaneously turn to a limited self-reflective mode. That is individual reflecting on individual emotions and especially despairs, such as monitoring the rise of their dysfunctional behavioral symptoms but not of all their contextual behaviors in the course of their real on-task performance. As shown in the psychology of human personality in earlier modern psychological theoretical orientation, limited reflection indicates an increase and stabilization of the state orientation (Kuhl, 1984, 1985) to manage with one's anxieties. An individual's state orientation to her behaviors could cause a rise in new anxieties hence action orientation, as problem solving, might be too limited and rigid or exclude reflecting on all individual behaviors. In this modern psychological position Bandura (1977) elucidates theoretically the importance for an individual to maintain action orientation for positive conceptions of one's own self-efficacy. But these modern dualist psychological positions do not pave a practical way towards invigoration of an individual's broad monitoring and reflection in real constrained life. Here the guidelines and introduced criteria for the practitioner's categorization of the students' outcomes in recordings are mainly based on the already mentioned critical realist philosophical categorizations, such as subject–object, non-dual–dual, and cognitive–metacognitive behavioral dimensions.

Self-monitoring is a broad behavioral framework in the mindfulness reframe and it deepens in this stepwise research through the introduction of a stratified human agency and modality perspectives. These perspectives also guide the practitioner to eschew dysfunctional and theoretically deduced implementations in the students' learning and to maintain a critical realist-informed broad flexible approach to an individual's contextually arisen monitoring under one's daily rhythmics. It informs wide monitoring designs introduced to the students that would enable them either to focus either on dualist or non-dualist perspectives and appraise their recent behaviors. A student's focus on her completed record and to its literary ascriptions can become classified through the practitioner's lenses as dualist, either in one's monitoring and appraising of one's despairing moods and emotions or in one's monitoring and appraising of external things seen as the main behavioral obstacles. It was discovered through the teacher's preliminary research in previous courses that the students monitor their punctual challenges and behavior in this context while losing their entire daily rhythmic. The students can monitor and record their daily activities separately from their daily real transforming things. They, in their flawed inductive reasoning, might wish to find ways to manage their pre-formulated and abstractly conceived environmental challenges thus losing contact with their real environmental things. These cognitive biases are theoretical and flawed reasoning patterns, which might preclude a student from viewing all real things of the world and acting on them. A student's non-dual reflection manifests, and through the practitioner's categorizations of her literary ascriptions, to her specific recording features and emerges as more internalized in her real on-task behavioral management realm, as mindfully rich and as conceptually novel student's elaborations. These students would obviously seek to monitor their main worries as of little threat because they are able to manage functionally in their on-task performance problem-solving activities.

Biases and flaws in individual cognitive and metacognitive activities need to be reappraised and revised by a student, and this is the nature of individual problem-solving activity itself as acceptance and commitment CBT delineations show. Metacognitive monitoring in the critical realist stance of managing individual reflections within the ontological subject–object dualism, without lapsing into theories and ideological norms, is a vital part of cognitive behavior monitoring. As critical realist philosophy has proved since Theodorno Adorno's (1966) initial elaboration of individual limited self-reflection, and as it emerges in contemporary CBT elaborations (impaired attention, cognitive distortions, dysfunctional metabeliefs, etc.) reflecting means an awareness of entire individual internal activities in mindfulness problem-solving behavior. It is feasible to leave the choice of the optimal self-monitoring strategies to a student herself by portraying the possible monitoring options to be applied as measures and as indications of her reflections on her behavior monitoring. The students' tacit choices of their self-monitoring styles and strategies can be thus directly evaluated from their literary expressions in the CBT-behavior assessment stance; whether they are reflective, or emotional, or environmentally perceived practical actions, or more internalized metacognitive delineations and elucidations of individual behavior in daily rhythmic. This latter indicates the student's behavioral dispositions and also her metacognitive activities in her real behavior, delineated as basic human reflective activities in dialectical critical philosophy (see for example Bhaskar's four modes in negation, 1993).

In critical realist philosophy there have been elaborations concerning the problem of

inductive reasoning: the problem of reasoning from values (such as from despaired or other emotions) to 'facts', which facts are an individual's empiricist or actualist appraisals but not of real world mechanisms. As shown in the psychological research here, this individual reasoning could manifest itself under stressful and demanding conditions when the perceived problem is to cope with these concrete and actual things which become evaluated and attributed as so demanding that a person cannot reflect them more broadly For example, a person can not reflect a number of ontological things as their real meditations or she might not have room to reflect on all deep environmental and internal things continuously as her 'out of the blue' activities in her rich creativity acts. Among the nursing students with underdeveloped self-monitoring skills one's spontaneous awareness of all internal and external real ontological things does not occur in an individual's biased metacognitions. For example, a student's openness to all world things could decrease or become absent when she experiences emotional load and stress, thus perhaps paying attention only to threatening clues as the main stimuli. She interprets and appraises her behavior in a biased way as has been found in contemporary rich CBT research. This is the case where the student monitors her negative feelings not as contextually arisen and to be successfully managed, thus she tries to manage them in her weakened on-task performance by rigid activities such as by her safety-seeking behaviors to alleviate her despaired emotions. The avoidant behavior could cause additional difficulties and disruptions in self-monitoring and in entire behavior monitoring. For example, an individual might self-monitor her actions in certain challenging situations and tasks by her emotionally driven criteria but she cannot monitor anything else by more flexible metacognitive criteria. Her worry inducing self-reflection could be activated for a long time and this restriction in mind activities might hinder her from new interpretations and appraisals. This could cause new dysfunctional behavioral functions (such as metacognitive dysfunctional schemata) in self-regulated behavior as elaborated in descriptions of different anxiety behavioral problems and disorders. However, these theoretical considerations are not the issue here.

It was discovered in the preparatory psychological enquiries and executed searches for the optimal starting levels in the nursing students' behavior monitoring records that formal diaries of daily activities or of their scheduling by recording are not adequate because of the students' diverging dispositions and competencies. They seem only to direct the student to focus either on successes or failures in their daily activities. That task does not allow the practitioner to introduce new scaffolds in enhancing monitoring and all metacognitive behaviors because there is not sufficient space for a collaborative search of the students' completed recordings. Although therapeutic and empirically focused dialog is not possible in large teaching groups, recording of only problematic behavior is not adequate: the exercise would frequently prevent a student's individual behavioral stance of rhythmic and its uncertainty management on mindfulness in real life conditions. Neither is it feasible to focus on recording despaired moods and behavioral symptoms alone; they might reinforce the already symptomatic behavior maintenance in its limited self-reflection. This would give no orientation to revise and re-modify individual real behavior.

Empiricist psychological science cannot appreciate the broad behavioral idea of human attention and reflection. The empiricist approach starts from theorizing abstract or inductively reasoned competencies into skills and abilities, and that means recourse to traditional dualist mind–body psychological perspectives. It erases an emancipatory approach for an increase of new behavioral dispositions from the beginning in the

practitioner's teaching, a direct recourse to learning conceptions that are epistemologies and not real things of individual real (social) life to be reflected upon. In self-monitoring and its human reflections there always emerges an initial ontological realm of subject–object dualism to be managed within individual reflections. This rudimentary idea in modern dualist psychologies in practice to concentrate on improving an individual's self-reflection is not sufficient to attain a broader reflection of all internal and external things (see for example the introduction of reflection in open social cube realm of internal and external things; Bhaskar, 1993, pp. 273–274, 1994, pp. 150–152).

Broad reflection also needs to be enhanced: to achieve the mindfulness of the entire individual's dialectical, inductive and deductive thoughts of real things as mediations and forms of the real generative mechanisms at work. This is the critical realist ontological stance on human reflection, where the subject finds herself as existing in her perceptions, experiences and tacit evaluations and can become an intentional human agency to act in the social life for freedoms. Individual referential detachment in its all flawed and real knowing and doing activities is psychological problem-solving behavior which does not require preliminary theoretic psychological conceptualizations in engaging practically on designs, implementations and means of behavior monitoring recording and measuring outcomes in completed records for descriptive psychological purposes.

The world as external and ontologically separate from self-reflection, is really existing whether known or not by the subject herself. This expands the original issue of self-monitoring consistent for example with Carver and Sheier's (1981, 2000) delineations in broad terms. Zimmerman and Tsikalas (2005) also reframe monitoring of one's self-regulated learning and all behaviors as a crucial issue. Demetriou (2000) delineates the Buddhist stance of mindfulness as pivotal. This self-regulated position (Schwarz, 1984, 1990) expands to conscious self-regulation but does not delineate how to exclude as essential one's automatic responses in the behavior monitoring approach. Demetriou enigmatically supports this holistic behavioral monitoring stance of one's daily (social) rhythmics while not explicating his position more clearly than "reductionistic self-regulation techniques, practiced without intention (mindfulness qualities and systemic perspectives) may never access this resource of interconnected associated with healing" (2000, p. 267). But in moving to communal regulation, as Jackson et al. (2000) view, there lies a danger of losing this judgmental critical aspect as the core in individual's metacognitive monitoring. Thus they do not delineate how this move to communal regulation is performed if not lapsing into naïve realism and determinism in an empirical research and if not viewing the option of the practitioner's CBT-informed assessment of all human behavior as limited or broad, dysfunctional and functional and as contextual or non-contextual.

Therefore there is a need to obtain additional tools for mindfulness monitoring and their recording techniques to enhance an individual's mindfulness monitoring of individual social rhythmic life; these are not to be found in scientific reports on contemporary adult and academic studies. Contrary to the new approach posed here, contemporary research studies' empiricist (theory–methodology driven) attempts at stable and rigid monitoring techniques are targeted at monitoring predefined formal learning issues. The CBT approach applied here is based on the practitioner's behavioral assessment of a student's learning behavior. From this latter starting point of human mindfulness, a CBT practical stance and its tools are sought. If found, as turns out to be the case in this research, these tools are suitable for an accurate tailoring of scaffolds to

students' learning by meeting a student's pre-existing monitoring skills and competencies.

Concentrating on the practical manifestations of the students' behavior monitoring resources and its pitfalls in an individual's specific overt activities the practitioner can't know the students' behavioral monitoring competencies that explain why students' reflection is dualistically limited and whether this is the situation in all of a student's daily behavioral attributions and accounts. If these validating reflective activities do not emerge in an individual's reflections it is tantamount to her problematic and symptomatic daily behaviors. The behavior is similar to striving for pre-laid norms and guidelines for managing real things in individual real life; as dysfunctional worldviews and rigid metabeliefs, they are impairing restrictions in individual reflective problem solving.

3.5 Research problems

What is the level of the students' metacognitive behavior monitoring skills as related to general behavioral management competencies and what is their stability in the students during the course of psychology studies? Can these competencies be enhanced to meet the requirements of reflective problem solving as was planned via the implemented additional scaffolds to teaching of psychology?

In the critical realist stance to an emancipatory work in teaching these problems were derived from the teacher's assessments of the students' learning behavior, as was described and elaborated above. Therefore there are no narrow theoretical viewpoints and specific theories to the setting up and derivation of the research problems when the research issue is to enable all the students' diffuse, formal self-regulated learning and mindfulness or reflective learning. Possible pre- and post-test changes in the students' self-regulated learning and in their behavior monitoring records and literary ascriptions to the scored behavioral mode illustrate and demonstrate the positive or negative impacts of the psychology studies on the students' behavioral skills and competencies. If pre- and post-test changes in functional behavioral competencies and skills become strengthened in the non-dual behavioral realms the implemented scaffolding in teaching could have some positive impact on the strengthening of the students' self-regulated or reflective learning if the students' subgroup analyses warrant that conclusion. Behavior monitoring and recording by the practitioner's classifications directly signify the nature of these individual metacognitive skills in being and acting in individual world approaches. Research questions:

1. Are the students able to record their daily behavior and its contextual experienced load on a contextual basis? If not, then is it because they are incapable of taking an actionable judgmental stance on their real behaviors because they might have much stress, anxiety experiences and emotional problems which preclude them from monitoring and from behavior recording on a contextual and continual daily basis?
2. What is the (non-dual/dual) realm the students' demonstrate in their literary appraisals and ascriptions to their recorded behavioral moment of their recent behaviors? Are the students' attributions and ascriptions dualistic: (a) primarily inferred from their emotional experiences or (b) primarily inferred and interpreted by attributions of environmental factors or are the students' literary attributions (c) more internalized and conceptualized as

their holistically noticed behavioral determinants and factors to their on-task performance activities? The two first conditions indicate a student's non-dual criteria setting in their on-task performance with impairments in one's smooth mindfulness behaviors. The third attributive behavioral pattern indicates a student's non-dual reflecting of her recent (and perhaps present) behaviors demonstrating her deeper internalized competencies in her recent and (perhaps present) daily behaviors.

3. Do the students progress in their metacognitive behavior monitoring and appraisals during the course in psychology into non-dual reflection? If so, this would roughly indicate stronger manifestations of the students' more reflective and evaluative daily recording along with their literary and more reflective and metacognitive attributions onto which enhanced competencies the completed psychology course must have positive impacts.

If there are positive changes between pre- and post-test measurements in the aforementioned behavioral realms the positive conclusion of the feasibility of psychological studies on the students' basic problem-solving competencies is justified. Other living and learning practices would not import this change because general studies do not motivate or improve individual continuous metacognitive reflecting on daily rhythmic in this contextual individual basis. This course penetrates the core of individual unconscious tacit behavioral patterns and enables an initiation and improvement of the students' learning of psychology regarding reflective human problem solving. Moreover, ordinary theoretically arranged studies on human behavior and/or strong emphasis on emotional closeness in teacher–student's or classmates' mutual learning discourses cannot produce or introduce these potential changes because the rich perspective taking and one's own conceptualization and depth must be achieved through rich learning materials and dynamic classroom executions. That fact was proven to be true in three to five years of teaching psychology in this educational program for nursing studies and it has been shown in contemporary educational research on self-regulated learning.

3.6 Research variables and analysis of empirical data in the students' monitoring records

The research objective was to move from lay descriptions to relevant psychological descriptions of the students' learning behaviors without any purpose to generalize the research outcomes any further. In that sense, perhaps the practitioner in this subsection invested too much of his energy in explications of how his measurement and analysis were conducted as an adequate empirical investigation protocol.

In the issue-driven research approach it is noteworthy that empirical variables become constructed by the practitioner's assessments from the students' real daily learning behaviors. Initially they were based on the practitioner's observation of the students' daily behaviors and of their basic competencies as divergent as discernible within the critical realist behavioral interpretative and evaluative practical stance delineated before. The practitioner gradually became more clearly determined that he must persistently abstain from premature psychological epistemic theorizing when in the transformative real practice realm he does not know of the real things behind the students' daily learning behaviors as deeper psychological explanations Therefore the practitioner's referential de-

tachments in derivation of the research variables about the students' behaviors and their monitoring scores became categorized descriptively as follows.

3.6.1 Measured critical realist-informed psychological behavioral dimensions

From the social cube perspective the practitioner started from an assessment of the students' behaviors and had an informative psychological theoretic basis in self-regulation and CBT conceptualizations that became strongly integrated into the general, critical realist philosophical emancipatory position as outlined earlier. The practitioner devised records by relying on his CBT clinical experience to assess the students' initial orientations to complete the records in an honest trustworthy manner that were aimed at psychological research about their behavior monitoring orientations in their daily life.

The practitioner introduced the (activity) scheduling techniques as formal designs to the students' use in a tailored and focused manner at the beginning and at the end of the psychology course without the psychological collaborative reviews of their practical execution. The students received a specific introduction that described their initial purpose and the general rationale in implementing records and making literary appraisals and ascriptions to their chosen situational moment to which they paid specific attention in their completed records. The chosen specific situational moments were the points in the recorded curve where a significant rise or fall in their experienced behavioral-mental loads occurred. Questions on the ways to perform them, their workability in the validations of one's recent daily behaviors, the general or practitioner's expectations to having positive changes in one's daily well-being and life, or on their analysis procedures or other research issues were not specifically addressed. The students were informed that behavior monitoring was an essential part of human problem-solving behavior and the introduced records and their completion would support and provide incentives to their learning of the course's educational objectives. Therefore the constructed behavior recordings and the students' behavioral skills in scoring techniques and their skills to consciously attribute their contextual behaviors were applied mainly for the practitioner's empirical measurement purposes. Regarding their behavioral competencies the records provided no data for the practitioner's assessment of the students' learning outcomes. The initial practitioner's purpose was to maintain the presupposed diversity of the students' completion of records in behavior monitoring and it succeeded completely without laying any coercion on the students' performing the records at their own pace at home. The basic rationale of this recording as well as the main recording design without applications of specific instructions to attribute and ascribe to the recorded approach or curve is presented in Appendix I.

The main psychological behavioral dimension to be measured and analyzed is: (1) the realm of individual reference or framework in metacognitive behavior monitoring. For the practitioner it provided data of the students' metacognitive capabilities and the residing crucial limitations of being continuously and spontaneously aware of one's metacognitive behavioral issues. If a student's record does not belong to a certain day's continuous behavioral rhythmic as contextually arisen it indicates her impairment in metacognitive monitoring: her difficulties to manage metacognitively her daily behaviors. A student's failure to record changes in her daily load could indicate the student's insufficient metacognitive monitoring. The failure is equivalent to inductive abstractions in her thinking and to her high stress or to contradictory behavioral determinants she interprets that are put into her behaviors which prevents her from discerning her daily

behavioral activities and other behavioral sequences in relation to her daily activity chains and to her situational conditions. Related to that failure in recording there are other indicators to dualist and broken thought and activity patterns such as her styles and patterns to attribute and ascribe her behaviors in literary expressions.

The limitations in a student's scheduling and recording of her contextual daily behavior can be traced to different behavioral deficit or feature realms such as her extremely stressful living situation, to general limitations in her metacognitive non-dual competencies, to her current daily stress in facing acute on-task performance challenges, and to her suddenly arisen emotional difficulties, or to all of these factors. Failures are: (a) omission of the recording exercise and a student's inability to record a daily behavior or to demonstrate peaks and gaps in one's activity chains and loads, or (b) impaired non-dual metacognitive behavior monitoring by focusing one's behaviors by dual subjective or external criteria as a diffuse fairly straight line or as a single peak or short-cut line. An indication of a feasible monitoring strategy, which maintains a student's reflective activity, would be her (c) functional metacognitive behavior monitoring. In her literary elaborations the latter condition becomes met when a student outlines in her literary expressions of her recent daily behavioral moment (of her completed record) through her appraisals and attributions or through her other internalized views related to her behavioral recourses, strives, goals, or to other internal matters and in relation to other daily challenges in behavior management. The first attribution style applies when the record is a line of a short interval of one's daily time; the second attribution style applies when the record is a peaked or diffuse (for example generalized without reference to a certain date) graph and divergent from general sleep–awake rhythm without a reference to the specific time and/or daily behavioral activities. The third attribution style applies when the record fluctuates at least slightly as two separate peaks in one's identified behavioral load. They are categorized as two or three separate broad dimensions of behavior monitoring regarding the students' diverse reflective skills, depending on the goal of the empirical analysis, for example: diffuse/dualistic or formal/reflective recording and metacognitive behavior monitoring attribution styles.

The second main psychological dimension in analyses was: (2) the vitality of a student's metacognitive behavior monitoring is the main psychological research construct, as directly discernible and categorized by the researcher from the previous empirical measurement device. A student's recording technique, as her general feature and recording strategy for this device, indicates the degree of her monitoring vitality and intensity of evaluation of daily behavior. A student's completed record can be interrupted as a continuous daily activity and focused only on a specific internal or external problem, tacitly or overtly arising for the student. Directly from the ontological subject–object dualism and from general dualistic psychological categorizations of the locus and the nature of behavior control (for example, state and action anxiety) the classified categories are: The researcher can classify a student's tacit attribution in her recording as the most dominant behavioral tendency, as either (i) an emotion focused or (ii) an external load focused or (iii) both. The two former behavioral tendencies in monitoring can collapse or impair their reflective doing as self-regulated contextual learning activities. In the recordings, the latter manifests as individually assessed and recorded (tensed space–time, thus comprising reflection of individual inherent emotions and overt activities required to be concurrently managed) rhythmic of individual daily behavior activities without attributing it to a specific external or internal load. This non-dualistic tendency can be sufficiently active in a student's daily rhythmic, in fostering her management of

contextually emergent and appraised varying external or internal loads. In this case, the student's broad reflection is not impaired, which indicates her strong mindfulness stance in problem solving.

Closely related to the vitality level of a student's behavior recording is an index of: (3) the nature of a student's literary behavioral attributions and ascription of her contextual behaviors. If the approach would be explanatory, contrary to this project, the holistic view of the human recent and present behaviors' aspect in behavior monitoring would require extensive CBT conceptualization. In descriptive purposes, here it is sufficient from a critical realist position to practically classify the students' attribution ways as styles as to how they tacitly or consciously conceive their behavioral management related to sudden increases and decreases in arousal and stress load in contextual behavior. The students' literary expressions could be (a) omitted or general without a reference to the behavioral context in daily rhythmic, (b) emotionally initiated and evaluated, (c) action orientated and initiated (naïve realism), (d) metacognitively by subjective written expressions and delineations elaborated as internalized inner speeches for planning behavioral ways and strategies to manage internal needs, aptitudes, and difficulties and referenced contextual environmental behavioral stimuli and their challenges.

3.6.2 From the behavior monitoring approach to derived measures for pre- and post-test research setting

The only basis for the construction of empirical measurements is the practitioner's behavior assessment of the students' learning behaviors (primarily through classroom observation) and learning outcomes in psychology studies. The devised metacognitive behavior monitoring technique has no direct psychological, theoretical or methodological standpoint thus for example it departs from specific discourse analysis positions in its critical realist basic tenets. In order to seek validation of the practitioner's assessment of the students' behaviors the behavior monitoring means turned out to be adequate because they also addressed a student's metacognitive behavioral realms as is required in order not to lapse into theoretic dualist research positions that directly exclude the practitioner's emancipatory-oriented practical position as necessary in scaffolding a student's daily learning.

It is worth noticing that the students' recordings and attributions in completed contextual behavior monitoring are metacognitive and not cognitive and dualist, for example in choosing and taking perspectives to one's recording of one's recent daily behaviors. The recording means directly bring to a student's active scrutiny the strengths and deficiencies of her metacognitive behavioral patterns and also her behavioral competencies which is also the initial CBT theoretical non-dual stance in clinical psychotherapeutic practice. The students' recording devices were categorized via the practitioner's empathically derived criteria on how divergent students would be able to ascribe and appraise their recent real contextual behavior management in its main non-dual–dual demarcation approach. This research setting is sufficient to meet the deepened descriptive research objectives. The practitioner can thus attain a deep psychological description of a student's behaviors in the metacognitive behavioral realm, and how a student's metacognitive conceptualization addresses her behavioral features and antecedent behavioral causes to these current and future-oriented behaviors. The research objective is to attain a deep psychological conceptualization of a student's functional and dysfunctional metabeliefs and to access all of her capacities in

metacognitive competencies that are supposed to be enhanced via the completion of studies in the psychology course.

Monitoring of one's present behaviors is a pivotal aspect in metacognitive problem solving as Pintrich (2000) notes in focusing on self-regulated behaviors. But by sticking with his theory-informed flawed dualist behavior monitoring position and by introducing specific theoretic criteria to the monitoring, the behavior monitoring itself becomes detached and alienated from one's contextual behaviors. Pintrich does not note the loss of contextual behavior occurring in his theoretic formal position to individual self-regulated behaviors (ibid., p. 472), he does not attempt to find solutions for his suggestion to implement behavior monitoring in a student's real daily life and learning practice. This is the practitioner's attempt in this research and teaching practice via the introduction of CBT tools in guiding a student psychoeducatively to engage in an identification and revision of her daily real behavior management and its recording.

With regards to the adequate and useable assessment tools for student learning behavior (behavioral dispositions and deficits), this project is a pioneering work on individual self-monitoring and its empirical measuring outside of psychotherapeutic settings. The tool for measuring students' behavioral monitoring and its recording on a daily basis is arbitrary in its categories to which there are not to be found any theoretic and earlier research work on how to introduce a critical realist and CBT-informed multilayered reflective behavioral position on these behavior monitoring recording means. Implementations of these records require the practitioner's assessment of a student's learning and on general CBT conceptualization (more specifically, at least on two behavioral modes of self-reflection and on task performance reflection or cognitive to goal-orientated reflection) as the ways a student ascribes and appraises her recent daily behavior and her individual problem-solving activities. In preliminary tests, the usefulness of these recording methodologies in many different student groups and the measurement designs in tailored recording protocols proved to be executable, and they provided the students with an adequate introduction to their studies into human nature as contextually managed human behaviors.

The devised behavior monitoring methods entail additional practical advantages when incorporated into a student's daily living and learning. If a student does not suffer from anxiety disorders or other significant cognitive and behavioral disabilities, these methods can promote her self-monitoring to contextually arisen and metacognitively appraised issues in her real rhythmic social life. A student who successfully completes the recording on a daily basis can view basic fluctuations as a drawn curve with specific momentary peaks. This would provide her with knowledge of her daily load and its significance in her daily life, and this would provide incentives for her to devise the application of more accurate deployment of cognitive behavioral interventions in developing and implementing tailored self-monitoring and recording means to manage specific learning actions. Of these there were provided some general descriptions in the course's learning materials.

The starting point of constructing measurement tools in pre- and post-test settings must be a general and functional one in targeting her daily activity management in order to expand her focus on her behavior and daily activity chains and to enrich her understanding of her real daily social rhythmics without direct lapses into naïve realism or abstract psychological theoretic conceptualizations. The student's own behavioral realm might become the core in her learning about human nature in psychology and the student could see more clearly how individual behavioral management varies along with

individual behavioral recourses in the real daily course of individual stress-behavior management.

3.6.3 Analysis methods

Descriptive analysis of distributions and contingency tables are sufficient for subgroup classification of the students' inherent reflective problem-solving skills and competencies in the pre- and post-test setting. It is crucial to assess whether this teaching program is optimally stressful for all the students and if it suits their divergent behavioral competencies. In addition, it is important to obtain empirical outcomes of the students' changes in basic behavior recording competencies onto which changes this psychology course might have an impact. The practitioner's general hypothesis would be that the psychology course might support the students' improvement of their deep learning and basic learning skills and might support the student's pre-adulthood individual development and accelerate all educational practices in nursing to move on with self-regulated and authentic realms to human well-being.

3.7 Empirical outcomes: the stability and behavioral realm of the students' behavior-monitoring recording devices

Empirical analyses are presented in two behavioral competence realms: the stability of the students' orientation to their behavior monitoring recording and the vitality or non-dual behavior metacognitive monitoring.

3.7.1 Domain: pre- and post-test changes in the students' metacognitive behavior monitoring

The state and the stability of the students' monitoring, attribution and ascriptions of their contextual behaviors in pre-formulated behavioral categories are shown in Table 2. The major result is that a vast divergence in the students' appraisals and monitoring by recording their daily behaviors emerged and remained. Some students did not apply the monitoring device or they used it as an abstract flawed generalization. Other students improved their recording and searched for additional elaborated behavioral attributions. Yet another group of students metacognitively attributed their daily behavior and showed remarkable progress in their recording and behavioral appraisals, which is an extremely positive outcome. By contrast, the results show that almost a third of the students experienced difficulties in this monitoring recording. Some difficulties could be due to the students' strong tendencies to learn about general normative issues of nursing which manifests in this course as a shedding of one's individuality as the core realm to learn. Together with the students' difficulties in completing the recording device, the students also fell into crucial pitfalls when attributing their contextual behaviors to only literary dualist attributions; this indicated preclusions to the initiation of individual deep learning activities under the students' stressful daily living and learning conditions.

In addition to the vast and stable divergence of the students' behavior recording capabilities another meaningful outcome was that in the post-test measures behavior monitoring records were more contextual and the students' more often reappraised and ascribed their daily behavior reflectively and through non-dual literary psychological delineations, as Table 2 and Table 3 indicate. At the end of the teaching program (Table 2)

16% of the students in group A1 and 28% in group A2 made metacognitive literary expressions compared with that at the beginning of the course. It connotes the fact that these students' metacognitive skills were relatively developed, or at least they were more motivated to search their behavior at the end of the course than at the beginning. Either way, both of these facts mean that at the end of the course the students possessed more facilities for reflective problem solving without sudden collapses in spontaneous behavior monitoring and flawed reasoning. From this position it is more likely that these students would be enabled to view and to attribute continuously their behavior in terms of reflective and non-dualist literary appraisals.

According to the results, more than a third of the students experienced either great difficulty in daily monitoring or demonstrated lapses in self-reflection (reflecting of one's emotions) or reflecting on formalized environmental things, as disjointed from one's current on-task performance activities. Only a few students demonstrated reflective competencies in the recording, and that outcome shows that the pre-adulthood students' encounter great social challenges to create and establish a strong action orientation under new and constrained social living conditions.

Table 2. Graphic presentation and the nature of the curve in two learning groups (Groups A1 and A2); students' frequencies and percents

Categories in students' monitoring recording	Group A1 start %	Group A1 end %	Group A2 start %	Group A2 end %
1. No graphic presentation	(4) 16,0	(0) 0,0	(0) 0,0	(0) 0,0
2. Diffuse presentation, no time, no place in attributing contextual meaning	(6) 24,0	(3)12,0	(10)40,0	(4)16,0
3. Graphic presentation + expressions of emotional load as individual punctual living context and identified problems to manage in emotions; no expressions of the applied strategy in contextual management	(12) 48,0	(7) 28,0	(15)60,0	(6)24,0
4. Graphic presentation + evaluations of behavioral load at the level of individual contextually conceived actions; no specific literary emotional expressions separate from individual strategic behavior	(3) 12,0	(11) 44,0	(0) 0,0	(8) 32,0
5. Graphic presentation + holistic evaluation at the level of subjective metareflection	(0) 0,0	(4) 16,0	(0) 0,0	(7) 28,0
Total	(25) 100	(25) 100	(25)100	(25) 100

The achieved post-test results are extremely positive in comparison with the recordings at the beginning of the course. Even if the results were partially due to the students' increased familiarity with this monitoring recording technique, the recording method was useful because it provided the practitioner with data for the assessment of the students' behaviors and of the behavioral challenges they were facing. It was obvious that a student's improved competency for recording on a daily contextual basis did not in itself connote her developed metacognitive, mindfulness behavioral competencies. On the contrary, when taking into account the students' real learning behavior, based on the teacher's observation, recordings and enquiries, the students' self-regulated learning in academic studies remained surface learning (either as strategic style or indiscriminate) in the vast majority of the students throughout the course. The majority of the students

were not able to perform continuous metacognitive behavior monitoring reflectively as a vital and reflective spontaneous daily activity. A few students were not motivated for, or were not successful in, any metacognitive behavior monitoring and attributing of their real behaviors, that situation probably was caused by collapses of their daily on-task performance activities in learning and other doings and thus indicating their difficulties

Table 3. The stability and direction of the occurred changes on the vitality of recording (the students' frequencies) between pre-test and post-test settings

	Group A1	Group A2
insufficient completion of the first or of second record	4	6
accuracy of the monitoring: decreased	8	3
" " remained stable	7	5
" " increased	10	17
Total	29	31

in smooth behavior monitoring. As Table 3 indicates, similar changes occurred in both researched student groups: some of the students expressed strong metacognitive and internalized conceptualizations of their contextual behaviors when taking into account that in the other students these metacognitive conceptualizations also decreased in both the researched student groups.

3.7.2 Domain: the vitality of the students' literary appraisals of their contextual behavior

The results in Table 4a and Table 4b were obtained by a deeper 'discourse' analysis, but the main reframe of the practitioner's grading is not specifically addressed here. The main thing is that a student's literary appraisal is a real and true indication of her real behavior in no need of theorizing of its adequacy. The teacher's scoring of the students' literary appraisals was based primarily on his assessment of the students' behaviors and resident in their behavior internal evaluative competences of the direct nature of their literary appraisals, as conducted in critical realist philosophy about the judgment language form (see Bhaskar, 1993, pp. 214–224).

The results in Tables 2, 3 and 4b show that some students significantly demonstrated their improved literary expressions in their post-test measurements in comparison to their pre-test outcomes. By contrast, the students generally demonstrated more shortcomings in reflective non-dualist literary appraisals. It seems that some students retained their emotional reactions at first and were unable to address their emotional contents reflectively in their internalized conceptualizations. Some students seemed to move directly to naïve realism in their empiricist orientations and to a pronounced action orientation in managing the most acute and subjectively perceived and interpreted environmental challenges. It was not analyzed and evaluated in depth whether this attribution was more related to on-task performance or safety-seeking (for example, keeping oneself occupied) behaviors. The students' graphs and their attributions were not categorized specifically but the attributions frequently were from their experienced specific recent daily problem-solving moments, such as presenting in class, meeting a friend, confronting a sudden problem. This could signify that a student took her perceived challenges as given and stable to be managed by a given prefixed behavioral style. Individual concentration on a given moment does not necessarily exclude the students' broader reflecting on their behavior but could often cause difficulties to move

beyond the acute challenges into deeper real underlying structures in a more strategic behavioral way. Although the recording test was simple to manage in an individually selected time it suggests deficient skills in the students' real metacognitive behavior competencies in managing academic studying efficiently in the learning and teaching practices.

For educational purposes, the main result demonstrated that the students' attribution improved slightly by the end of the course. As Table 2 shows, a third of the students either lapsed into self-reflective appraisals or did not seek to appraise their behavior at all on a contextual basis while restricting their orientation to superficial action orientation. They thus distanced themselves from their tensed daily rhythmic. All of these students daily face both emotional stress and sudden stressful conditions to be separately confronted in individual behavioral management, without a more persistent strategy in that behavior this would represent a continuous disruption in their reflective doing and their academic studies. The results in Table 3 indicate that this course was not feasible for all the students in the realm of academic learning. However, the attained positive results are most important and positive in teaching with this program and in establishment of basic educational templates for the students' self-regulated doing and learning.

Table 4a. The divergent attributions of the students' real contextual behaviors at the end in Groups A1 and A2 (the students' frequencies)

The students' attributions on the rise of action load (located graphed part):

	Group A1	Group A2
a. no graphic, or no written explanation, or emotional description	5	9
b. actualist delineation of the nature of executed or of faced overt activity	9	10
c. either generally anti-dualist and/or reflective or internalized reflective	11	7
Total	25	25

Table 4b. The realm of the students' reflection and the dominance of emotional reflection (the students' frequencies)

	Group A1		Group A2	
	pre-test	post-test	pre-test	post-test
a. no literary emotional description expressed	7	1	10	4
b. not reflected but literally attributed emotional loads	5	6	15	14
c. reflected challenge in individual contextual on-task performance	8	13	0	7
Total	20	20	25	25

To improve the students' deep learning in their constrained social life is a demanding educational challenge and it is dealt with most optimally in the students' psychology studies. At the end of the program, the students still diverged drastically in basic behavioral skills and competencies. As Table 3 shows, the dominant teaching practices and innovations for developing these practices in a curriculum-based study program and teaching in large groups tend to support surface learning activities.

4. VALIDATION OF THE EMPIRICAL RESULTS

In the critical realistic approach to holistic causality, evaluation of the performed teaching practice and its concurrent research does not emerge as a strict specific thing to be described and/or explained. All the practitioner's research and teaching ventures require empirical outcomes and their specific evaluation, whether the empirical outcomes affirm and are in favor of the practitioner's observational and other data of the researched

objectives. At first, it is pondered how the critical realist issue-driven position is well grounded in this teaching practice of basic psychology in the search of inventing collaborative means in fostering students' metacognitive progress in non-dual problem solving and in their gain of reflective behavioral skills and competencies for vocational and personal life. Then it becomes shown in wide descriptive conceptualizations of the social cube reframe of the educational practice how the groundwork into emancipatory-oriented psychological research was successful in laying practical templates and grounds for the practitioner's direct knowing of the students' real behaviors. In any case, the students' behavior requires deeper psychological explanations in the transformative social practice reframe in order to reach at collaborative teaching practices, if possible.

4.1 The students' self-regulated behaviors and learning competencies stay divergent

Teaching practices in the students' courses were predominantly directed by tight instructive teaching practices based on traditional idealist nursing values to maintain every patient's inherent sense by strong emotionally warm interactive discourses. In any case, the main outcomes demonstrate that the move into collaborative working via new means, such as coaching and increased five moment feedback to each student's self-regulated learning, gained more foothold when the traditional learning objectives were satisfactorily attained and were even better than via the possible common instructive teaching methods.

The main result indicated that the students' divergence in their learning activities, learning skills and competencies was great and in a large part was insufficient even after completion of very successful studies in the introductory psychology course. In particular, some of the students' dual reflecting was concluded to manifest in broken and even uncompleted behavioral monitoring records of daily load and its peaks, and in omitted or non-dual attributions and ascriptions of one's recent behavioral moments. Some of the students already demonstrated, at least latently, rather advanced metacognitive behavioral competencies but the course's execution was not optimal even for them. This was so because all along the teaching practice in psychology course tacitly used instructive teaching means and main teacher–student dualist discourses despite the practitioner's aims to do collaborative teaching using the implemented scaffolds to self-regulated learning. By passive learning activities, by strong expectations to have direct instruction of what had to be learned, and by emotionally driven arguments these students at least tacitly determined the teaching practice and kept the course's dominant practice in instructive discourse patterns. To these learning patterns and dominant expectations to instructive teaching the students got direct reaffirmation from dualistically expressed and outlined official educational programs.

The psychology course also comprised rich metacognitive conceptualizations in learning materials, but the students were not able to deploy them in the attributions of their daily behaviors. The students had difficulties in describing, by literary metacognitive subjective and internalized conceptualizations, their real challenging behavioral activities as behavioral moments that emerged in their contextual behaviors as their identified daily moments. Theoretically in CBT and critical realist philosophical perspectives, such as individual knowing through and via referential detachment, activities to know of general

world mechanisms and regularities in one's individual present world approaches is the practitioner's approach to construction of behavior monitoring devices as well as to a student's deploying them in her real life. Philosophical notion to referential detachment as the core to individual human knowing becomes dealt with throughout the report in delineations in the implementation of behavior monitoring devices.

Obviously, a student's difficulty in reflective non-dual monitoring lies in elaborations and for literary delineations of her internal mental and behaviorally relevant activities. This is more difficult to confront than an itemized mental or external behavioral challenge, therefore empirical outcomes on the students' behavior monitoring records provided no specific information on a student's real metacognitive self-regulative capacities or reflective competencies at a psychological functional level. Nevertheless, the records demonstrate key difficulties and manifest disruptions in a student's traversing all of her disparately identified behavioral determinants. Sudden mental loads, separate and unmanageable by a person's normal behavioral problem-solving self-regulated activities, could represent a latent recourse to learning by attending to ordinary lectures or to procrastination in daily learning activities. For the students with a great number of disruptions to their behavior monitoring, innovative learning and other activities, such as peer tutoring, rich learning materials provided via internet and supportive instructions for a student's learning transpire to support their surface learning. A student's disjointed behavior monitoring activity as her real behavior suggests that the general educational programs do not encourage deep learning, which is consistent with the teacher's initial psycho-sociological argumentation for setting up this research objective.

The results in Table 5 indicate that the students' most common, rigid and arbitrary strategy to study psychology was to attend lessons as if attendance was compulsory. The results show that there is a weak positive and nonlinear correlation between the frequency of attendance in classroom teaching and the teacher's evaluations of the students' learning outcomes. So the students' strategy was frequently diffuse or nonexistent and different. Generally the students appeared either to attend lessons (without preoperational homework) or to attempt unsuccessfully to study independently at home. The students were unable to integrate their home and classroom learning; albeit

Table 5. The frequency of students' physical attendance at lessons and its relationship to the teacher's evaluations of a student's learning outcomes: students' frequencies in group A1 and / group A2

	Assessed learning outcome of a student					
Attendance at classroom teaching	unac-cep-table	fair	good	very good	excellent	total
less than 30 percent	2 / 0	0 / 0	0 / 1	0 / 1	0 / 0	2 / 2
33-66%, half of the lessons	1 / 1	5 / 4	4 / 5	1 / 1	0 / 0	11 / 11
67-82% frequently	1 / 3	2 / 0	6 / 0	1 / 2	1 / 1	11 / 6
almost continuous	0 / 0	0 / 0	1 / 3	1 / 3	3 / 0	5 / 6
total	4 / 4	7 / 4	11 / 9	3 / 7	4 / 1	29 / 25

that all of the practitioner-teacher's ventures aimed for that objective in order to gain positive learning assessments in the course. The results in Table 5 indicate that there are

students with insufficient skills in self-regulated learning whose learning outcomes are mediocre or moderate despite their continuous classroom attendance. Therefore for a deep understanding of learning issues in the constructivist approach a student's manifest dedication to innovative home studying seemed to be a necessary precondition for metacognitive learning.

The results in Table 5 demonstrate the extreme divergence in the students' actual learning styles and skills. In the teaching of psychology the divergence is not possible to address through ordinary lecturing means, as for example by improving specific instructive teaching methods. In these educational environments instructive means teaching directly and signifies an abandonment of self-regulated human behavior as the basis for, and behavioral tensed domain of, psychological adult and vocational studies.

The first empirical research project showed the level and the scope of the students' development of their basic self-reflective skills. In particular, neither this psychology course nor probably any other course in the curriculum-based learning program enabled acceptable results in the crucial domain of a student's reflective problem-solving behavior or self-regulated learning behavior. It is necessary to note that the most general social learning practices reinforced and supported the students' surface learning, either manifestly or tacitly. Obviously as the dominant surface learning scaffolds, they absented metacognitive self-regulated learning, or learning under constant uncertainties and their reflective management in individual behavior.

4.2 The refined self-regulated scaffolds to teaching psychology worked optimally

The teaching project of the basic psychology course prevailed and was headed by three contradictory different teaching aims. First, it enabled the students' studies in the original and more common dualist teaching practices and teaching of nomothetic psychological dualist approaches to modern vocational practice. Second, it introduced, and by critical realist philosophical elaborations, refined the most adequate and practically executable scaffolds to teaching in enhancing the students' deep or self-regulated learning and of their research of construction of behavior monitoring records for measuring the empirical outcomes of the practical implementation in teaching. Third, the scaffolds and teaching discourses, such as coaching and real-time feedback of the students' learning outcomes and of a student's potentially workable learning activities, were guided beyond modern psychological theoretic knowledge and into the invigoration of a student's metacognitive conceptualization of contextual psychological uncertainty and anxiety management behavioral issues. In the pre- and post-test setting the empirical results in the students' behavior monitoring records demonstrated optimal efficiency of the imported scaffolds and their practical execution to the totally divergent students' learning in all three aforementioned realms of individual learning (learning of dualist theoretic psychological concepts, etc., learning by one's self-regulated and strategically managed learning, learning metacognitively of human contextually arisen behaviors).

The general educational arrangements in the psychology studies did not restrict the students' own learning strategies. These objectives stressed that a student needs to choose her own learning strategies from various options provided in the teaching scaffolds. The learning materials were affirmed as essential. They were gradually presented to students via software and attuned to the process of the continuous classroom teaching. This

instruction supported a student to do preparatory studies of learning materials in order to familiarize her with individual preconceptions and abilities to evaluate attained subjective learning outcomes in the classroom for each course's phases (orientation to both conceptual and real life psychological issues/acquiring rich conceptualizations, viewpoints and their evaluations, embarking on individual applications on human well-being and developmental individual matters).

It appeared that the majority of the students were motivated to perform the designed optional noncompulsory recording tasks in behavior monitoring devices. The recording tasks reinforced the students' studying activities in a self-regulated learning manner by focusing on the individual's own responsibility taking. In spite of clear instructions, the students did not appear to be acutely aware whether the teacher's guided recording design was the requirement for a pass mark. Generally, the students were not guided to make strategic decisions on such issues regarding their most preferable specific learning activities either in this course or in all their other courses. Classroom learning in this course was introduced as voluntary for the students and scaffolds for distance learning were presented as specific practitioner's written learning materials requiring the students' own perspective and initiative. The scaffolds were set up for individual learning, such as individual search of learning materials and active questioning of the learning materials by provided exercises, individually constructed peer-relations as templates for learning and actively seeking advice from the teacher regarding individually identified learning obstacles in studies. When the students generally preferred to rely on the normative guides of this educational organization they often persisted with their usual superficial habits in homework that did not make possible their text comprehension in deep and flexible psychological issues and conceptual perspectives.

In the enhancement of the two last mentioned learning strategies and styles the project was not optimally efficient or adequate because the students' learning behaviors seemed to prevail as surface learning. The single course into 'constructive psychological knowledge' and knowledge creation and application became insufficiently fulfilled without any significant positive or negative impacts on the students' learning dispositions. Skills or other dualist psychological perspectives to improve the students' deep learning are not workable when the majority of students' basic skills in their strategically managed learning activities are widely insufficient. In this educational program to nursing studies, skills-based teaching projects seem to be insufficient in the enhancement of their deep behavioral competencies in uncertainty management because the majority of students lack many social and problem-solving skills and metacognitive recourses. As indicated by Table 5's summary of the students' attendance in classroom teaching and their summative learning outcomes and the relation between the two dimensions, students' weaknesses in their learning skills was due to their basic strategy to learn psychology which was either inadequate and/or was totally lacking, or was orientated to normative learning through the practitioner-teacher's classroom instruction. These facts show that the students' learning was strongly determined by the social structures of the institution and that any modern (theoretic or method driven) position to improve teaching would not be positive. By contrast, the project's outcome showed that the executed psychology course turned out to be in very bad need of the enhancement of students' individual and vocational development.

In this descriptive research there was a lack of adequate sociological or psychological evaluation criteria into critical evaluation and assessment of the attained empirical

outcomes of the research project and self-regulated scaffolding of teaching the students about human nature. It is worth recalling that even the most advanced self-regulated psychological conceptual realms were too abstract and conceptually sophisticated in their dualist and nomothetic theorizations which are not possible to put to teaching and educational objectives in strict and explicit terms. However, the specifically ordered scaffolds to enable the divergent students' learning were highly justified by contemporary educational psychological research and scaffolds were implemented in a way that did not hamper the students' basic learning in their studies. The implemented teaching scaffolds were reaffirmed and evaluated to be workable and gave consistence to the deep learning issues about human nature. The implementation of the empirical emancipatory-oriented research about the workability and feasibility of teaching scaffolds and of behavior monitoring recording techniques provided highly accurate and scientifically valid data of the divergent students' learning orientations and competencies.

4.3 The practitioner's encounter with a dead end in further revisions of the psychology course

The students' vast divergence in their entirely disparate learning skills and behavioral competencies to manage their daily rhythmics were adequately described in psychological terms, but practical programs and implementations of this teaching practice in further projects would necessarily require that the practitioner attain an adequate and deeper psychological explanation of the students' divergent real-learning activities. The following subsection delineates how difficult it is for the practitioner in these educational environments.

The practitioner's strive to stay within the social cube realm of open social totality for accomplishing sociological descriptions or even sociological explanations of the social educational life of the multifaceted holistic causalities at work did not provide the practitioner with practical tools to enhance a student's learning and daily well-being. The need for the practitioner to stay within the psychological realm was attained and in the second research project the first steps to having deeper psychological explanations of the students' weak learning and difficulties in their daily behavior management were taken.

The students' behavior monitoring records were primarily focused on the challenging behavioral situations in a student's daily life. Monitoring this behavior metacognitively requires from a student a strong behavioral tendency to manage behaviorally daily individual activities. There do not appear to be any exact measurement devices that would be efficient in the assessment of the improvements in a student's self-regulated learning in the realm of her daily strategy management activities. Only the practitioner' questioning and focused re-questioning in each classroom coaching session clearly indicated that few of the students were able to comprehend psychological texts at home, whereas the majority of the students only focused on their other ongoing studies or refrained from any strategic learning in this course. In addition, the students' other essential and specific self-regulated learning activities did not significantly improve; generally, the students could not explain the difficulties as their own behavior activities, they did not seek the teacher's advice, they did not improve their literary expression skills on their understanding of psychological texts, they did not exhibit motivated and active learning behavior while working in teams during lessons, they did not engage in

dialogic discourses or participate in peer-supervision of the course's learning issues or tasks, and so on.

The vast pre-research in this empirical project on the students' metacognitive competencies (Puttonen, 2002) already described the vast discrepancy between the students' self-regulated learning competencies. Hence this research to deepen a behavior monitoring position was reliable and valid enough for the descriptions of the research and teaching objectives and obstacles. The practitioner, within his competence to understand rich contemporary self-regulated psychologies and his experience of inventing tailored monitoring records in psychotherapeutic practice, scored variables in the level of, and the vitality of, metacognitive behavior monitoring dispositions. The empirical outcomes in behavior monitoring devices were also consistent with the practitioner's other observational and written data on the students' real daily learning behaviors.

It is noteworthy that the construed and implemented scaffolds (e.g. rich learning materials, constructive learning process, coaching, and the teacher's assessment of a student's learning outcomes as competencies to conceptualize contextual behavioral issues) were the most innovative and effective teaching procedures and methodologies. There is no adequate connected research within real social contexts undertaken in contemporary education on their utility and feasibility. These scaffolds successfully targeted students' self-regulated learning. This research project demonstrated the vast diversity of the students' learning and, especially, self-regulated learning dispositions in the essential domain of (metacognitive) behavior monitoring. The extremely vast diversity in the students' behavioral skills and competencies demonstrated why the implemented scaffolds in teaching did not foster or enhance self-regulated learning as required for the optimal results.

In addition to the fact that the students possessed divergent learning skills and behavioral dispositions the empirical results of the basic self-monitoring research showed that the students tacitly or purposefully controlled their behavior according to norms and actualist laws (e.g. laws of daily occurrences of constant conjunctions), which are not laws as real ontological things and relations and worthy or necessary to be taken into account in meta critical doing and being. At its core, the students' behaviors for obtaining a positive reward or of avoiding conflicts disrupted their broader and deeper reflections on individual behavioral things. This was the situation related to the great majority of the students, and it also applied to the students who were able to continue their studies in the sense of self-regulated learning but not having practical templates and real incentives to engage in that learning. The students did not embark on developing their innovative self-regulated learning activities because their studies at home and learning during lessons did not provide options for dynamic interactive and other templates as was required for learning reflectively and for self-regulated learning at a metacognitive level. Similarly the practitioner-teacher's coaching as the main and optimal teaching methodology through its impaired practical execution could not support the students in validations of their real learning outcomes and their performed learning activities.

The problem needing a solution is that this empirical research had little explanatory power for the students' relatively deficient self-regulated learning. To create a tailored scaffolding of the students' learning, deeper explanations by the researcher's quantum reflective leaps are necessarily required. The explanation of behavioral and social mechanisms with adequate theoretic psychological concepts and the use of contemporary empirical research would warrant empirical programs and their implementation that

would reinforce and guide more specific feasible learning activities in their daily learning and this would manifest in their abolishment of surface learning activities.

This latter endeavor requires the implementation of CBT practices in teaching. Noteworthy is that social surface learning and instructive teaching practices might be so dominant and causally efficacious that they themselves maintain these educational practices by concurrently obstructing a student's reflexive and free floating deep learning. This further implementation in teaching and empirical research would support a student's individual pre-adulthood development and vocational nursing studies. If this is ignored in psychology studies the traditional and formal surface teaching practice continues with its efficient maintenance mechanisms in all realms of transformative social practice. Therefore for empowering the students to progress their learning activities from surface learning to deep learning activities they require highly validated conceptions of their behavioral competencies as deficient or robust as they are. If the students become encouraged in their own learning to improve their reflective skills and competencies they might be able to behaviorally distance themselves from the surface learning activities while concurrently embarking on deep intensive learning activities.

At least 33% of the students in each measured teaching group were mediocre (dualist) in their behavior monitoring dispositions; thus they reflected tacitly either on their despairing moods or only on external things to which emotional loads or external demands they only seemed to adapt passively not seeing ways to change their external things. In this teaching execution the vast majority of the students in their restricted metacognitive behavior monitoring were unable to improve their learning at the self-regulated level or their problem-solving behaviors. Their learning behaviors often manifested as mindlessness behaviors, with no openness to novelty, no alertness to distinction, no sensitivity to different contexts, no awareness of multiple perspectives, no orientation to the present, according to Langer's (1997) concept of mindfulness. The students' tacit thinking seemed to fluctuate without their spontaneous metacognitive control. This might have caused continuous despairs in thoughts possibly needing specific activities in the realm of restricted self-reflection that might have interrupted their current on-task performance activities in their daily learning.

4.4 The need for additional scaffolding by application of CBT tools

As was demonstrated in the pre- and post-test research outcomes, it is necessary to bear in mind that a student's disrupted and inefficient learning behaviors remained throughout the course. If at least half of the students in large teaching groups experienced behavioral problems, these kinds of behavioral problems are not manageable by minimal and purely theoretical refinement of teaching practices. These behavioral deficiencies reside in the core of a student's behavioral control and her anxiety management, and the behavioral problems could either refer to a student's anxiety behavioral problems or to her lagging development in her pre-adulthood along with limitations in basic and broad social problem-solving skills, or both. This requires additional research work and scaffolding to move the students from attending instruction and its learning to self-regulated learning, to coaching and into a flexible application of methods and scaffolds in their learning. Moreover, the students' behavioral pitfalls in academic studies also resided in the realm of their daily behavior management, as demonstrated. The students frequently exhibited a number of behavioral symptoms and daily problems, such as sleep problems, motivational problems, fears of specific environmental and other stimuli, somatic symptoms and so on, and some students might

have suffered from latent or clinically relevant anxiety disorders, for example from pathological worries or specific phobias. Their symptomatic behaviors disrupted and impaired their skills' acquirement in self-regulated learning too and the outcome in learning of abstract concepts and epistemological concepts and norms is not avoidable in their daily behaviors and it impairs their metacognitve activities on reflecting on dynamic multilayered real things of the world.

The optimal approach to the enhancement of daily self-regulated learning behaviors was the self-monitoring and recording procedure in spite of its restrictedness of contradictory behavioral modalities because it was the only effective method in assisting each student with diverging learning activities to validate her current learning behavior in curriculum-based large teaching groups. Other options for enhancing students' self-regulated learning, for example re-arrangements in the general educational management were not feasible or well informed. As specific self-regulated theory or method-driven empirical programs they would not have enhanced the students' deep learning; rather they might have been either pernicious or had nugatory impact, at least on the students of certain student subgroups.

The outcomes of the first empirical descriptive research indicated a considerable deficiency in a student's behavioral monitoring in attending to right things (Hamilton & Ingram, 2001) in classroom learning or to all other failures in numerous crucial learning activities in self-regulated academic learning, for example poor text comprehension (Maki, 1998). A student's poor text comprehension is a crucial pitfall. Furthermore, insufficient competence in monitoring daily behavior impairs text comprehension, as a great number of researchers according to Otero's (1998) elaboration argue. Monitoring individual comprehension requires two components: evaluation and regulation of comprehension (ibid., p. 145). The practitioner-teacher through his observations of the students' classroom behavior assessed these crucial pitfalls in the student's self-regulated learning and frequent procrastination behaviors.

Combined with the teacher’s evaluations of the students' learning activities and their pitfalls, such as their procrastinating behaviors, this first research project demonstrated that the students' learning abilities were insufficient in a number of learning activities and learning domains. The research approach of concentrating on a psychological stress conceptualization appeared to be insufficient. It suggested either theory- or method-driven research, with the aim of describing the behavior or continuance of the broad behavior-monitoring stance. This first research approach was omitted here although it is a common approach (see, for example, Connor-Smith et al., 2000) because of its inevitable turn to theoretic measures of specific theory-driven behavioral constructs, for example as in measuring problem-solving components as buffers to depression (Frye and Goodman, 2000) and the construction of firm specific methodological scaffolds to the students' learning and empirical attempts to change the students' often impaired problem solving.

The behavior monitoring stance starts from the practitioner-teacher’s practical notion that the sudden rise of emotional load and dysfunctional and even intrusive thoughts on a student could prevent deeper learning and all other daily problem-solving activities. Reflective activities in a student's learning are crucial.. The students frequently and generally could not comprehend learning materials. They were unable to evaluate their learning strategies and devise them for meeting effective learning demands and overcoming learning obstacles. Empirical results were similar in both teaching groups: the same vast discrepancy and basic deficiency in the students' learning and behavioral competencies existed and persisted.

Theoretic conceptualizations of individual stress or of metacognitive problem-solving activities in pre-adults or in students in general, along with their dialectical accounts (see, for example, Pascual-Leone, 1987), are futile for seeking practical means to enhance this behavior. The only realm of an increased scaffolding of a student's learning are CBT theoretical elaborations on a student's learning and its enhancement where anxiety issues in individual behavior are individually and metacognitively confronted and managed in an open constrained (social) world for enabling an individual's metacognitive daily learning. The recourse to reformulate and explain the students' learning behaviors at a deeper psychological level is well grounded. Only by that means might it be possible to enhance self-regulated learning by construing new, targeted teaching interventions. This turn in teaching psychology is further researched in the second research project: whether it is practically applicable, justified, and feasible in the enhancement of individual self-regulated learning and all daily behaviors as required in this critical realist broad reframe.

The main conclusion regarding the empirical results was valid: improvement in the students' metacognitive behavior monitoring was generally positive and relatively substantial. Behavior monitoring techniques provided a more collaborative position to teaching in spite of its insufficient and rather rough implementation. It also provided a description in the realm of behavioral competencies and not skills. It thus provides a critical realist emancipatory position to teaching human psychology in introducing and even strengthening a student's metacognitive behavioral competencies and even more means for addressing their all functional and dysfunctional competencies for the practitioner's behavioral assessment and for their own scrutinizing and revision of their multiple to different tendencies-orientated behavioral patterns in all modality realms.

It is worth recalling that the modality approach of contradictory kinds into human behaviors does not emerge as theoretically valid at all in strongly empiricist educational practices. The deployed means of behavior monitoring require a deepened psychological explanation of the divergent students' learning behavioral patterns and their underlying behavioral and social mechanisms. This is the aim in the next research project; if it succeeds there might be means for scaffolding a student's daily reflexive learning so that self-regulated learning is not theoretic but a practical issue in one's confrontation of dualist world things. It seems that only minimal improvements of this scaffolding are possible to set up if rich theoretic psychologies into self-regulation become optimally utilized in this teaching of human psychology.

The attained improvements in the students' real learning behaviors do not occur on their own and spontaneously in the constrained and coercive educational practices. Self-regulated learning on one's spontaneous contextual 'out of the blue' activities is a novel critical realist position of which all dialectical modes in human reflective activities (MELDA) goes beyond the critical thinking of the Frankfurt school. In dialectical critical realist philosophy this is tantamount to the philosophical problem of edging on empiricist theory-driven problem solving and its concurrent experiential practices. In that approach to practice, the main problem could remain which is that these strengthened instrumentalist practices could abolish individual metacognitive problem-solving activities.

4.5 Re-evaluation of the students' behavioral problems via metacognitive behavior monitoring devices

In CBT theoretical understandings of human behavior and learning, the students'

behavioral problems are best conceived as disruptive metacognitive activities, resulting in avoidant and worrying behaviors. Thus it is logical to expect that students would lapse into surface learning and then a teacher would attempt to attune his or her instructive teaching for meeting the needs of the weakest students. Surface learning represents learning by perceiving, feeling and making abstract and often flawed generalizations whereas deep learning stands for a reflective and metacognitive search and evaluation of individual internal modes arising as cognitive representations in the mind. It requires behavioral competencies in a great number of relevant learning activities and domains, such as behavioral competencies for learning by specific dynamic learning activities, for example text comprehension, literary expression and conceptualization, strategy management and its continuous revision during studying activities, seeking advice for individual learning activities from the teacher, and other specific learning activities in different learning domains (e.g. literature, geometry, physics, psychology, sociology, microcomputer programming courses, nursing studies, geriatrics, etc.).

It is important to note that the students in large teaching and learning groups of about thirty students diverged in their learning activities (as was demonstrated in the preliminary survey) so that only a few students were able to continue with their self-regulated learning activities if required (as became clear and partially demonstrated, that was not encouraged in other concurrent courses). The advanced students did not personally benefit from these studies on human nature. The teacher had to concentrate on teaching and supporting the students in passive and insufficient learning activities in order to support the majority of the students' passing the course.

The key to the students' problems in self-regulated learning management was their homework failures; to solve this problem the students would require competence in text comprehension, strategy management, literary skills, seeking feedback on individual learning, without following precise norms for the learning objectives and so on. Of course, the subjectively managed difficulties, for example in weak attention and concentration in both distance and classroom learning, are directly related to the students' underdeveloped and dualistic behavior monitoring competencies. This antireflective, and in psychological terms, poorly internalized behavior monitoring and behavior attribution signifies direct or at least indirect disruptions in a student's on-task performance activities in daily rhythmic. The disrupted students' behaviors frequently appeared to be unconscious and they were not able to return smoothly and rapidly to focusing on the learning issues at hand. Frequent instructions to concentrate on subjective learning issues did not have a place in the practitioner's intentions to maintain teaching on the deep learning issues through coaching.

1 Ontological monovalence and ontological polyvalence; Hartwig, 2007, pp. 497–498. In explication of the author's general approach, ontological polyvalence is the initial starting point that needs to be maintained in human knowing and being in a dialectical critical realist philosophical approach. It becomes possible via the category of absence which shows all alternate combinations not being possible in the real state of ontological affairs, as Bhaskar (1993, p 111) has explicated by delineating the opposite of it as the unholy trinity of irrealism: ontological monovalence, epistemic fallacy (the analysis or definition of statements about being, in terms of statements about our knowledge [of being], ibid. p. 397) and the primal squeeze on natural necessity (ibid. p. 111, the wane of imported actualist theories of everyday happenstances that occlude and veil the knowing about real transcendental ontological things in the world). See also in Bhaskar, 1993, the lack of the concept of natural necessity, and the fault line of primal squeeze in irrealism and of its fallacies: ontic fallacy and ontological monovalence, ibid., p. 206; epistemic fallacy, ibid., p. 205; linguistic fallacy, ibid., p. 206; anthropic fallacy, ibid., p. 205.

2 On transcendental arguments see Bhaskar, 1993, p. 108; as a type of retroductive-explanatory argument as an explanation "which establishes (normally) at best (in an open systemic totality) necessary conditions of being or existence (and hence also conditions of the possibility) precisely at the point where referential detachment of the explanans becomes…"

3 Intransitive and transitive dimension; transitive dimension: "the social production of knowledge as human praxis…distinguishes it from an intransitive dimension, where objects of science exist and act independently of our knowledge of them"; Hartwig, 2007, pp. 263–264.

4 “Transformative practice articulates the relationship between social structure and social agency by vindicating the reality and irreducibility of structure to agency…it highlights the processual and tensed character of the sociosphere. It is further substantiated as an explanatory framework in the social cube”; Engholm, 2007, p. 467.

5 Real negation: mediation/distanciation (absence without change); transformative negation; radical negation; non-radical negation (Bhaskar, 1993, pp. 105–106).

6 A concept of holistic causality, Bhaskar, 1993, pp. 126–127; in the realm of a social cube or in the domain of the student's learning intrinsic and extrinsic structures the connections in their permeations and other existentially constituted relations the connections and voids can be various in their multiple determinations of many kinds. This is the expanded behavior assessment stance strived for here, and it has been successfully attained via the stepwise research.

7 "Absence or real negation is most simply first considered as the presence in some more or less determinate region of space-time (comprising, as a relational property of the system of material things, an objective referential grid) of an absence at some specific level or context of being of some more or less determinate entity, thing, power, event, aspect or relation, etc." (Bhaskar, 1993, p. 38). "At once the major blind spot in the analytical tradition, screened by the doctrine of ontological monovalence and the pivotal

category of dialectic…absence or real negation structures and unites the ontological-axiological chain" (see MELD) (Hartwig, 2007, p. 9).

8 Social cube or the transformational model of social activity; the four-planar social being or sometimes human nature: (a) material transactions with nature (b) of inter-personal intra- or inter-action (c) of social relations and (d) intra-subjectivity; Bhaskar, 1993, pp. 153–161.

9 MELD; the ontological-axiological or causal-axiological chain, comprising four degrees or stadia or ontological moments: IM first moment, identity; 2E second edge, absenting process; 3L third level, open totality; and 4D fourth dimension, intentional agency; they are primarily ontological categories which would not be hypostatized. See more specifically Bhaskar, 1993, pp. 204–210; Shield, 2007, pp. 295–303.

10 Primary polyadization, necessary for every individuation, it operates as transcendental refutations of any monism; Bhaskar, 1993, p. 402.

11 Referential detachment: "Detachment of the referent (objects, etc., within ontology) from the reference (the inter-subjective/social referential act within ontogeny/-phylogeny)…conversely, it involves detaching or absenting oneself or one's discursive act or one's pre-linguistic intuitive acts from what they are about"; Hartwig, 2007, p. 407. This means new interpretations and also abandoning of the traditional philosophical theories of truth, see Groff (2007, pp. 484–488), and the resurgent theory of the 'truth tetrapolity' (Hartwig, 2007, p. 488). It is not possible to briefly outline these philosophical issues, this conception of warranting collaborative trustworthy communicative interaction in psychotherapy and other settings as really possible; broadly, the latter notion can be conceived as human language, where expressions, related to truth of some kind or being ontological truths, take forms as social contexts and make it possible in this ontological polyvalentic world.

12 The stratification of human agency; Bhaskar, 1993, pp. 167–8; based on the stratification of action (ibid. p. 165) and on the social cube, human agency surfaces or upsurges at all levels and mediating forces regarding human consciousness–unconsciousness and reflexive mind-activities, this being the realm of human behavior strived for in cognitive behavioral psychological broad conceptualizations saving all mediated human activities in perception, interpretation, evaluation, meta-evaluation which is Bhaskar's initial notion about human problem-solving psychological activities in her rhythmic life.

13 World lines, rhythmics: "There is normally a multiplicity of rhythmics at work in a single-episode, such as the design of a book jacket, from the spatio-temporality of that process to the narrative of the designer's life, the lagged causal efficacy of her unconscious, her life-cycle as an organism and specifically as a woman, her daily space-time paths, the longue durée of differentially structurally sedimented social institutions and that of the social relations upon which they depend, the development of specifically civilized geo-history in the context of human history embedded in the rhythmics of species, genera and kinds, located in the physical development of a solar system, unravelling itself in the entropy of an expanding universe" (Bhaskar, 1994, pp. 98–99).

14 Emancipation as concepts in critical realist philosophy and science is a crucial concept, which is not possible to delineate briefly; it refers to "transformation from unwanted, unneeded and/or oppressive sources of determination to wanted, needed, and/or liberating ones, both carried through by agency and establishing the conditions for its fuller development", D'souza, 2007, p. 157.

15 'There are now forms of 'realism´, which draw on CR (critical realist) argumentation to warrant laboratory-experimental study"; Parker, 2007a, p. 391.

16 In critical realist philosophy there are many perspectives on human creativity. Here, in focusing on the reflexive, or on the transcendental sphere, "change does not reduce ontologically to pre-existing elements, though it depends on them; rather, the novel element is added by (1) the creative power of matter in material emergence, which makes quantum leaps 'of (one feels like saying) the materialized imagination…' and (2) the (related) creative power of human praxis"; Hartwig, 2007, pp. 86–87.

17 Dialectical arguments establish the conditions of possibility (dr') of the conditions of impossibility (dc') of some initially established result of posit (Bhaskar, 1993, p. 46); (In the more rigorous sense) "dialectical arguments proper legitimate conclusions which are paradigmatically at once both false and necessary (or at least limited as they are in the domain of 2E), contradictory, incoherent or incomplete in some relevant way, yet inexorable or indispensable; they establish ontological conclusions; and they license negative evaluative or practical implications." (ibid. p. 103). They may be regarded as a species of the genus of transcendental arguments, categorically significant forms of retroductive-explanatory argument and so as to allow what I will refer to as 'dialectical detachment' (ibid. p. 103).

18 Concrete universal ⟷ concrete singular; the moments of critical realism concrete universal comprise a multiple quadruplicity corresponding to the 1-M-4D modes of being-becoming (Pratten, 2007, p. 73); "the concrete universal manifests or individualizes itself via one or more particular differentiations in some (what I will call) concrete singular" Bhaskar, 1993, p. 114.

19 "Once we allow for open systems then laws can only be universal if they are interpreted in a non-empirical (trans-factual way, i.e., as designating the activity of generative mechanisms and structures independently of any particular sequence or pattern of events)", Hartwig, 2007, p. 86.

20 "Causal mechanisms are processes that depend upon interactions between the parts (of emergent wholes) interactions that only occur when those parts are organized in the particular relations that constitute them into wholes that possess this emergent property. Although emergent properties, and thus real causal powers, can therefore be explained, they cannot be explained away. They exist only when the relevant type of whole exists, hence they are causal powers of this type of whole and not of its parts", Elder-Vass, 2007.

21 Bhaskar's (1978) categorization of human access to real structures: empirical, actual and real. In critical realist philosophy concepts empirical, actual, real, as related to real

things are pivotal; empirical means human experiences of some objects, sometimes these experiences can also be actual, that is of events and states of constant conjunctions, but not of real ontological things of the real mechanisms of the world. Thus real things of the world as mechanisms, events and experiences emerge to a human being in her reflections, or not, the latter means of having subjective experiences as sensations or perhaps also seeing and explaining of daily happenstances (that is, of actual things). See specifically on empiricism by Morgan (2007, pp. 169–171) and on reality by Hartwig (2007, pp. 400–402).

22 Transfactuality: "The exercise of the causal powers of structure, that is, the working of a generative mechanism, e.g. as manifest in the operation of all the natural laws known to science, must be interpreted as applying transfactually, that is to say in closed and open systems alike" (Bhaskar, 1993, p. 405). "If they are interpreted in a non-empirical (trans-factual) way, i.e. as designating the activity of generative mechanisms and structures independently of any particular sequence or pattern of events", (Bhaskar, 1978, p. 14).

23 "The concept of generalized master–slave-type (or power 2) relations is a key socio-substantive figure, comprises the hub of which is [process and contradiction" in the four dimensional social cube] the leading form of constraint absented by depth-praxis…they may instantiate dialectical contradictions, and entrain hermeneutic and other forms of hegemonic/counterhegemonic struggle", Hartwig, 2007, p. 287.

24 The ethical stance into the dialectic of desire to freedoms in dialectical critical realism is not possible to delineate directly, as to how concrete singularity is the starting point to the dialectical universalizability in the philosophy. Bhaskar (1993, pp. 279–299) has delineated a sound stance in this practical research here. Putting this moral realist and ethical naturalist position in Bhaskar's words to which I seek to attune: "My orientation here is, as always, to concrete singularity and the goal of society in which the free flourishing of each concretely singular agent is a condition of the free flourishing of all" ibid., p. 280.

II. Cognitive behavioral tools for assessment of the students' learning and behavioral problems

Abstract

Feasible scaffolds for enhancement of nursing students' self-regulated learning were devised where self-regulation in the psychology course requires enrichment via a critical realist approach as indicated by the first research project. In the practitioner's observational stance the students comprise three divergent subgroups with regard to their behavioral learning skills or competencies: students with latent behavioral deficiencies, students with lagging pre-adulthood identity development, and students with stronger problem-solving competencies but without incentives to engage in intentional reflective learning in their dominant surface-oriented educational practice. The imported scaffolds, such as coaching, were effective but not optimally feasible because their execution remained diffuse in classroom teaching. Therefore psychology studies, at least more dominantly, might only reinforce the students' surface learning. The scaffolds do not optimally improve the students' metacognitive intentional rich activities in their daily learning in any of the three student subgroups.

In order to reach a tailored scaffolding of the students' learning the validation of the practitioner-teacher's assessment required deeper psychological explanations of the students' divergent behavioral competencies in order to scaffold their learning in a collaborative trustworthy stance. The implemented CBT questionnaires based on the critical realist, contradictory modality approach, are commonly applied in clinical psychotherapeutic settings and were sufficiently reliable. In this project, the assessment of the students' learning behaviors was similar to functional behavioral analysis in CBT client settings but in large group settings required expansion to social transformative educational practices. The practitioner's social cube position and transcendental argumentation of the transformative social educational life enlarged the scope of explanations of the students' learning behaviors as their behavioral competencies or deficiencies.

The same critical realist position to the practitioner's endeavors laid grounds for the research configuration to measure all possible (negative and positive) impacts of the imported additional teaching scaffolds on the students' learning in the enhancement of the students' metacognitive reflective learning skills. The constructed pre-test and post-test research configuration proved to be workable in the two large student groups of about thirty students. The empirical outcomes enabled the practitioner to formulate dee-

per psychological explanations of the students' behavioral competencies and deficiencies in their disparate anxiety management in both researched student groups. Simultaneously attained empirical results regarding the impact of the imported scaffolds on the students' basic behavioral competencies were not optimally efficient.

In the next research project the practitioner could design and implement scaffolds for a student's disparate mindlessness–mindfulness learning from the attained practical template. The imported software technology with a virtualia learning platform in behavior monitoring and recording might provide means for the practitioner's supervision of a student's monitoring and evaluation of real learning behavior and her learning outcomes.

Key concepts: self-regulated learning, behavior assessment, functional behavioral analysis, CBT questionnaires in assessing non-clinical and clinical anxiety problems, real-time feedback for students' learning outcomes, CBT conceptualization of anxiety-related behavioral problems, behavioral competencies and deficiencies, rumination and worry

1. RESEARCH INTO THE NATURE AND PERSISTENCE OF THE STUDENTS' BEHAVIORAL LEARNING DEFICIENCIES

This chapter elaborates the practitioner's arduous attempts to move from instructive teaching into stronger teacher–student collaboration, when abstaining from self-regulated theoretic positions, to a behavior modality-based understanding of a student's reflective learning. The first research project described the students' learning behaviors in more adequate psychological terms whereas in this project the objective of issue-driven (transcendental realist) research is considered by referring to existing empirical research in the domain of reflective, mindfulness or metacognitive learning. The critical realist practitioner's position on means of CBT assessment from a behavioral modality perspective is then broadly outlined (but does not become established until the third and fourth research projects). This position is a practical approach to psychological explanations of the students' divergent learning behaviors in the search to move beyond dualist skills-based conceptualizations to a competence-based dispositional position in the assessment of the students' functional and dysfunctional behavioral competencies. The elaboration of the delineation of research focus requires reporting of many mutually conjoined and contradictory issues (psychological theoretic, practical scaffolding and research means, the students' learning in the social cube reframe) in the next subsections because the critical realist idea is the practitioner's philosophical research approach to a holistic causality conception (Bhaskar, 1993, pp. 126–127).

This social cube position provides new means to enrich the scaffolding while prevailing in self-regulated psychologies about students' behaviors and covertly moving into individual anxiety and uncertainty management behavioral realms. The new scaffolds to teach students on the psychology course require empirical research about their workability and feasibility in this second research project.

1.1 Gradual transition from teaching to scaffolding learning and collaborative supervision

The first part of this section presents a summarized description of the students' divergent learning competencies as found in the first research project: the fact is that this instructive formal teaching is not collaborative work, where the teacher's instruction does not usher in self-regulated teaching and student's self-regulated learning. The second part outlines the progress of the metacognitive monitoring approach in teaching psychology by introducing the CBT tools used for assessing students' learning, daily behavior and their behavioral problems. It is also considered that the utilization of CBT questionnaires, applied in a pre- and post-test research setting, could help overcome numerous obstacles, both in deeper psychological explanation of the students' procrastinations and in their surface learning. In addition, it would provide the research setting for measuring the impact of the constructed novel teaching endeavors. The general aim is to strengthen collaborative teaching and this is unlikely to happen in surface instructional teaching practices. The critical realist-informed scientist-practitioner strives to develop new options of deploying the CBT tools as additional learning scaffolds. The scaffolding could be workable in teaching large groups of students with totally divergent behavioral competencies, and in supporting an individual student to exercise extensive metacognitive behavior monitoring in her daily learning management.

This depends on whether CBT tools in behavioral assessment are reliable and thus enable validation of the practitioner-teacher's initial assessment of the students' behaviors, and thus provide a deeper psychological explanation of their real learning behaviors as competencies and limitations. It is worth recalling that the earlier research project persisted in a quite diffuse behavioral capability and disposition approach that does not provide means for measuring impacts of the scaffolding on the students' competencies. If a deeper explanation within the behavioral competency reframe is to be attained with good reasons, new options for the practitioner-teacher to invigorate a student's learning behavior**s** could emerge. Practical research required research and teaching arrangements to be applied without hindering the students' initial and primarily surface learning.

Adequate research and teaching settings were established according to the critical realist approach, specifically in psychological terms, with other research options excluded. A more valid assessment of the students' behavioral competencies might emerge as well as new possibilities for the implementation of new learning scaffolds with the CBT treatment tools incorporated into the students' learning (not only structuring and deploying rigid methods). If metacognitive behavior monitoring exercises are to be refined for these scaffolding purposes then rigid, technical methodology approaches will be eschewed.

The initial metacognitive and behavior monitoring stance means that there are no valid options for studying the students' learning competencies and behavioral deficiencies by starting with a theoretic conceptualization and deriving research problems and hypotheses from these theoretical reframes. Research problems and their exact research questions need to be derived directly from a student's real learning behaviors in this pre-existing social-constrained educational life. Thus the research logic emerges from the practitioner-teacher's pre-existing knowledge of the students' learning behaviors and the

social educational practices. The first research project laid practical grounds for this research: specifically, the introduced behavior monitoring position deepened the practitioner's understanding of the students' potential behavioral competencies and deficiencies.

In short, the research problems along with their specific empirical research questions and measurements are derived directly from a student's behaviors as they emerge before the practitioner who is familiar with CBT tools that provide practical means to assess and enhance clients' behaviors. Here it signifies a re-description of the students' divergent learning and daily behaviors in cognitive behavioral terms and an attainment of a deeper explanation of the students' behaviors. In staying with the critical realist position to transformative social life, psychological explanations of the students' behaviors and learning in anxiety and uncertainty management realms simultaneously and directly open the operational path towards measuring the students' behaviors not only as pre-theorized skills but as behavioral competencies and deficits. The CBT questionnaires are based on a broad CBT conceptualization of the vast variety of clients' behavioral competencies and their residing problems. So individual competencies become directly evaluated by the client (student) herself, their deployment is not theory or method driven but issue-driven research tools.

1.2 Insufficient self-regulatory conceptualization in insightful descriptions of students' divergent learning behaviors

First, a broad general description of the students' learning behaviors both within the surface and deep behavioral framework is presented: the ways a student's learning behavior was assessed by the practitioner's observation and other acquired data. It provides the foundation that explains that in the present instructive teaching practices new teaching programs cannot be constructed and introduced as additionally tailored self-regulated scaffolds in guiding the students in contemporary, contextualized psychological comprehension of human nature and behavior within and beyond perspectives of the postmodern, constructivist psychological approaches. Contrary to the constructivist and especially to the critical realist view on reflective human behavior the contemporary psychologies on self-regulation are idealist in their metacognitive preconceived theoretical notions. Therefore, as pre-theorized constructs of individual behavior, they are theory driven and from the very beginning they abolish real social contexts as the generating basis for an individual's metacognitive competencies. Theory-driven programs do not allow students to learn metacognitive behavior and problem solving in their real social constrained life in all of their 'out of the blue' activities. Contrary to Hofer et al.'s (1998) research objective in college psychology studies in initial theoretic positions, psychological templates cannot be integrated into enhancement of the students' metacognitive learning in the real constrained social life. A critical realist (psychological) position to human knowing of world things is ontological because in individual knowing activities of world things an individual psychological being gets its existence. In sustaining an individualist contextual authenticity there are no possibilities to turn to epistemologies (as occurred in Hofer et al.'s study) and to the supposed concepts and instruments in teaching while preserving human reflection as 'out of the blue' activities.

The research issue of this project is a student's learning in her real constrained life. In particular, the objective is in the realm of individual behavior in dual and non-dual perspectives without any theorized stances from nomothetic psychological pre-categorizations. Training students by instructing them to deploy a previously selected self-regulated monitoring methodology restricts their monitoring to theoretically predefined learning or problem-solving procedures and daily (actualist but not necessarily real) events and things. It might occlude or veil an individual's metacognitive monitoring of real fundamental ontological mechanisms as the individual's real determinants of her behaviors. Theory-induced monitoring or metacognitive monitoring is not necessarily and always individual metacognitive behavior management and monitoring of that behavior under one's constrained world lines. In the critical realist approach, the notion of human self-regulated or rather intentional human behavior is a fussy notion because there are no means in theory-induced or instructed metacognitive monitoring to differentiate between either flawed (TINA compromises) biased cognitions or broader reflections of all internal and external things of the world. To understand this, the practitioner requires proficiency in CBT-behavior modality approaches to teaching and its specific scaffolding similar to CBT client practices.

In spite of the remarkable richness of the research in self-regulated psychology in education (see, for example, Azevedo, 2005; Balchin et al., 2006; Dunlosky, 1998; Hacker, 1998a; Hofer et al., 1998; Maki, 1998; Nuthall, 2004; Otero, 1998; Randi & Corno, 2000; Vye et al., 1998) it is not a feasible approach in this project because of the students' divergent and even disparate learning competencies. The students' divergence emerged directly from the assessment of the students' behaviors in their pre- and post-test exercises into behavior monitoring and primarily from the practitioner's observation in the first research project. Teaching the divergent students to enhance their metacognitive and academic learning is not practically solvable by remaining within an instructional and (theory–practice) dualist skills stance. According to Simpson et al. (1997) a balanced strategy in assisted programs of cognitive, metacognitive and motivational strategies (p. 80) is important in the enhancement of self-regulated learning. The theoretically designed behavior monitoring approach by scaffolding a student's learning meets all their three requirements optimally but here it highlights a practitioner's constant assessment of the students' real contextual learning behaviors, not by theoretical categories but directly as in the CBT stance of teaching.

There is limited space for discussion and evaluation of the utility of contemporary educational researches in the enhancement of self-regulated learning in adult studies. This research is methodology or theory driven without any practitioner's tools or specific attempts to assess a student's real learning behavior as behavioral competencies and deficiencies. The gap between self-regulated psychologies (which has not yet been achieved in the maintenance of very modern dualist and deterministic conceptualizations to personality and human development in the institute) and the CBT conceptualizations on human behavior is huge and the gap cannot be bridged theoretically or practically if the pre-existing constrained transformative educational practice is not the practical focus. Researchers, in their self-regulated psychologies and empirical projects, have attempted to improve students' learning within specific learning tasks without an option for the

researcher to assess the students' behavior in the educational constrained (social) practice in a pre-test and post-test setting. An assessment of a student's learning behaviors is urgently required due to the discrepancy between the students' learning competencies and the advanced educational objectives for deeper metacognitive constructive psychological knowledge and work proficiency in nursing.

Both these limitations (lack of an adequate behavioral assessment and of implementation of the specific scaffolds to individual learning) shall be overcome. The goal is to extract deeper psychological re-description and explanations of a student's learning behaviors and to devise and simultaneously set up templates in the teaching of psychology to provide practical guides and means into individually initiated changes in a student's real learning behavior. The path towards deeper psychological explanation of the students' learning behavior requires the practitioner's knowledge of all their daily behaviors in which all their intentional and automatic or unintentional learning activities have their place.

Teaching students with divergent learning competencies self-regulated learning on human nature is a demanding task especially because the other dominant ordinary teaching technologies and practices, albeit perhaps discretely as a deep underlying current for empiricist scientific values, maintain surface learning and teaching as a pre-valued teaching practice in nursing. The first research project demonstrated that in all of the students' real learning activities there are shortcomings due to the students' strong procrastination during the course's implementation. The same occurs even with students who have advanced but latent metacognitive behavioral competencies. Generally, in critical realist terms, the situation is the outcome of the dominant structures of instructive teaching, of its weak dialogic teaching discourses and exclusively theoretic or rather normative actualist knowledge in nursing studies.

Here, an attempt is made to surpass the deep dualist commitment to ability stance in human behavior and motivation as the dominant realm in self-regulated and academic learning (see for example Dweck, 2002; MacIver et al., 2002) via assessment of the students' learning in the social educational realm. Social educational practice does not suggest or provide means for an empiricist method or theory-driven research here, such as options and programs that would allow structural social changes in the students' learning and teaching into enhancement of the students' deep learning behaviors. The dominant and only educational interest lies in management of teaching within the dualist and deterministic confines of ability psychological reframes with scarce and rigid psychological concepts that do not even address the advanced self-regulation psychologies, not to speak of the students' learning as their real behaviors.

Crucial self-regulated learning activities appear to be lacking in almost every student; the shortcomings of which are specifically and continuously manifested in the students' failures to read psychological learning materials. Text comprehension is essential in academic studies as Hacker (1998b) elaborates by referring to the overused concept of comprehension monitoring in reading (p. 165). Here, coaching, as a fundamental method in self-regulated teaching, was not an efficient means to invigorate students' basic self-regulated learning activities. The students performed only post-learning of the previously dealt learning issues and not of present or the next learning issues as if searching for

overt recalling and demonstration of their theoretic knowledge in formal examinations. These and other essential limitations in the students' self-regulated learning behaviors were adequately described and demonstrated in the first research project.

However, the additional challenge to read rich psychological and emotionally laden texts was insufficiently confronted in the previous project. Apart from that 'skill' in learning there is the need for other required academic learning skills and competencies, such as the construction and management of an individual learning strategy in daily learning with concurrent behavioral management of other individual daily learning and other necessary daily activities. These competencies also include writing on learning issues, writing notes and taking part in discussions on the learning issues (Pressley et al., 1998), evaluation of received feedback on performed individual learning activities and their outcomes (Winne & Hadwin, 1998) and so on. All self-regulated or metacognitive learning activities for the students (only a few exceptions in student groups of thirty) were scarce and weak. These learning activities did not presumably provide real feedback and incentives to move onward with one's deep learning activities. It is crucial to note that the students were unable to overtly demonstrate subjective needs for comprehending psychological texts in spite of the fact that this issue was dealt with all along by the practitioner's extensive coaching and guidance for stepwise strategic learning. In the first research project additional attention was devoted to teaching for an initiation of a student's reflective writing which is required in 'second level' learning and individual metacognitive understanding on learning issues.

1.3 Shortcomings of the constructed learning scaffolds for metacognitive problem solving

In the first research project the main emphasis was put on coaching in teaching psychology. It was evaluated as the crucial template to verify the students' motivational-behavioral positions to their learning and to strengthen their responsibility commitments to their deep learning. The general conclusion from the first research project was that rich scaffolding in the realm of invigorating students' self-regulated learning still maintained the learning and teaching objective as an instructional dualist theory–practice realm that does not support or provide incentives to a student's self-regulated learning in the metacognitive behavioral realms. This empirical outcome in the practitioner's work in teaching is not a sufficient achievement because individually identified and verified contextual psychological issues were not addressed more often and more explicitly by the students, and because the teaching moved tacitly from coaching into one's identifying and recalling of concepts and normative theories and overtly actualist norms.

In critical realist terms, this kind of a student's superficial learning occludes her individual knowing about real world things and of mediations in which knowing is the real emergence of concrete singularity or individual behavioral activity in one's contextual 'out of the blue' activities. This pivotal problem, as a lack of a real contextual basis to each student's learning, remains in the teaching and its formal programming of the students' learning throughout the course. The implemented program does not provide an adequate tensed transformative template for an invigoration of a student's metacognitive learning in her daily rhythmics.

One reason for the students' dominant surface learning and lack of self-regulated deep learning is the absence of meta-reflective behavioral competencies in the maintenance of their inherent interest in studying the learning materials in a self-regulated manner. The students appear to lapse into learning naively (Zimmerman, 1998). The weak incentive to intrinsic, persistent learning activities excludes a student's metacognitive management of her daily learning and all her behaviors in her open constrained life as her own strategically and contextually arisen and executed behavior. In order to learn about human nature, work-life learning cannot be conceived as a separate or theoretic learning domain in psychology. Instead, individual learning about human nature must be considered as a non-dual issue in which learning psychology is both learning and acting on one's constrained daily life. Metacognitive learning does not fit into any dualist conceptualizations that differentiate between individual learning and daily behaviors. Therefore, a critical realist position to learning and its research about feasible methodologies strongly suggests metacognitive behavior monitoring means and learning scaffolds that require practical exercises for the recording of one's daily behaviors. This practical approach diverges from the more common approaches that are dualist and specifically based on a human skills approach to self-regulated learning and specific learning objectives (math, writing, communication, etc.). Specific self-regulated teaching programs do not address individual learning in terms of one's behavioral activities as they really arise in one's constrained daily life (Hacker, 1998a; Schunk & Zimmerman, 1998; Dunlosky et al., 2000). Self-regulated positions note the problem but they cannot have any means for overcoming it in real practice, but the problem is solved via critical realist philosophical tools to understand how an individual finds herself in her ontologically dualist life which initiates and is the basis for her management of her daily life in her referential detachment activities.

In the first research project the teaching interventions were introduced as a constructive learning process. An evaluation of learning outcomes of students' reflective competencies towards all divergent learning issues on human behaviors in the constructivist wide knowledge conceptual reframe, conceptually rich learning materials, and individually executed integration of classroom and distant learning activities with their presupposed positive mutual reinforcing impact were argued as necessary to the enhancement of individual metacognitive learning. However, they did not work well in the real teaching practice or there were insufficient preconditions for an invigoration of the students' crucial self-regulated learning activities and for the strengthening of the pivotal domain of metacognitive behavior monitoring. For example, the practitioner's coaching of the students by proceeding with strategy instruction and collaborative innovation (Randi & Corno, 2000) was not successful in enhancing self-regulated learning behavior. The possible reason is that the students' initial orientation to their learning was not focused on their own contextually managed motivational orientations to study. Coaching was performed in instructional teaching similar to Graham et al.'s (1998) strategy development (SRSD): instructing and supervising students on the ways to develop writing and self-regulation strategies in daily individual real learning activities. The practitioner's coaching discourse particularly underscored a student's personal look at learning materials in mutual classroom discourses and her focus on her validation and reframing of

individual real learning strategy and its performance. The instruction of the students in their real recent learning was the main objective, as it was for Hofer et al. (1998) in encouraging students' subjective personal expression and collaborative listening during classroom sessions and its discourses of re-modeling each student's real behavior (Schunk & Ertmer, 2000).

The first research project demonstrated that the practitioner's coaching functioned deficiently because of the students' tacit collapses in their continuous behavioral monitoring of their real behaviors. This monitoring is a metacognitive behavioral realm and resource that does not activate in surface teaching practices. With the students' mediocre learning activities an abrupt dualist discourse arises as confrontational and difficult subjectively to interpret and to react to and the outcome can cause increased and intensive emotional loads for a student. The students could approach the teaching discourse empirically and normatively as if interpreting it as formal instruction that actually was not the practitioner's intention. Evidently, strategic learning as a flexible and persistent planning and strategy management is not often behaviorally manageable and executable for the students through their own activities. The same failure and tendency to reinforce the students' surface learning occurs if the teacher attempts to gain improvement by issuing rigidly educational goals and assignments. There is no means to strengthen the students' self-regulated learning by instructive strategies, as Hofer et al. (1998) and Simpson et al. (1997) attempted in their practical classroom application among college students. The reason is the absence of numerous mutually supportive and reinforcing self-regulated learning activities in the nursing students' daily behaviors. Schunk and Ertmer (2000) elaborate a recapitulation of these teaching means for classroom teaching and they are confined to instructive guides and reinforcement means.

In CBT terms the students frequently are unable to manage their emotional thoughts and 'load' smoothly and mindfully. Teaching practices, for example lectures, do not allow feasible 'load handling' and therefore the collaborative innovative approach to behavioral management in the classroom teaching discourse becomes excluded. Under these circumstances the teaching sustains the students' surface learning and its teaching. The students do not succeed in creating and performing strategic learning (see, for example Weinstein et al., 2000, on the ways to learn, to construe and evaluate individual own learning strategy) in their constrained real daily social life. As the practitioner discovered here, the students were mainly behaviorally oriented and disposed to passive following of the teacher's formal illustrations without intention to confront individual emotions and thoughts reflectively as arising out of their own situated behaviors. It could be due to the students' lack of private inner speech on verbal task regulation in their management of on-task performance in learning. Although this indicates a poor self-concept and low self-esteem, such as Belfiore and Hornyak (1998) delineate, it is not possible to repair these through surface learning and teaching practices by direct teaching methods. Sudden and intrusively aroused emotional load in the students' thinking disrupts their attention and the metacognitive management of learning in all their activities such as in individual task management during lessons, reading psychological texts, and other well advanced self-regulated learning activities.

The previous research about the feasibility of the fairly innovatively implemented learning scaffolds into self-regulated learning proved that the scaffolds did not encourage and instruct a student to monitor and re-evaluate metacognitively her own behavioral activities contextually and broadly, especially not in large student groups with divergent learning competencies. Mindfulness behavior control is insufficient or broken in a student's individually executed on-task performance and goal-orientated behavior management in her daily life. Her individual behavior monitoring suddenly lapses into reflective despairing moods without adequate and smooth metacontrol. The reflection of despaired moods is demonstrated in many psychological conceptualizations as a manifest behavioral problem. It disrupts one's ongoing metacognitively managed on-task performance behavioral activities, such as perception, interpretation, evaluation and meta-evaluation. This restricted self-reflection has been a key issue in critical philosophy since Theodor Adorno's (1966) "negative dialectics"; this limited reflection remains the reflection of identities, not of contents and of mediations of things, according to Bhaskar (1993, p. 126). Because every reflection must be about something ontologically existing in order to reflect at all, the limited self-reflection lapses into thinking of theories and theoretical concepts. Contextual metacognitive monitoring and metamanagement of individual behavior or reflecting on all real internal and external things and their mediations is absent or weak. A student's thinking consists of tacitly formed and selected approximate norms. It indicates surface learning to which rich introductions to norms and theories in all nursing courses provide ample opportunities and reinforcements. However, in emancipatory psychological research this critical realist-informed general philosophical description of the students' behavioral problems is insufficient: a detailed psychological description and an elaborate psychological explanation of the students' totally divergent behavioral competencies are required.

As to an elaborated psychological re-description of the students' learning behaviors across many students' studying groups, in this teaching practice the basic subclassification of the students in the teaching groups with regard to their basic competencies is as follows.

First, there are students with more advanced self-regulated skills who cannot apply rich adequate learning strategies and cannot find incentives for progressing with their own applications and re-structuring activities in teaching under the confines of weak coaching and non-collaborative or fragmented classroom discourses. This impairs all teaching discourses from a smooth and flexible execution because the practitioner-teachers' lectures as a formal and strictly instructive teaching discourse have been attuned to the needs of less advanced students.

Second, the students with average behavioral competencies and skills in self-regulated learning are not able persistently enough to perform their preparatory homework for the next classroom sessions in their haste to complete numerous learning tasks (due to a lack of academic learning skills). They lapse into tacit worrying, which causes procrastination and weakens activity planning in all their concurrent intensive learning. These students fail in cognitive restructuring as the nodal behavioral realm in individual metacognitive problem-solving managed learning. Scaffolding of classroom teaching by itself is insufficient to enhance metacognitive learning as for example Hacker (1998a)

delineates in many theoretic ways. But although they persistently prevail in pre-theoretic positions to closed systems they do not delineate the practical from disastrous hassles in lapsing into theorizing (epistemic fallacy in critical realism). A great number of researchers have conducted empirical research on students with both regular and deficient abilities (Prater & Hogan, 1992; Randi & Corno, 2000; Shapiro & Schwartz, 2000; Weinstein et al., 2000; Nuthall, 2004; Mooney et al., 2005, etc.). But all that research is confined either to a skills approach or to specific activity and learning domains and therefore they do not provide practical approaches to the invigoration of a student's all reflective learning activities in her real constrained and open life.

Third, coaching the students with poor and broken concentration and other shortcomings in metacognitive problem solving alone is not a workable foundation for deep learning. These students only get frustrated and they tacitly try to avoid anxieties by restricting their thought contents to more familiar daily concerns in attending lessons or reading learning materials. Therefore they apparently attempt to manage their dysfunctional hopes by gaining normative instruction and rigid conceptual definitions in lectures. These students lapse into picking theoretical concepts and epistemologies as critical realism has philosophically outlined since Theodor Adorno described an individual's thinking of theoretical illicit abstractions (TINA formations in Bhaskar) as dysfunctional, biased thoughts, schemata and metabeliefs (identity thinking, not thinking of mediations of real things at the same time). This collapses individual mindfulness reflection as the student's tacitly aspired behavioral objective in learning.

Based on these briefly outlined problems the research searched for teaching means to support the students' self-initiated persistent learning for their deep learning. However, self-regulated conceptualizations and these teaching methods are not effective among students with divergent behavioral competencies. Thus the transition in the practitioner's work towards additional CBT tools in individual anxiety management is highly justified but they stay as ungrounded and diffuse for the students' deployment if they do not at first attain deeper explanations of the students' anxiety management competencies. This research project strives for deeper explanations of the students' divergence in their anxiety management via CBT conceptualizations.

1.4 Students' significant behavioral deficiencies in self-regulated learning

The following section will introduce why means of CBT-informed behavioral assessment in an individual's anxiety management behaviors are the most optimal to address the students' discrepancies in their behavioral learning skills and competencies.

1.4.1 No direct feasible transition from formal instruction to collaborative supervision

The impossibility of collaborative supervision in teaching psychology of human nature to the college nursing students has already been demonstrated. The practitioner's supervision of the students' learning behaviors, which is not limited to instructive discourses in their practical learning habits, is unattainable within their initial orientation to learn by attending lectures and perform formally instructed learning tasks. The students in their weak reflective metacognitive learning activities and active procrastination do

not contextually monitor and metacognitively appraise their on-task performance as their real ongoing learning activities. Therefore, generally the practitioner's option is to instruct the students in curriculum-based educational programs. The first research project affirmed that even if the practitioner is reluctant to maintain this practice the real outcome of the practice emerges as instruction anyway. There is no way that psychoeducation, real-time supervision of a student's learning and intensified training of assertive behavioral skills can be performed because the practitioner's and the students' focus in the classroom discourses is on teaching means but not on one's internal and contextually arisen behavioral activities.

Emancipatory psychological research requires a deeper psychological explanation of the students' behavioral deficiencies in deep learning and reflective uncertainty in their daily activity management. The applied deep or broad reflective reframe and practical template of the students' real learning is the only realm to scaffold all the kinds of the students' daily learning and not only scaffold the teacher's teaching. As will be shown, that scaffolding turns out to be possible in the third research project by introduction of a modality-based approach to individual metacognitive behavioral monitoring devices.

1.4.2 Feasible applications of CBT tools to attain deeper explanations of the students' divergent learning behaviors

The previous empirical research study contains numerous methodological weaknesses. First, from the methodological point of view, it is a diffuse strategy for exploring the nature and realm of a student's self-monitoring and its potential changes. It does not delineate psychologically what cognitive monitoring skills the students exhibit in their real daily behavior, and it does not evaluate at the level of their behavioral contradictory tendencies and their management strategies of their internal forces, the tendencies of which are at work in every human's learning behaviors. Second, there is no valid data and assessment as to how weak or strong the students' metacognitive self-monitoring really is and what the maintaining psychological behavioral mechanisms of the students' apparent weaknesses in their metacognitive learning are. Third, the teacher, in his attempts to maintain the practitioner's emancipatory stance, must possess valid grounds both for eliminating all other optional explanations of the students' behavioral deficiencies and of other programmatic options in improving the students' learning in order to justify scientifically that the chosen line is the most feasible.

By contrast, the previous empirical project demonstrated soundly that the students' general competencies in learning and in all daily behaviors were uniformly weak; their deficiencies are not explainable by circumstantial, momentary or environmental factors alone. Their self-regulated psychological explanations remain, at least tacitly, in the skills and abilities dualist frameworks from where there is no outlet for emancipatory practical programming of the students' learning. Instead of these theoretic positions, in the CBT conceptualizations and perspective, there is a broader reframe to human behavioral competencies and deficiencies and it provides practical options to progress to new conceptualizations and research stances beyond self-regulated learning. Self-regulated psychologies exclude the assessment of a student's learning in her real constrained social life, so these theoretic positions stay within the realm of researching self-regulation components as

theoretically derived; this is the core issue in educational research of self-regulated learning as summarized by Zeidner et al. (2000). Self-regulated learning does not enable the practitioner-researcher's conceptualization and assessment of a student's learning as her entire daily behaviors and this nullifies self-regulated psychologies as diffuse or mechanistic.

If not sticking with the practitioner's initial position and his reflection on all the things of the open social totality of education there would be no possibilities to continue with this research via the students' behavior monitoring and its recording stance. It has already been argued that this stance was the most adequate approach to practical teaching and concurrent research in an ordinary teaching of psychology when the students have divergent learning skills and competencies.

The practitioner's focus in this research project is on all individual daily behaviors in which a human individual reflects and acts in her daily rhythmic. Addressing this individual behavior in the social cube reframe informs application of CBT-behavioral monitoring records to a student's learning. The metacognitive monitoring of individual behavior and its enriched conceptualizations evolve from a real behavioral context in which context is the key to the enhancement of an individual's intentional reflective human behaviors. Self-regulated psychologies are unable to maintain the initial ontology of (individual) the world as constrained and dynamic when a learner encounters her real social learning environment. The initial aim in teaching is to provide an innovative learning framework that is not possible in instructive learning and teaching practices. This problem of a dynamic and constrained learning environment can be best addressed in psychological studies via CBT tools when other optional management and sociological teaching projects are too diffuse and theory-orientated to enhance a student's most basic skills and competencies in self-monitoring and monitoring of her behaviors in real social and educational life.

Traditional practitioners' psychological stances in recourses to skills and ability psychologies nullify a practitioner's reflective stance in recourse to dualist theoretic and normative practices and therefore they are not sufficient in targeting social transformative life as the primary practical reframe and realm of a student's learning. For example, a research on pre-adult students' self-conceptual negative affect and weaknesses as presupposed constructs and empirical classifications of these constructs could hinder a student's academic learning of psychology for vocational purposes. Cole et al. (1999) note that this dualist research on theoretic self-constructs between real behavioral competencies is an unfeasible option but they do not offer a solution, therefore they persistently stick with an empiricist research stance. Their focus is to have theoretic empirical knowledge about presupposed deterministic laws regarding the stability of students' initial psychological constructs.

In contemporary psychological research the dominant theoretic positions into fostering students' learning within closed systems, not within open transformative systems, do not inform this emancipatory research practice. In order to proceed with the latter objective it is necessary to perform extensive and elaborated research on students' behavioral learning difficulties that reside in their daily behaviors as the aim is here. The practitioner's goal is to discover whether the students' potential difficulties in psychological terms

are explainable at a deeper and at an individual behavioral level. When thinking of the students with less developed learning skills the adequate psychological approach for deeper explanations seems to be to perform a CBT assessment and from the outcomes of the assessments to infer practical treatment means. The CBT approach focuses on elaborations of different deficiencies in an individual's core behavioral functions and operations. Here, the CBT approach is conceived from a critical realist philosophical basis and will be used to assess an individual's divergent behavioral psychological mechanisms (in a modality perspective that is elucidated later on) in the social cube reframe (the core dimension of Bhaskar's social cube was mentioned on page, and its deepening in psychological realms was inferred from critical realist philosophical notions on absence (p. 5), dialectical moments and primary polyadization (p. 6), and structured human agency (p. 7). This idiographic stance to fostering a student's learning by empirical programs should enable the derivation of specific therapeutic tools for enabling positive changes in the students' behaviors, and these potential changes could become part of the concurrent empirical investigation.

The CBT stance in attaining deeper explanations of the students' procrastinating learning and living ushers in CBT conceptualized knowledge of the students' potential behavioral deficiencies at their behavioral level. Or, if the transition in the practitioner's explanations is not manageable in the realm of CBT conceptualizations as a behavior assessment procedure of some kind, there remains at least for the practitioner options to more closely classify the students' behavioral features and characteristics of their self-regulated learning behaviors and uncertainty management. If the CBT conceptualization and assessment of the student's divergent learning fails for some or many yet unknown reasons a student addresses her behavioral level more directly via carefully chosen and implemented CBT questionnaires that guide her search for her own individual deep behavioral matters. This data would provide new means for the practitioner to tailor his teaching of psychology to more accurate and feasible human matters.

Nevertheless, there is a real need to deepen the practitioner's understanding of students' real learning behaviors that goes beyond traditional deterministic skills and personality dualist psychologies and theoretic self-regulated psychologies if that is possible. The practitioner's theoretic understanding of the students' self-regulated psychological features only extends to implementations of general teaching methods and instructive protocols, and the students' daily learning and its scaffolding will not be addressed. The first research project already demonstrated that the students failed to utilize rich teaching scaffolds from self-regulated psychologies and from inferred teaching scaffolds. Generally, rich teaching scaffolds are not sufficient here due to the students' crucial pitfalls in metacognitive behavior monitoring.

Although covertly departing from self-regulated psychological perspectives in this teaching practice the practitioners' introduction of a CBT assessment position would be feasible and executable here because he would have two totally divergent options to scaffold the students' psychology studying. First, the practitioner would either validate his observational data based on presuppositions that the students do not often suffer from anxiety behavioral problems and there is no grounded reason for implementations of CBT-informed learning scaffolds. This option would mean that the students' diffuse

and passive learning patterns are mainly and primarily caused by the superficial non-collaborative educational practices in nursing studies which would be possible to address by more confrontational, assertive and persistent coaching discourses (see for example Hacker et al., 1998; Schunk & Zimmerman, 1998; Boekaerts et al., 2000), such as specific protocols in peer tutoring or in behavioral modeling and so on. Second, the validating data from CBT questionnaires might indicate many students' behavioral deficits in their anxiety management that, for the practitioner, would provide direct options to deploy specific CBT treatment protocols to their learning of psychology. This practical option would mean that the students' vast divergence in their learning behaviors becomes explained at a deeper psychological level in divergent students' subgroups. It would provide means for the practitioner to deploy divergent CBT-informed learning protocols for the student's metacognitively initiated choosing and practicing in their psychology studies.

1.4.3 Practical difficulties in the assessment of the students' learning behaviors under the confines of instructive teaching

When a method-driven strategy in initiating self-regulated learning is insufficient for the students' utilization, a practical solution must be based on the practitioner's deeper understanding of the students' real learning and daily behaviors. Because purely theoretic bases on having deeper psychological explanations do not address the students' real daily behaviors, an alternative is to perform behavioral assessment of the students' behaviors. However, behavioral assessment of any kind through CBT protocols does not emerge directly because the ordinary teaching discourses are dualist and based on instructive teaching means that only superficially address a student's individual daily behaviors and its enhancement in real social practice.

Promising general outlooks on options to smoothly integrate CBT treatment protocols in ordinary vocational teaching practice of psychology might emerge from the basic scaffolding accomplished in the first research project. However, there still are almost surmountable practical difficulties in introducing additional CBT-informed assessment and treatment scaffolds to ordinary teaching when all teaching practices are strongly dualist in the teacher–student discourses. As the first research project demonstrated, in instructive teaching practice the basic scaffolds to self-regulated and deep learning were both poorly executed and when they became executed they where only randomly carried out by the students. However, collaborative teacher–student discourses and teaching scaffolds became strengthened and this strongly suggests the need to seek transformation of the teaching practices into more collaborative directions. This might be manageable by CBT practical means in supporting the students to take a direct behavioral stance to their own behavior and its remodeling that is needed in the use of CBT-based assessment and treatment practices.

The practitioner's task of formulating a deeper psychological explanation of a student's learning behaviors in the parallel execution of basic teaching of psychology in the realm of reflective behavioral competencies and dealing with potentially residing deficiencies requires a new psychological approach to teaching compared to the normative problem solving and teaching practices. The previous research project on the importation

of constructivist psychologies as metacognitive psychologies into the students' learning is a demanding task to accomplish in the instructive-based dualist teaching discourses. This teaching in its theory–practice dualism along with other fixed normative solutions to resolve contradictory real things in real practice is based on teachers' instruction and lectures along with other traditional teaching methods, such as fragmented or rigid learning structures and evaluative practices. Self-regulated learning and teaching psychology and subjective metacognitive problem-solving skills in curriculum-based teaching programs are at odds with the dominant normative teaching practices. The latter modern practice tacitly restricts and undermines the practitioner's attempts to teach psychology that encompasses all divergent metacognitive behavioral realms for satisfying scientific knowledge conceptions of postmodern and constructivist scientific human matters. Psychological explanations of the students' learning behaviors requires that the practitioner is capable of executing behavior assessments of the students' real behaviors, and that means that the practitioner in his assessment can have data of the general regularities of their daily behaviors and of the maintenance of social-psychological and other real factors behind causally determinate things.

This kind of behavior assessment of the behaviors and of the underlying causes behind the behaviors is not only executable merely by observational data in classroom settings or other circumstantial data, but requires that the students through their own evaluations of their recent behaviors search for these regularities in their own behaviors. Although CBT questionnaires are generally based on a client's identification and evaluations of the general regularities of her behaviors for the practitioner's data analysis and integration to his observational data these questionnaires might provide data of her general behavioral regularities as underlying psychological mechanisms. Data from CBT questionnaires together with the practitioner's observational and other data of the students' real daily learning behaviors might validate the practitioner's spontaneously performed assessments of the student's behaviors. CBT-informed behavior assessment is not a strict on momentary data based methodological assessment protocol but is based on the practitioner's observational and all other recurrent data of each client's or student's real daily learning behaviors. This kind of CBT behavior assessment is strongly based on a strong collaborative stance and is deeply committed to reciprocal and dialogic practitioner–client communication where data from a student's evaluated learning and all her daily activities as well as from the practitioner's feedback to each student becomes exchanged and accounted for in the concurrent teaching practice.

The practitioner's obstacle of providing accurate feedback on the students' learning behaviors and outcomes in a real-time fashion is not executable practically by the students with divergent learning skills:

Some students have only surface learning activities at their disposal (a lack of self-monitoring of one's individual actions by daily records as the first research project showed) and the practitioner thus cannot have real-time data of their real learning behaviors. Other students vacillate intuitively in their learning activities (either reflecting on their despairs or rigidly focusing on management of imagined or real environmental challenges as ambiguous learning instructions and demanding learning tasks) as the records indicated in the first research project. The majority of the students adapted their

learning activities to the required manifest normative level and the practitioner thus cannot have real-time data of these students' real behavior at his disposal. These discourses entail no incentives for individual studies and practices in a mindful way in order to provide means to the initiation of individual metacognitive skills that would require the practitioner's move from general learning and teaching discourses into more innovative directions. Students with better developed basic skills for self-regulated learning lapse into surface learning activities into which instructive teaching has already become consolidated as the general teaching practice. With more self-regulated learning skills (skills of directing their attention, concentration, persistent strategic learning activities, text comprehension, skills in literary conceptualization, etc.) they adapt to these normative learning practices and the practitioner thus cannot have real-time data or provide feedback to these students.

However, the delineated path to the practitioner's use of CBT questionnaires in this teaching practice and to accomplish a CBT-informed behavior assessment of the students' learning and all behaviors is worthy of psychological empirical research here. It was already determined that in this teaching the dead end in instructive teaching means is real which blocks new innovations in teaching to invigorate students' mindfulness behaviors. Langer and Moldoveanu (2000) and Sternberg (2000) affirm this in their empirical (theoretical, not ontological) elaborations of problems in human dualist psychologies. In this research there was already rich implementation of basic scaffolds to self-regulated learning, such as rich conceptual tools and viewpoints of learning materials, interactive rich and deep discourses during lessons, a general and sound constructive learning structure but mostly and more often they were omitted by the students in their learning.

1.5 The consolidated template for comprehensive explanation of students' behavioral competencies

From the practitioner's perspective into the real social cube in this educational practice a clear favorable progress has already taken place but the progress is too weak to increase the students' deep learning. The attained outcomes of the students' learning of psychology studies are not sufficient because the students' self-regulated learning and their conceptualization skills did not improve in the realms of their real learning behaviors. This is conceivable because of the dominance of educational objectives to dualistic and deterministic psychological concepts to personality and human development that inform theory–practice notions in basic academic vocational studies. As the first research project showed, approximately a third of the students improved their reflective conceptualizations as their own metacognitive managed activities in both of these teaching groups. However, when taking into consideration the fact that the same proportion of the students initially possessed undeveloped basic skills for self-regulated behavior and learning this is not a sufficient outcome. The students with better developed self-regulated skills also need real options in learning scaffolds for revising and deepening their understanding of human behavior in order to move on with their adulthood challenges and vocational learning objectives. These real options do not emerge more manifestly in surface learning and its instructive teaching practices.

Obviously, the achieved result with a number of innovative learning scaffolds is a favorable one when considering the students' divergent skills and their limitations and they nevertheless were learning psychology; the scaffolds were rich in conceptualizations in order not to increase behavioral normative formulations to manage individual and work problems in nursing. However, it is not the optimal result because the vast majority of students were not able to validate and develop basic skills in self-regulated learning and problem solving. They continued with formal problem solving and failed to act intentionally in their real constrained and transformative educational environments in this course's execution. Their behavioral patterns and orientations to learn were evidently the same in all their studies because they possessed learning skills confined to surface learning activities. Their deep learning activities were too weak and random and this fact sustained the dominance of instructive teaching practices. In addition, in this teaching practice there often emerged strong official incentives to improve the students' surface learning, which was not ethically fair regarding the students' diffusely expressed interests to perform deep learning.

The students performed their studies more often by following general educational rules as is necessary in order to learn at all and they thus were not interested to confront contradictory educational objectives and teaching practices more actively. Other students with broad reflection seemed not to have reasons to undertake new initiatives in sharing an active part in teaching and learning discourses. Therefore, for the practitioner, there was no clear practical path to develop self-regulated learning skills and practices in the students' present or future studies. Individual skills in broad mindfulness reflection do not develop spontaneously because a student's non-strategic or strategic surface learning remained as a schematically and deeply structured psychological behavioral pattern.

It is self-evident that the students' same superficial behavioral learning patterns were dominant also in their other courses because as dominant teaching practices they by themselves sustain the dominant teaching structures and discourses in the dualist instructive dialogues. The students with less-developed skills in self-regulated learning studied inefficiently and they required extensive normative feedback and guidance from a teacher to compensate their daily shortcomings in basic normative learning tasks. This indicated the students' difficulties to manage all their daily activities, and these broken learning activities also kept their learning patterns as surface learning activities. In these educational settings there continuously arose questions regarding the required outcome and exact tasks to be individually accomplished in order to achieve a student's preformalized educative outcomes related to the general teaching program. While providing exact guidance of the basic required learning tasks and norms to be learned a teacher thus tacitly was compelled to reinforce the students' covert behavioral surface learning patterns. This also occurred rather often in psychology studies; other more feasible and collaborative teaching means need to be found. The first research project was a promising path in that direction and it must be continued. There is now a more precise conception of the students' learning activities and their extreme discrepancies in learning skills and activity patterns which are impossible to manage successfully with the use of formal instructive teaching means in large student groups.

In the first research project the basic research strategy to measure changes in the students' core behavioral realms through pre- and post-test arrangements was successful and it enabled the practitioner's evaluation of the efficiency of his teaching interventions in the behavioral realm of behavior control and especially in metacognitive behavior monitoring. The results from the first research project clearly demonstrated that a student's intrinsic metacognitively managed learning has to be invigorated to more frequent and intensive learning which is the learning objective in teaching psychology of vocational learning issues. In these social constrained teaching and learning practices, this is not a simple task for the practitioner-teacher. As shown, any teaching methods or other instrumental implementation produces little impact, when taking into account how deeply structured the learning and teaching frameworks through transfactual mechanisms were consolidated. The mechanisms are contradictory, multilayered, in themselves efficient and enduring and through their pre-existing structures they are able to maintain these relatively stable learning and teaching practices. If the practitioner were too idealistic in teaching innovations, the students would be totally reluctant to embark on their daily learning in the new self-regulated and strategically managed learning objectives.

In this project, the general rules for teacher–student cooperation were flexible albeit exact in general objectives and rules, particularly as to how to follow the practitioner's pre-laid teaching program and schedule by individually chosen learning activities. At least covertly all along the practitioner highlighted a trustworthy and collaborative dialogic communication, and thus provided a template for a student to select and construe her own combination of various learning strategies. The teaching scaffolds established the basis for transition to self-regulated learning; they ceased to reinforce a student's passive non-strategic learning in classroom teaching. Through coaching and intermediate feedback to the students' learning activities and its outcomes the teaching laid incentives for the students to do preparatory homework in getting familiar with the learning materials on basic learning issues to be dealt with in the next classroom session. The only normative obligation for the students' learning was to pass a written exam at the end of the program. The students' learning outcomes were assessed by a general constructivist learning scale and assessment formulas: disposition to repeat, to provide examples, to formulate general conceptualizations on the course's learning issues (fair); disposition to develop own conceptualization, evaluation with selected and nodal key points on learning issues (good result); individual attempts to construe new practical means through individual reflections, attempts to apply something in real constrained life, integrations of the course's viewpoints and conceptualizations to contextual real work and living contexts (excellent result).

The basic problem in the students' learning activities was that their preliminary home studies were not completed as strategic learning and as text comprehension activities, attuned to the general dynamic progress of the course. The students were not generally (except for a few students with basic levels of self-regulated learning skills also in text comprehension) motivated or did not find sufficient incentives to do their home studies the learning of which was necessary to obtain the higher educational objectives of the psychology course, such as doing their own conceptualizations of contextual human matters. Continuous home study of the key learning materials was crucial. The vast ma-

jority of students did not succeed at the level of comprehending psychological texts, even at the completion phase of the course. Of course, when a vast majority of the students were unable to demonstrate other crucial self-regulated learning activities and how to do learning step-by-step it was challenging for the practitioner to define which of the students' behavioral deficiencies or what skills were pivotally impaired and what behavioral skills or specific learning activities were primarily in need of enhancement by the teaching. Therefore, due to students' diffuse and complicated problems in their learning, it was thought that the students' problems in the core competence realms would be best addressed by CBT questionnaires as to how the students with divergent, diffuse or low self-esteem have a number of subjective and emotionally-based (dysfunctional and maladaptive) beliefs and metabeliefs (schemata), regarding appraisal and management of their own and other people's behaviors.

That is the reason why conceptually rich learning materials and scaffolding of teaching and students' learning are the optimal basic scaffolds to teach about human nature. This emancipates the practitioner-teacher from imposing norms on the students with regards to do further research in discovering new scaffolding solutions for a student's learning in a self-regulated realm of academic studies.

1.6 Students' impairments in behavioral competencies behind their learning difficulties

Prior to the selection of adequate CBT questionnaires for pre- and post-test measures, the practitioner must construe a preliminary functional behavioral analysis of the students' daily learning behaviors. Due to the simultaneous cognitive behavioral psychotherapy practice in clinical settings the practitioner possessed the knowledge and expertise for teaching as a scientist practitioner who concurrently conducts empirical research about the feasibility of the practice. From that perspective it is not possible for the practitioner to empirically measure the core of each student's individual learning and behavior if he stays within dualist psychological perspectives such as in nomothetic individual skills and competency realms. Instead of that approach, and in order to have a deeper psychological competency realm, the feasible approach is to stick with the practitioner's non-dual practical means to have empirical data and to perform behavior assessment of all of a target person's functional and dysfunctional behaviors.

In teaching large student groups, the non-dual perspectives to individual behavioral competencies and the assessment of the students' (learning) behaviors, albeit perhaps being any teacher's main and first intention to tailor his teaching, become occluded by common constrained and superficial and normative educational objectives and criteria to do adequate teaching. In addition, the teaching of psychology to students might place a burden on these instructive dualist practices and then confrontational collaborative discourses will become absented or even banished by educational administrators. There are no teaching templates that introduce contemporary flexible and mindfulness psychological perspectives, such as CBT conceptualizations, into individual anxiety disorders and deficits in the way that a deep behavioral competence approach does. Here, in moving onto the assessment of the students' behavioral deficits via CBT questionnaires, the practitioner's coaching, as well of the students' literary homework, provided him with data

that would point to the students' very common deficits in their uncertainty and anxiety management and the students' clinically significant anxiety disorders that were in need of being primarily addressed before having competencies to deep learning on vocational issues. The practitioner's coaching stood for confrontational and re-validating enquiry of the ways a student saw and explained her behaviors and its limitations in home studies as self-regulated activities. The students' written homework was especially enlightening regarding their metacognitive competencies in internalized restructuring because the assignments had been designed to address constructivist and realist stances to human behavioral positions. The written homework was designed differently from homework in all other courses and it did not encourage the students to search abstract general knowledge of human nature, but rather it guided them in the realm of individual dispositions to manage, to evaluate and to apply general behavioral issues and learning materials to their contextual living matters.

From the preliminary assessments of the students' behaviors in each of the large student groups the practitioner concluded that the students' behaviors did not seem to indicate clinical anxiety disorders, such as obsessive-compulsive disorders, posttraumatic stress disorders (PTSDs), acute borderline personality disorders, or depression. However, the students might experience latent anxiety behavioral problems of a number of types, which might have partially propagated from their procrastination and insufficient learning activities and partially from their more individual behavioral and developmental factors. There is a demand for a closer look at the students' attentional biases and mediocre metacognitive competencies and at a great number of different dysfunctional behavioral modes, extensively researched in CBT clinical settings.

The procrastinating students' and other students' potential behavioral deficiencies were manifested in their specific learning activities, such as passive attention to learning issues in classrooms, or increased self-focus without much attempt to dialogic interactional exchanges with classmates, or limitations or total failures to express and demonstrate text comprehension activities, or inability to take on any learning activity in the psychology course at home. Theoretically, these behavioral problems emerged in managing affections (according to the following authors' empirical research: Luecken et al., 2004; Lyubomirsky & Nolen-Hoeksema, 1995; Lyubomirsky et al., 2003; Wenzlaff et al., 2002; Zvolensky et al., 2001), and these attentive disruptions and other cognitive biases could impair the students' cognitive coping behaviors in problem-solving situations and cause impairments in their deep learning.

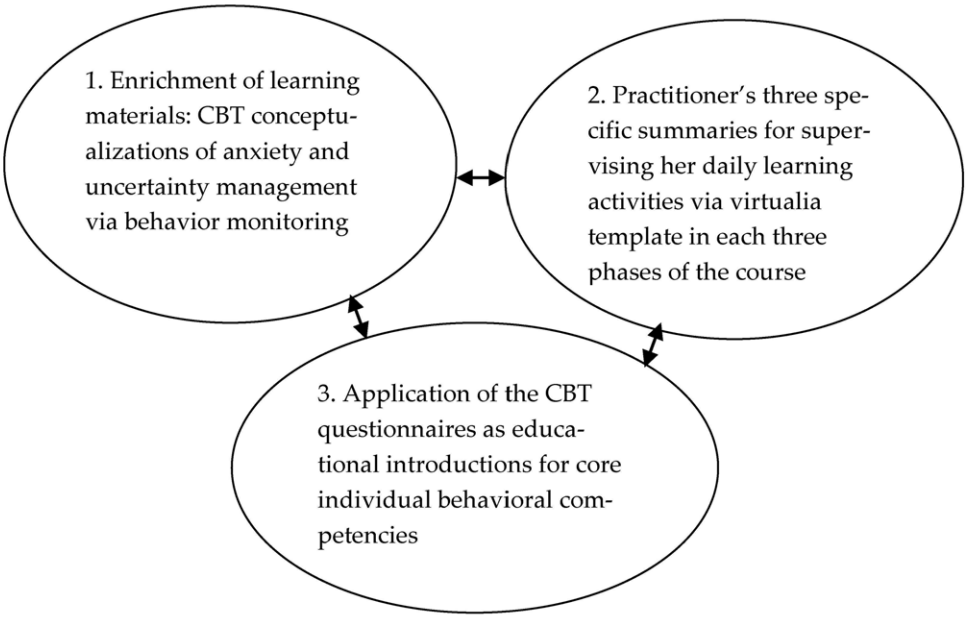
Theoretically, the functional analytic assessment of students' behavioral and learning skills and competencies abolishes the empiricist stance of researching students' behavioral deficiencies and skills impairments. The latter stance prevails at a theoretical and abstract level and a real-time-space tensed learning and teaching context at the heart of CBT behavior assessments becomes lost in the assessment and therefore there is no way for the practitioner to enhance the students' basic self-regulation competencies in their constrained social life. Therefore, the critical realist approach evades instrumentalist strategies in teaching in which tailored scaffolds to teaching and learning can be devised and implemented through behavior assessments. From a critical realist position to a structured human agency with contradictory behavioral tendencies the metacognitive man-

agement of these internal forces and all individual actions and functions are mutually conjoined. Individual's attentions, interpretations, evaluations, explanatory attributions of individual contextual behavior, or what the specific conceptualizations of these psychological functions are, these are the core of human metacognitive problem solving. Due to a lack of sufficient data on the students' many and divergent behavioral problems in their real learning, the initial broad categorization of the students' all functional and dysfunctional learning behaviors brought into the fore the assessment frameworks of the students' pre-existing social constrained life as is the initial approach in CBT clinical assessments. This assessment requires the practitioner to strive beyond dualist skills, styles or ability conceptualizations to an intensification that goes beyond skills' conceptions to behavioral core competencies, and the assessment is possible by rich data acquirement of the students' real daily behaviors. In this project, a behavioral competency CBT-position to behavior assessments was achieved by application of CBT assessment tools. This research project demonstrates that the achieved pre- and post-test settings might be valid and become consolidated in measuring the potential changes in the students' behavioral competencies onto which competencies this teaching program might have some impact. The following subsection delineates the devised and implemented enrichment of scaffolds in the teaching program.

1.7 Enrichment of teaching scaffolds for self-regulated learning

The three most workable options for additional scaffolding of the nursing students' psychology teaching program became possible to implement through the teaching template that was found to be workable and feasible in the first research project. The three

Figure 1: Mutually enforceable new scaffolds in a student's psychology studies



refinements in teaching scaffolds were targeted at strengthening the students' learning orientation to their own present individual daily learning behaviors by: introducing a direct behavioral metacognitive position to anxiety management psychologies; intensifying the dialogic teacher–student communication for reciprocal feedback of the feasibility of executed teaching and of the students' recent outcomes in their learning activities via a software template set up to manage the teaching program and time schedules in carrying out the course and presentation of learning materials; deploying CBT questionnaires to their pre- and post-test scoring for getting the students' familiar with their internal behavioral forces and behavioral patterns at work in their daily behavior management.

The outcomes of the students' scores in CBT questionnaires would be additional data from the students' behaviors and core behavioral competencies for the practitioner, and if the questionnaires turned out to be reliable the scores would support the practitioner's validation of his assessments of the students' learning behaviors and potential behavioral deficits in the students' behavior management in individual vast uncertainty and anxiety domains. The new teaching program in the intensified teaching scaffolds and frameworks is presented in Figure 1, it demonstrates how the scaffolds are mutually conjoined forming up a tensed teaching and learning template for a student's choosing of her most preferable learning activities in her psychology studies.

1.7.1 Enrichment of anxiety management psychologies in the students' metacognitive learning

Usually, psychological studies start from general abstract epistemological viewpoints and psychological conceptualizations of ordinary nomothetic human behavior also in deep individual uncertainty and anxiety-related feelings. However, especially for students with weak metacognitive competencies and self-regulated learning skills, theoretic derivations of deep rich conceptualizations of human issues turn out to be actualist theories, where psychology teaching turns to instructions to normatively manage totally incommensurate contradictory things. The enrichment of metacognitive behavioral issues in learning materials was accomplished here by providing examples and performing some general examples of ways and criteria to appraise and attribute one's individual behavioral load which either would prolong or even initiate one's experienced anxiety feelings in the use of dysfunctional appraisal reframes. For a student these learning materials provide a firm hold on individual contextual behavior in the general reframe of goal-orientated behavior under the management of individual uncertainties and anxieties the experiences of which belong to individual reflective behaviors. However, the attempt to contextualize a student's understanding of individual psychological factors in its theoretic reframe with diffuse and rather general presentation formulas in recording techniques in the real teaching practice might be not sufficient; the aim of this empirical research project to is to find this out.

When the students procrastinate they experience difficulties when their learning is passive and that results in specific delayed learning activities and a lack of energy to strategically plan their learning. If these shortcomings in individual learning are not caused by the students' individual anxiety problems the students would benefit from the practitioner's coaching and training in strategic learning. In this project, shortcomings in

individual learning will be researched by providing rich learning materials of functional and dysfunctional uncertainty behavioral issues and by empirical investigation of the students' scores in CBT questionnaires. If the students' difficulties in their smooth anxiety management and despaired emotions turn out to be broken and rigid in behavioral patterns in their daily life, then specific learning materials or the practitioner's general coaching would not improve the students' deep learning. The coaching would include introductions to deepened behavioral psychological issues entailing an individual's own understanding of human behavioral problems and deficits in all individual daily behaviors including stressful situations and daily behavior management (managing with divergent daily activities and activity programs). The introduction to deepened and rather contradictory interpretational reframes to anxiety management issues in an individual's behavior management must be performed smoothly due to the students' potential and tacit worrying and procrastination and to their presupposed different competencies in the metacognitive realm. This is achieved by providing different methods of monitoring individual daily behavior and supporting a student's understanding, and by explaining that the contextual behavior is individually appraised and dependent on one's contextually changing and malleable tacit perceptions, interpretations and evaluations of all the determinants of these behaviors. It is emphasized that there are no exact ideal norms of appraising behavioral stress, anxieties and uncertainties; they simply are continuously experienced living domains in everyone's individual daily behaviors. Improvement of individual orientations to one's daily activity management in its various, divergent and multilayered living activities can support a student's reflective, metacognitive daily management, where daily behavior monitoring is both the real realm of problem solving and the template of subjective appraisals of this behavior. Constantly highlighting the feasibility of activity scheduling by recording and use of diaries for assessing individual changes in daily rhythmic were the key issues in learning materials. They introduced vast contextual variety to individual subjective reflective problem-solving skills and competencies; these reflective competencies can be temporarily absent in mindless behavior under stress. Human stress was introduced as a contextually varying behavioral issue, for example as to how through an individual's revalidation and re-modification of daily behaviors one's psychological resources can increase when new behavioral activities become applied and exercised in one's daily life.

Theoretically, the practical stance into behavior monitoring represents the practitioner's attempts to import the entire CBT anxiety reframe to practical monitoring devices, where behavior management in managing individual uncertainties is a metacognitive and not only a cognitive issue. The importation of additional scaffolds in teaching and learning psychology might strengthen a student's own responsibility-taking in her real daily activities without continuous search for external supportive stimuli when facing daily challenges. CBT therapies, as well as other therapeutic schools, emphasize the importance of preventive health work, the core of which for an individual might be to familiarize her with anxiety psychologies more broadly than through theoretic categories, delineated as mental health problems and maladaptive behavioral symptoms. In critical realist philosophical perspectives to human life an individual's anxiety-related feelings and negatively appraised emotions are essential parts in human daily real behaviors

because daily rhythmics are constrained in ways an individual's behaviors emerge in the CBT conceptualizations. The enrichment of self-regulated theoretical conceptualization via CBT tools connotes behavior management of individual arousal, uncertainties and anxieties in all human contextual behaviors.

In psychologies of self-regulation, the philosophical issue of 'subject–object ontological dualism' emerges as a blurred, discursive human intellect. It is inconsistent with the critical realist position in which a human being, as an individual subject, finds herself being ontologically separate from external ontological things. From this, a deep behavioral issue emerges for an individual: managing with uncertainties and anxieties in behaving. Self-regulated learning and self-regulated behavior via psychological conceptualizations are based in a great number of psychological theories of human action and behavior control (Carver & Scheier, 1981; Kuhl, 1984, 1985; Markus & Wurf, 1987; Karoly, 1993, etc.). These conceptualizations in their basic philosophical notions of human mind have not been elaborated more specifically. But when these notions seem to be committed to the fault line of the primal squeeze of ontological monovalence (see Bhaskar, 1993, p. 400–401; Williams, 2007, p. 378) these conceptualizations cannot take into account a structured and internally mediated conception of human agency (see Bhaskar, 1993, p. 165) as is possible in a non-dual psychological position. In this latter position its more elaborated psychological conceptualizations allow more elaborate considerations of the ways human behavior is composed of a number of behavioral chains and cycles, as the dialectical critical realist philosophy of human being states (see Bhaskar, 1993; Archer, 2000). This metatheoretic modeling can be applied toward broad elaborations on how specific metacognitively managed behavioral activities, such as text comprehension or learning math, is generally describable as multilayered, mutually conjoined internal psychological activities. This approach is non-actualist (transcendentalist) and anti-theoretic at the core, by introducing metacognitions to this human behavior as essential parts it shows how a student's self-monitoring and metacognitive evaluation of her problem-solving actions are at work in real individual life. Metacognitive behavioral activities can also be impaired, and this is the issue here, to enhance an individual's behavior monitoring on a daily basis. It has been the work objective in CBT treatment practices but importing this approach to teaching psychology in large student groups requires the practitioner's deeper explanative understanding of the real behavioral nature of the students' procrastinating behaviors.

Metacognitive behavior monitoring might be weak, as for example described in Salkovskis' (1996) model of human behavior (Figure 2 on p. 155). Monitoring of one's present contextual behaviors might itself be impaired, limited or biased. The biased behavior control in anxiety-related behavior and its behavioral management (see also Mathews & Mackintosh, 1998) suggests the mode of selective cognitive processing in anxiety management. Metacognitive activities are malleable and under an individual's constant revision and it is necessary to return this behavior for the students' validation and revalidation. In this project, it was attempted via monitoring exercises and via the practitioner's supervision of the students' learning behavior in their daily studies of psychology. For example, individual dysfunctional acts or paying attention or concentrating on something, or making narrow and hasty interpretations, or evaluating things by dysfunctional

and rigid schematic beliefs and so on, along with their internal psychological conjoined mechanisms at work, maintain dysfunctional and anxiety-provoking behaviors. These behaviors can in turn increase anxiety and despaired mood the outcome of which is an individual's weakened and broken on-task performance.

That is the reason why instructive and normative non-collaborative teaching methods tacitly initiate basic mistrust to a student's behaviors because of their non-dialogic discourses. These discourses are unfeasible for individual comprehension and sense making of anxiety and uncertainty behavioral issues about contradictory ontological matters at the heart of which is every human activity. In addition, when the students' behavioral deficiencies are extreme and significant they can impair all their daily activities, these instructive teaching methods reinforce learning through superficial stimulus–response behaviors. This is a gap between self-regulated learning dualist psychologies and CBT-informed psychologies, through the non-dual position to all individual behavioral activities and functions the latter practices in teaching practices introduce and implement therapeutic cognitive behavioral interventions to a student's revision and remodeling of her behaviors (see for example, Reinecke et al., 2006).

1.7.2 Compression of the practitioner's recurrent feedback of the students' learning via a virtualia template

In the general surface teaching practice there are few means for the practitioner to incorporate additional tools for a student's metacognitive monitoring of her learning and its outcomes while her monitoring behavior is weak, disrupted and often focused on validating one's despaired self-reflections. As Kirschner et al. (2006) argue, minimal guidance in instruction is not effective, however, an introduction of software technologies would enrich collaborative teaching practices and vast contemporary empirical research on software recourses in education have been established.

A metacognitive and constructivist stance in psychological knowledge also stands for an individual's revisions of thoughts, even tacit metabeliefs and orientations of perceiving and comprehending one's behaviors. These metacognitive activities collapse in a great number of students without a gradual and subsequent improvement in the course's execution. A student's knowledge of human nature lapses into an actualist mode of explaining superficial daily happenstances, or making theoretic nomothetic explanations which are deduced by dual personal or environmental things.

There is an opportunity to intensify a student's evaluation of her learning outcomes in her tacit understanding of human behavior (discussed above in the introduction of anxiety psychologies) via a virtualia software template and with the teacher's educative supervision (Orlans & Edwards, 1997). Via coaching of a student at the realm of her focusing of her metacognitive beliefs also together with supervision of her learning behaviors, the increased dialogic feedback between the practitioner and a student can encourage a student to evaluate her contextual behavioral activities, to abandon hasty actualist explanations (explanations of daily happenstances) and reach a deeper understanding of human nature. The virtualia arrangement would also support the students' progress in psychological studies toward contextual and broader realms in their intensive learning activities with learning materials and practical exercises. The students would not prevail in their

despaired, fixated on theories and actualist flawed explanations of human nature and human development.

The intensified real-time feedback between the practitioner and a student might support a student to engage in a gradually deepening learning process in her own performed behavioral activities (from orientations to practicing and applying) and to attune her learning to the five-phase proceeding line and structure, which was set up as a gradually consolidated teaching and learning template in this teaching of psychology to nursing students (see Appendix V on the ways the basic five phases were gradually supplemented in the research). The practitioner's coaching, his suggestions and assertions to challenge her received feedback to the students' written work in three separate course's phases could help a student to revalidate and revise her behavioral activities in her individual psychology studies. The optional use of the virtualia educational supervision (that is coaching) would initiate a student's empirical validation of her potential avoidant behavioral patterns, her revision of initial beliefs and schemata in order to gain a metacognitive understanding of human contextual daily behaviors. Of course, the practitioner's supervision of each student via virtualia requires the supervisor's deep knowledge of the CBT conceptualization of human behavior and an extensive experience in teaching by means of rich teaching methods. However, this option to do teaching by coaching and a student's supervision of her learning behaviors would not emerge as appropriate for a teacher who is confined to dualist theory practice teaching objectives and practices or if these teaching means become abandoned by the students. In this research the teacher encountered all along the students' total refusal to do their psychology studies if the teaching of psychology was not executed by traditional theory–practice dualist instructive ways.

However, practical ways must be found to proceed in integrating non-dual psychological and practical perspectives into the teaching of psychology. When numerous students seem to develop individual and mutually interconnected behavioral deficiencies this innovation by scaffolding the students' learning behavior must be done with care. For example, there might be no effective coaching and feedback strategies for practitioner-teachers to support a student's learning as their self-regulated learning, or these consultative and teaching discourses might focus on formal instructions and feedback, which sustain and support the students' surface and normative learning, concrete learning, learning by practice with its rich individually initiated emotional-value exchanges in teaching discourses. This dualist practical template to teaching and to a student's learning focuses on middle range theoretic nomothetic, that is on actualist things. This teaching template does not provide space for a student's monitoring and evaluations, and it impairs metacognitive learning and performing metacognitive functions, internal speech and reasoning, which are at the core of self-regulated learning.

In other words, when lay learning practices consist either of theories and norms or of practical training of general work habits and norms, a student's metacognitive learning skills remain in the background and her theoretic and normative rigid metabeliefs might increase without her metacognitive evaluations. For example, a student might lapse into surface learning and learn by comprehension of the teacher's guides and instructions, as behavioral norms, and attempts to recall general theoretic concepts. In learning contex-

tual psychological issues it signifies an abrupt re-entrance of an individual's intrusive and other disturbing thoughts that impair one's deep learning behaviors. In individual's increased dualist reflection or reflecting on either one's despaired emotions or external forms and theoretic concepts, a student might tacitly turn towards safety-seeking behaviors. A student's broken on-task performance activities turn to safety-seeking behaviors and these behavioral patterns are general theoretic CBT issues in an individual's anxiety behavioral problems (see Figure 2 on p. 155). Through a modality approach, all individual on-task performance and safety-seeking activities become elaborated further in the third research project.

When there is no adequate instructive reinforcement or feedback on the students' self-regulated learning in the apparent surface learning and teaching practices it must be arranged here as a software feedback template. From there the practitioner, through his suggestive proposition and validating re-questioning, supports and guides a student to re-focus and re-appraise her real learning activities and her recent and next potential learning outcomes. When the practitioner's feedback is targeted to focus behaviors behind one's emotions and emotional appraisals then learning departs from normative learning of one's learning of common normative ideals. For example, there arise options for the practitioner to suggest to a student to pay increased attention to her perception, concentration, thinking and other activities in her goal and motivation management, such as showing that if one seeks threat clues from the environment and makes exaggerated evaluations of the internal stress and load of these mental activities then this behavior could impair further individual learning. It is suggested that a student's evaluations of her perceived challenges might be contextually arisen and thus only temporal and possible to overcome in the next learning steps. The practitioner's feedback needs to be aimed at a student's apparent shortcomings in her learning and at suggestions of divergent and opposite underlying causes behind that behavior (for example, a student's basic learning deficiencies, or her daily stress problems, or lack of specific social problem-solving skills, or tacit individual anxiety management patterns). A practitioner's accurate knowledge of a student's real learning behaviors is crucial if this kind of coaching and supervision is to be possible and practically manageable, and when this knowledge is scarce, feedback must be performed smoothly and suggestively by highlighting the need for individual choices between totally discrepant learning strategies. The constructed software template for providing feedback to each student's real learning behaviors on the three steps in the course's execution was the first attempt in this educational practice and this research project's objective to self-regulated learning. One of the aims of this research project was to find out if this kind of feedback template would be workable so that formal learning outcomes are not the focus of a teacher-practitioner's feedback but the focus is the individual identification, verification and validation of one's real daily learning activities at home and in the classroom.

1.7.3 The pre- and post-test research setting and the application of the CBT questionnaires

Internationally standardized CBT questionnaires as a pre-test and post-test setting for the students' application in this teaching practice could have three specific purposes: (1) to validate the practitioner-teacher's behavioral assessment of the students' daily learning

behaviors within the CBT anxiety behavioral reframes, (2) to measure the workability and feasibility of the imported scaffolds to teaching, (3) to familiarize the students with the contextual psychological approach to human individual behaviors. It was not known beforehand which of these objectives the CBT questionnaires would attain; in instructive teaching practices options to have a teacher–student trustworthy collaborative learning template do not arise. However, as the applied questionnaires were reliable and feasible (as discussed later), all the requirements were partly met satisfactorily in order to continue with this emancipatory teaching position in the third and fourth research projects. It was crucial to achieve a validated classification of the students' behavioral functional and dysfunctional competencies because of the vast discrepancy between the students' learning behaviors, and because concurrently quite a large part of the students demonstrated impaired reflective activity in dynamic social environments and thus weak reflective problem-solving behaviors.

Study of the nature of students' anxiety problems In large teaching groups it is impossible to objectively discover by theoretical ponderings or by observations of the students' behavior, what is the real domain of the students' self monitoring (for example, self-reflecting or on-task performance reflecting) and evaluation of their daily behaviors both in functional or dysfunctional aspects which is the deep behavioral domain of individual anxiety and uncertainty management. The practitioner's evaluations of the students' learning outcomes and of the students' superficial behavioral patterns in their learning are only and mainly evaluations of surface and normative learning outcomes and other formal theorized categorizations regarding the students' psychological matters. These evaluations would only reinforce formal and instructive education, which, as it is argued here, is the main reason for impairments in the students' metacognitive problem solving. There is an urgent need for a critical realist-informed, transcendental, realist practitioner-teacher's position in the assessment of the students' behaviors and into empirical research work of the feasibility of the teaching practice. The empirical research of the concurrent teaching practice is manageable at least in general considerations when the research is on the student's basic behavioral dispositions, as they emerge in the students' self-monitoring skills and behavioral competencies to evaluate their behaviors, the evaluation of which is the client's focus in CBT questionnaires. The students' behavioral dimensions of mutually opposite mental and other forces must be managed by them in their dynamic and constrained daily living domains and this is the same evaluative domain in CBT questionnaires, as well as in the practitioner's assessments of the students' behavioral functional and dysfunctional competencies in contemporary CBT client practices. Therefore, individual behavioral problems in anxiety management are not assessed by theoretic categories and formulations but by a student's daily living practice in its rhythmics, this is the focus.

Measuring changes in the students' anxiety-related behavioral patterns There is no international empirical research available on the utility of the specific CBT tools in teaching psychology and its learning practices. The first task here was to discover the nature of a student's basic self-monitoring skills (for example, that might stand for their latent behavioral problems similar to anxiety disorders such as worrying), and whether there could

be improvements in the students' behavioral competencies, which are probably caused by this psychology course.

The construction of introducing measurement conditions in teaching psychology presented a high risk in the teaching practice when there was no tradition in teaching discourses to focus on and to measure a student's individual all contradictory behavioral competencies through their own scoring. Also dualist skills and abilities-based empirical investigations on formal task-specific problem solving, such as writing on psychological issues, were not conducted either. The latter is the traditional and general approach to empirical research; Husén (1997) and Walker and Evers (1997) delineate the confines in which it is problematic to do research on the impact of the dualist approach on education. However, they are unable to maintain a critical realist-informed scientist practitioner's approach to measure all divergent behavioral competencies from the practitioner's assessment position advocated here. It is important to appreciate the difference between their ability fixed-skills approach and the behavioral competency position of this research, because a theoretic integration of ability and behavioral competency approaches (it was tried to avoid this in the project here) portends a lapse into theories and thus into theory–practice dualisms. A measurement of aptitudes in a self-regulated learning stance indicates remaining in the empiricist stance, as Winne and Perry (2000) elaborate. It excludes the critical realist emancipatory 'laboratory' research on behavioral competencies, which are conceived as individual dispositions the actualizing of which depends on the social constrained life. The latter is the only devisable way of scaffolding students' daily learning, and not only classroom learning, by intensive application of CBT methods.

In the previous research project the imported teaching scaffolds in self-regulated learning were successfully implemented, and generally the students significantly advanced to evaluations of their own behaviors and its outcomes in their competence realm via the implemented behavior monitoring records. Regardless of their presentation, modality-based behavior monitoring recording means do not enable execution of one's own rigid skills and abilities-based recording and activity scheduling. The modality-based behavior monitoring approach is promising if it became enriched via CBT questionnaires by providing additional data of the students' real behaviors. It is worth recalling that the deployed CBT questionnaires together with modality-based behavior monitoring and recording entail the same behavioral idea in focusing on one's daily rhythmics, and therefore they could support their practical execution in this project.

It was not possible for the practitioner in this research project to predict beforehand if any of the deployed and chosen CBT questionnaires would be reliable. If the CBT questionnaires were not reliable then the practitioner has confronted an insurmountable barrier in his scaffolding beyond self-regulated theories, and he would be forced to return back to his original scaffolding position to refine his teaching scaffolds, but not of the student's real learning behaviors. If the students were to take these measures seriously and focus on their own daily learning behaviors (reliability issue), regardless of the outcomes in CBT questionnaires' scores the importation of the questionnaires, would strengthen a student's non-dual behavior competency orientation. Also, other reliability and validity issues would weaken the questionnaires' utility in this project, for example there would arise tendencies in the students to score the implemented, standardized and atti-

tude-based (see Anderson, 1997) CBT questionnaires according to social desirability and acquiescence.

Introduction to a deep critical realist-informed view on individual behavioral competencies The aim in teaching psychology by means of CBT questionnaires was to familiarize the students with their contextual psychological approach and their daily rhythmics as well as to individual daily management. The practitioner planned that the introduced CBT questionnaires would encourage the students to learn psychology through their contextually identified (social) behaviors, the learning perspective of which would help them shed their learning from nomothetic theories and social norms which commonly intrude into a student's studies in mind–body psychological perspectives. The questionnaires introduce a student's perceived and internalized inner behaviors into the very heart of her psychology studies. The additional assessment methods can facilitate the students' understanding of human contextual behaviors, which was frequently omitted in abstract emotionally laden generalizations of the worrying and despaired students.

In presenting the practitioner's entire research configuration for the empirical pre- and post-test measuring of the students' behavioral competencies the behavioral competency position via CBT theoretic conceptualizations becomes described. This competency position is consistent with the CBT questionnaires' general reframes and practical ideas; the practical problems in the implementations of the questionnaires, as essential parts of the practitioner's behavior assessments of the students' behaviors, are shortly discussed. These theoretical conceptualizations and elaborations can show the applied approach to measuring individual behavioral competencies by CBT questionnaires, as to how every human being in her/his behavior monitors, evaluates and metacognitively monitors her/his contextual behavior and this human activity is her/his very behavior itself (face validity).

A broad view of individual human behaviors by cognitive behavioral assessment tools There is limited space in this project to elaborate on the CBT conceptualizations: the ways and the reasons of the application of the CBT questionnaires to anxiety-related behaviors. They are based on the practitioner's initial assessment of the students' learning behaviors. For example, the practitioner's functional behavior assessment of a student's behavior and learning directly means a practitioner's strong observational basis on the students' behaviors and that practical view does not allow the practitioner's recourse to theoretic positions. In addition to the teaching practice here, the practitioner concurrently works with clinical patients where he primarily utilizes CBT tools and practical guidelines; therefore, the practitioner's assessments of the student's daily learning behaviors and all behaviors are similar to the CBT assessments in clinical settings. As the first research project already described through the preliminary scaffolding of this teaching practice in the earlier teaching projects, the students' behavior assessment came out as relatively similar to CBT-functional behavioral analysis at the level of student subgroups, at least in the post-test measurements. For the practitioner the assessment enabled the evaluation of the impacts of the teaching program on the students' core behavioral competencies. The pre-test measures in the CBT questionnaires informed and established the general guidelines for additional scaffolding of student learning, as turned out to be justified in the third and fourth research projects, described later in this report.

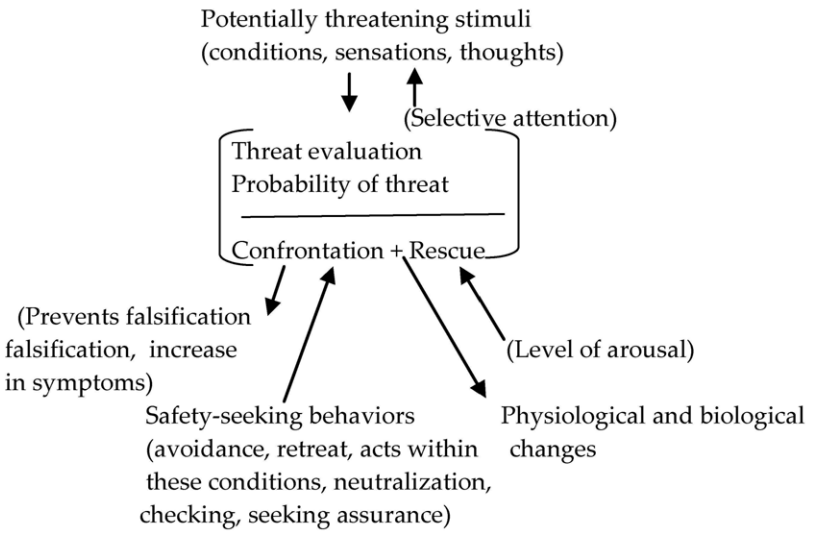
It is possible to deepen the constructed and CBT-informed practitioner's assessment position because of the practitioner's many years' experience of teaching psychology, and the basic scaffolding to foster the students' self-regulated learning in the first research project was successful. Collaborative practitioner–student dialogues became rich and persistent albeit that there were many students who continued with their diffuse and superficial learning and completed only the minimal three official literary learning tasks required for passing the course. Therefore it is self-evident that the practitioner has achieved a teaching platform through which he becomes aware of the students' behavioral patterns and problems in their learning and daily life. Thus the practitioner can focus on each student's behaviors more deeply. In theoretic terms, the practitioner becomes aware that a student's attention, interpretation, evaluation and meta-evaluation might be flawed, biased and limited, as has been much researched during the past decades in CBT research. Salkovskis' (1996) model of biased cognitive activities in Figure 2 provides a general description of how these impaired behavioral developmental features in a student's behavioral activities might manifest, but the model does not elucidate the contextual behavioral factors of how dysfunctional individual activities might have more dominance over all other and a more functional individual's behavioral activities. Coaching of a student's behavior in her daily learning is crucial to support the assessment in deepening the understanding of a student's daily learning and living contexts.

Individual difficulties to perform functional behavioral activities and acts can be included in a student's evaluations and revisions in this teaching practice. This is the general reframe for the CBT questionnaires that promotes the idea to construct a set of validated questionnaires in an extraction of validating data on the students' multidimensional behavioral domains and on their behavioral problems. If possible, through the questionnaires, it is essential to evaluate the practitioner's covertly performed assessment of a student's behaviors for broad, divergent and distinct practical research and teaching purposes. Worth recalling again is that the tools for assessing a student's self-regulated learning behavior diverge from self-regulated theories and their conceptualizations, which Schunk and Ertmer (2000, p. 634) formulate as three self-efficacy phases of self-regulation behavioral activities.

A practitioner's core focus in CBT psychotherapeutic practices in a client's behavior assessment is on a client's behavioral deficiencies, for example on cognitive and interpretative biases, on increased self-focused perception and on disrupted concentration on one's on-task performance activities. Salkovskis' (1996) model (Figure 2), in the maintenance of dysfunctional psychological functions elucidates the practitioner's initial approach in the assessment. Although excluding other psychological social and material realms related to that behavioral model in anxiety management, such as metacognitive psychological functions, the model delineates how a restricted and self-focused reflection could have gained very dominant and behavioral activities that would have a deteriorating role in an individual's behavior management. The dominant self-reflection is tantamount to the general CBT reframe of avoidant behaviors that is an essential issue to be challenged, re-appraised and abolished in clinical psychotherapeutic work with clients that have anxiety and emotional problems.

The practitioner's observation of a student's behaviors, his motivational interviewing and other means in data acquirement of her daily behaviors together with her scores in

Figure 2. Psychological factors maintaining the interpretations and evaluations of the experiences of threat and anxiety (Salkovskis, 1996, p. 53)



CBT questionnaires provide the practitioner with means to assess her behavior because a student's potential behavioral symptoms and problems (as avoidant behaviors) manifest and reside at the level of her real daily behaviors. Also, in this teaching practice, the practitioner's definition of a student's target behaviors in need to be enhanced primarily in the CBT assessment is the practitioner's workable and feasible working objective by scaffolding a student's learning. The CBT questionnaires would play an essential role in this application to teaching in compensating the practitioner's lack of any direct objective pretest data on a student's behavioral competencies and deficiencies at a general level in the practitioner's adherence to the international CBT criteria for understanding a client's anxiety and behavioral problems and disorders. The CBT understanding of individual behavioral deficiencies, especially of a client's impaired reflective problem solving and a weakness in their intentional 'out-of the blue' actions, is consistent with the general teaching objectives in learning about human nature. This perspective, if applicable here in lay teaching practice, could provide means to a student's re-challenging, validating and revision of her real (learning) behavior in the next research stage, which will probably be taken if this project turns out to be successful.

The practitioner concentrated on the option of applying the CBT questionnaires in order to validate his initial assessment of the students' learning and behavioral competencies, and of their behavioral deficiencies. Functional behavioral analysis of each student's all real behaviors is not manageable with students in large student groups. However, in this project the assessment is executable along the lines of functional behavioral analysis at least in the specifically categorized students' subgroups. Through definitions of a student's target behaviors it becomes possible for the practitioner to define and devise the educational objectives in the psychology course more accurately because the

teaching objective in the course of psychology is to strengthen a student's social and behavioral skills and competencies. A specific psychotherapeutic case formulation along the lines of cognitive behavioral psychotherapeutic practices would not add much to these assessments and to the practical execution of workable teaching and learning scaffolds in large group settings. Rather this kind of assessment would merely be too focused on a student's dysfunctional behavioral patterns, and would not support all the divergent students' learning at their own pace which would decrease trustworthy teacher–student communication which was evaluated as the practitioner's highest priority in the execution of this teaching.

The CBT questionnaires needed to be implemented in a way that did not interfere with a student's ordinary learning process in the course or in her other studies. Primarily it meant that these questionnaires totally focused on empirical research about the workability and feasibility of teaching psychology in the realm of the students' behavioral competencies. Thus the outcomes in the questionnaires were not related to a student's personal and other individual factors, such as a student's learning outcomes in the psychology course. In addition to the CBT-general functional behavior analysis protocol the critical realist stance in the scientist-practitioner's work and assessment position to the open social cube reframe provided the practitioner with the entire setting to his assessments of the students' behavioral competencies that included potential pre- and post-test changes.

Assessment of the students' learning behavior by functional behavioral analysis It was delineated that behavioral assessment and its refined form–functional behavior analysis played an essential role in reframing the practitioner's assessment to the social cube-expanded behavior assessment that was tacitly taken in this project and became established as adequate in the third and fourth research projects. Worth recalling is that this expanded functional behavioral analysis of a student's daily learning behaviors is not based on secondary data or on her oral or written delineations of her recent behaviors, but is primarily based on the practitioner's observation of a student's real behaviors. This kind of functional behavioral assessment of a student's behavior and learning is directly focused on defining a student's target behaviors as her educational objectives in her studies of psychology. The assessment's philosophical roots are largely based on and are explainable via critical realist conceptions of human knowing such as referential and dialectical detachment, retroduction and retrodiction (Bhaskar, 1993); this philosophical elucidation to lay firm grounds to contemporary CBT elucidations of behavior assessment protocols is not the issue here. This philosophically rather diffuse general approach to a client's case formulation, performed as a functional behavioral analysis in education, is focused both on an individual's behavioral symptoms and on behavioral targets (as objectives in education and therapeutic work), as well as on targeting her behavior at her individual encountering of new and more demanding learning objectives. It is broader than "the identification of the patient's central underlying psychological problem", as Hayes et al. (1999, p. 295) define by quoting Person's and Curtis's case formulation, they do not sketch or outline a real option to execute functional behavioral analysis of a client's all behaviors, behavioral problems and target behaviors in group settings. It is thought here that this outlining would necessarily require a practitioner's social cube position but in these behavioral assessment positions to closed systems it is not possible. If an ex-

panded functional behavior assessment is valid in group settings (as happens in the next research project) it necessarily would require a practitioner's confinement to open constrained social systems.

Functional behavioral analysis as a specific behavior assessment of a client's behavior assessment procedure in contemporary psychological research and practice can be elucidated and elaborated in very different ways because its philosophical bases have not been in core-elaborated analysis and critical evaluation. When evaluating these assessment procedures in dialectical critical realist terms, here the assessment was performed so that a student's behavior was also assessed by taking into account not only her behavioral competencies but also her deficiencies that were entrenched and dynamically related to her real multilayered behavioral activities. This approach by eschewing rigid inductive–deductive reasoning approaches in its deeply dialectical reasoning allows the practitioner's designs of multileveled and divergent target behaviors for the students in given subgroups where the focus is not on alleviation of a student's symptomatic behaviors. This broad stance to functional behavioral assessment is crucial in education and preventive health work where social real nourishing practices to the students' metacognitive and all behavioral skills are at work.

The initial stance in the functional behavioral analysis in the departure from limited focus on symptomatic behaviors is rooted in mindfulness psychologies. Sternberg (2000) delineates that mindfulness behavior is not a set of intrinsic abilities but rather a personal trait and/or cognitive styles. His delineation is diffuse and although not seeing open totalities as an adequate psychological approach to psychological entities he cannot outline the path beyond dualist psychological positions as seems his intention. The functional behavior assessment becomes expanded in this project later on, but here it means behavior assessment of a student's functional and dysfunctional behavioral learning styles and cognitive functions. For example, the students' surface learning, although excluding their reflective activities, might be functional when perceived from the educational administration perspective if the educational ideal would be to perform surface learning of epistemic norms and theories through dualist instructive communicative discourses.

In this functional behavioral analysis approach the practitioner’s aim is to perform assessments of the students' behaviors and daily learning in order to discover and reach conclusions regarding the student's behavioral and learning competencies and, vitally related to these competences, behavioral deficiencies. Many CBT practitioners have elaborated and outlined assessment procedures and practical execution, see for example Barlow (1993), Naugle and Follette (1998), Wells (1997) and Haynes and O´Brien (2000), from this it emerges that behavior analysis and behavior assessment are crucial parts in effective psychotherapeutic practices in many crucial ways. Here the assessment of the students’ behaviors and the students' potential behavioral deficits were accounted for but great care was taken not to lapse into pathologic empiricist research positions where the students’ target behaviors would remain diffuse with no practitioner’s sound practical options to address the students’ target behaviors. The students’ potential behavioral deficiencies can be assessed only in the CBT-informed behavioral realm as individual functional and dysfunctional behaviors by defining the maintenance of things as deep underlying social-psychological and other mechanisms to the psychologically conceptua-

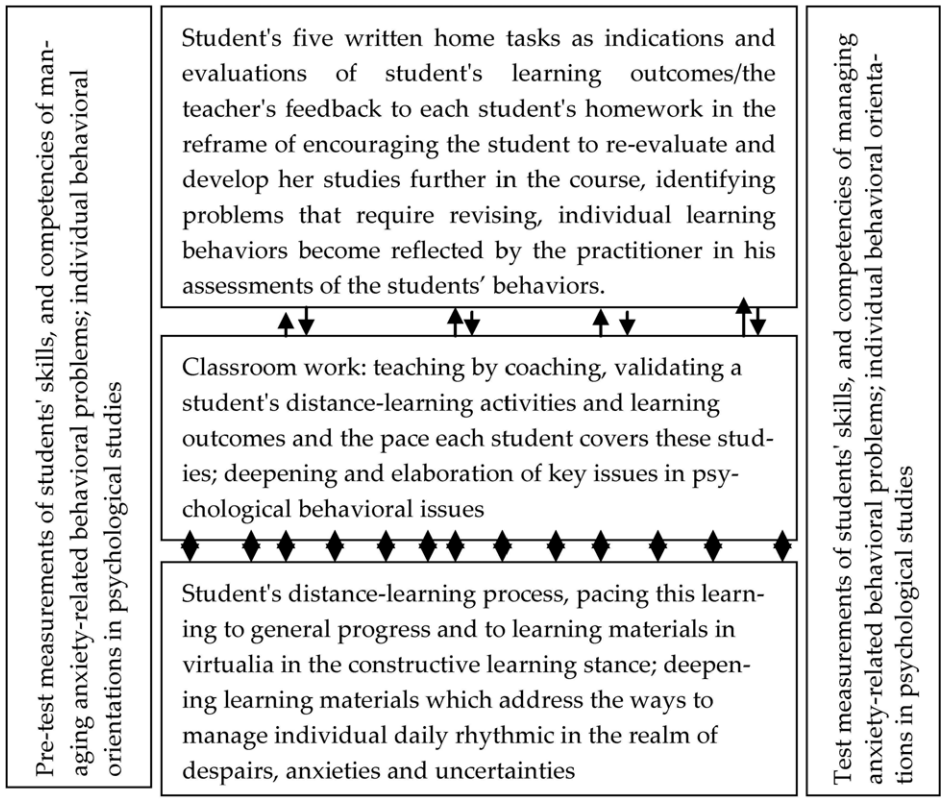
lized behaviors. This research project affirms whether the practitioner can accomplish this kind of functional behavioral analysis in this teaching practice adequately and lay firm grounds to practical programming of the students' learning of psychology. Here, in this project, the practitioner's potentially emerging option of a specific laboratory program is only a theoretical issue. It is pointless to develop it further in this phase of reporting, however, it might be necessary in the next probable steps of this research project.

2. THE CONFIGURATION OF SCIENTIFIC DISCOVERY

2.1 The entire research structure

This invented critical realist stance of empirical emancipatory-oriented research, similar to a research in laboratory settings, contains two main practical steps that require further elaboration. The first step is to delineate and retroduct students' self-regulated

Figure 3. The general teaching and learning package as a teaching process in psychology



learning behaviors in general psychological behavioral terms, where their behaviors are neither internal mental operations and mechanisms nor overt behavioral reactions and responses to external environmental stimuli, but both of these in human reflections as the behaviors become reflected by the practitioner in his assessments of the students' behaviors. The practitioner's approach to the assessment of the students' behaviors was delineated above in general descriptions of anxiety-related behavioral conceptualizations (see pages 142–144).

Delineations of the strategy to choose adequate CBT questionnaires and their practical pre- and post-test execution belong to the behavior assessments of the students' behaviors. CBT questionnaires were imported into the teaching practice and were targeted at measuring empirically both the students' behavioral competencies and the students' potential anxiety-related behavioral problems. This issue of the students' behavioral competencies is detailed further in the report via the practitioner's derivations with formulations of the main researched behavioral dimensions and the students' presupposed main behavioral and anxiety problems that required confirmation (or falsification) by the research, if the chosen CBT questionnaires were reliable.

The other research problem was to find out, via analyzing the students' scores in the CBT questionnaires, if the constructed laboratory program to enhance students' behavioral competencies had any positive or negative impacts on their behavioral competencies and skills. Figure 3 presents the entire re-constructed teaching program as a package of learning scaffolds and in practical scaffolding to which the first research project soundly laid basic frameworks as was presented earlier in the research report (see page 87).

2.2 Validation of the practitioner's functional behavioral assessment of the students' behavior by the CBT questionnaires

For the students with diverse learning and self-regulated behaviors, the validation of their learning behavior and concurrent deficiencies requires CBT assessment tools as explained above. This approach requires a detailed description of the most adequate measurement tools in the empirical research of the students' competencies and deficiencies in the teaching setting.

2.2.1. The CBT questionnaires as tools for measuring the students' behavioral competencies and the feasibility of imported learning scaffolds

There are no specific problems for the application of CBT questionnaires to the teaching of basic psychology, however the requirement for intensive measurement of a student's progress in her self-regulated learning is a recognized problem in CBT reframes. Simpson et al. (1997) observe that questionnaires posed to students and student interviews are problematic because they rely on the students' self-reports. A similar problem is mentioned in Schmitz and Wiese's (2006) empirical research report of measuring students' improvement in self-regulated learning. The aforementioned researchers ignore the fact that CBT therapeutic conceptualizations and validated assessment questionnaires in the use of non-clinical and clinical work directly entail the deep realm of contradictory behavioral tendencies through which the client in her rhythmic life classifies and eva-

luates her recent behaviors. A client's scores are not only diffuse and coincidental characteristics of her behaviors. In scoring the questionnaires the students do not assess practitioners' and researchers' preconceived incommensurable behavioral things only as overt patterns or specific theoretic entities but they assess their entire functional and dysfunctional daily behavior through their metacognitive reflections the reflections of which are essential parts of their real recent behaviors.

A transition from teaching to scaffolding learning was accomplished in the first research project and moving that to the practitioner's realm requires a measurement of a student's behavioral competencies and a potential decrease of her behavioral deficiencies (for example, as dysfunctional behaviors or as cognitive biases). These empirical results are essential features in the students' learning outcomes when learning is not merely theoretical conceptions without real practice and its assessment. Here, the application of CBT questionnaires is problematic because the students' clearly have quite a loose touch to their real behavioral management and its scrutiny in their strong dualist orientations to learn of theories through which they irrationally expect to be in real practice. If these students' orientations are dominant, then the reliability, for example in internal consistency of the measurement items remains weak, regardless that in other client populations the measurement has proven to be reliable. On these students' dualist and on-theory focused learning and assessment orientations, the new introduction of CBT questionnaires that required their focusing on deep and subjective behavioral issues would cause considerable stress, because it informs a totally divergent perspective to individual learning from the students' dominant surface learning orientations.

The practitioner's logic of importing the CBT questionnaires into the students' learning of psychology is not entirely explicit here. The logic is based on a combination of the earlier fulfilled teaching practices by the practitioner and on his throughout description, elaboration and assessment of the students' learning deficiencies at the level of their real behaviors and learning. During the past ten years that the practitioner has carried out his psychotherapeutic practice in clinical settings he has exclusively employed CBT psychotherapeutic work and consultation of clients with clinical and non-clinical emotional and behavioral problems, the practitioner's therapeutic knowledge and experience put a pronounced emphasis on assessing clients' behaviors by observation and other acquired data. It is necessary to bear in mind that the research work, as well as the scaffolding of students' learning in their psychology course to introduce positive changes in essential behavioral domains of their behavior control, could cause impairments as well as improvements of the students' basic competencies. Therefore the introduction of anxiety psychologies and the CBT questionnaires into the students' learning is both a grounded practitioner's objective and a demanding and elaborate task to increase their understanding of deep behavioral issues in human behavior and in its anxiety management. If a student actually experienced anxiety and had clinically significant behavioral problems, this additional challenge in scoring the questionnaires would cause stress and interfere with all her learning. Because the practitioner had grounds not to expect that this would occur on a large scale in this project the purpose of the project was to intensively continue with teaching from the constructed scaffolds without recourse to teaching conceptual theoretic abstract psychological issues.

The practitioner's behavioral assessment of the students and of their real social life is a combination of behavior assessments that is not restricted to their learning behaviors in classrooms. The first research project demonstrated that classroom teaching by any rich means would not invigorate the students' deep learning activities that are needed in a student's participation in classroom coaching and to deepen her learning of psychological issues. In large student groups possibilities to supervise each student's basic learning according to her behavioral needs did not arise in spite of the accomplished advanced scaffolds to pre-adults' and adults' self-regulated or deep learning, not even for the students' with more learning and social problem-solving skills. If classroom teaching had been primarily targeted at the students with shortcomings in their crucial learning activities even via their supervision of their stepwise problem-solving activities it would not bring out any significant outcomes regarding the students' behavioral patterns and their skills regarding their behavior monitoring of their learning behaviors.

2.2.2 The applied questionnaires address essential domains in individual self-regulated behavior and its learning

The practitioner's initial definitions of the researched individual behavioral domains along with the implemented CBT questionnaires were generated and implemented from the CBT-informed assessment positions. The measured domains had wide theoretic roots in an individual's management of her daily rhythmics, the individual behaviors of which within her rhythmics were open to the practitioner's assessment of a student's behavioral functional and dysfunctional competencies. The practitioner's reflection in the assessment and interpretation of the outcomes in CBT questionnaires was informed by CBT conceptualizations of anxiety-related behavioral patterns as the conceptualizations emerge in contemporary CBT psychotherapeutic practice and its research. The practitioner's assessment of the students' behavior by also integrating the students' outcomes in CBT questionnaires is not explicitly delineable here, but at least basic features emerged through the empirical analysis of the students' outcomes in the CBT questionnaires. Empirical analysis of the outcomes of the CBT questionnaires provided a face-valid picture of the students' evidently only latent various anxiety-related behavioral problems which might impair their reflective deep learning activities and occlude their initiatives to skills acquirement. The practitioner's initial assessment in the first research project already indicated that the students only rarely suffered from clinically significant and manifest anxiety behavioral problems, such as depression, obsession, borderline disorder or post-traumatic disorder. The main measured behavioral domains were necessary to connect to the practitioner's observational and other data about the students' real learning behaviors for conceptualizing and categorizing and explaining within this CBT reframe of their individual dysfunctional avoidance patterns in their anxiety management. Because the two mentioned spheres are mutually opposite extremes of individual behavioral competencies, the measured domains are not delineable or in need of delineating in strict conceptual terms. However, a reader not familiar with CBT conceptualizations and approaches to behavioral dimensions in anxiety behavioral patterns can directly read presented outcomes of each questionnaire's variables in the following Table.

1. Research domain: The students' behavioral learning styles and their pre- and post-test changes
2. Research domain: The scope and stability of the students' anxiety-related behavioral problems
3. Research domain: The divergence of the students' behavioral styles of managing uncertainties and anxieties

The practitioner's descriptions of the students' learning behaviors, attained in the previous teaching projects and in the vast descriptive survey (Puttonen, 2002, unpublished report) as well as in the first project, indicate that the students might possess latent anxiety-related behavioral deficiencies, most frequently worry and rumination. The behavioral pattern to worry suggests in an individual's anxious thoughts all the imaginable potential threats the individual imagines to be encountering, the worrying is one's despaired thinking of interpreted and imagined individual losses in the past. Similar to generalized anxiety behavioral disorders the students' maladaptive behavioral patterns seem to be mostly latent among the students. The students in question seemed to control their concurrent behaviors by specific behaviors the purpose of which is to alleviate their anxiety-related feelings but the outcome of these activities could be the student's prolonged anxiety-related despaired feelings and thoughts.

The utilized CBT questionnaires were selected and deployed carefully (without lapses into either abnormalizing or normalizing of a student's behaviors) into the students' scoring for their addressing of their general and broad behavioral constructs of their general behavioral features as indications of the strength and dominance (either functional or dysfunctional) over individually perceived subjective recent behavioral patterns. In a student's evaluations and scoring she might perceive her recent behavioral patterns as positive or negative, presented for her scoring by the practitioner's questionnaire's items, as is the common and richly workable approach in contemporary clinical CBT practice and its research. A student's scores in a deployed questionnaire's single item at least indicate, but evidently also directly demonstrate, her present behavioral patterns and orientations in the CBT core competency realms regarding the measured anxiety management dimensions. A student's scorings in anxiety behavioral domains together with the practitioner's other data of the student's behaviors provide the practitioner with a holistic picture of the strength of a student's core functional and dysfunctional competencies in her anxiety management behaviors. The practitioner's knowledge of the students' real behaviors would both inform his next steps in scaffolding the students' learning such as in tailoring their coaching and supervision.

The chosen CBT questionnaires are targeted to individual behaviors and the ways an individual perceives and evaluates her daily behavior regarding each questionnaire's specific behavioral sub-dimensions. These constructs are not theoretical, however, the practitioner's single-case data analyses are not delineable in more detail here, but at least the basic causally relevant behavioral dimensions are presented as the main empirical results to the research problems and become integrated in the broader CBT conceptualizations of anxiety-related behaviors as contemporary general knowledge in CBT psychotherapeutic practices inform. A student's scoring directly demonstrates (if the question-

naire is reliable) how the individual in her concurrent behaviors deals with her subjective internal and external perceptive, interpretative and evaluative behavioral actions and activities: how she tacitly or more consciously discovers and appraises her concurrent behaviors. These empirically researched constructs are primarily based on the idea of how an individual's functional or dysfunctional perceptions, interpretations and evaluations are her real generalized behavioral features the behavioral regularities of which behind her behaviors affect or to some degree determine her present behaviors in her constrained daily life. This is the critical realist perspective as was broadly outlined by notions of referential detachment, transcendental and dialectical arguments. Therefore, these empirically measured behavioral constructs do not require pre-theorization but they do require the practitioner's theoretic considerations as new explanations and validations of the attained empirical outcomes**.**

2.3 Research problems and questions

The preliminary methodological question is: are the selected CBT questionnaires reliable in their internal consistency in their sub-dimensions regarding divergent competency domains so that they as standardized indicators of the severity of a student's anxiety-related behavioral and emotional problems validate the practitioner's initial assessments of the students' behavioral competencies and deficits in these competencies? The positive assumption proved to be true in each of the questionnaires with some restrictions (as presented below). The results on the reliabilities are presented together with the introductions of these measurement questionnaires.

Research problem 1 What are the students' basic learning styles regarding their deep or surface learning in informing their reflective learning competencies, and what is the stability of the students' learning styles during the course?

Research problem 2 This research domain is later called 'the scope and stability of the student's anxiety-related behavioral problems.'

What types of behavioral anxiety-related deficiencies do the students most frequently demonstrate in these questionnaires? Are there grounds for the students' behavioral problems to remain latent and not as clinically significant behavioral and emotional problems, which latter case in teaching of psychology would warrant the psychoeducative importation of additional scaffolds to the exercises of metacognitive behavior monitoring in learning? What various and specific types of latent anxiety behavioral problems might the students suffer from that would suggest the need for adequate scaffolding of their learning by incorporation of CBT treatment methods in the students' metacognitive learning, for example specific protocols to behavior monitoring exercises?

Research problem 3 Is there an option to reach subgroup explanations of the divergence and the stability of the students' behavioral competencies? This research domain is later called 'the categorization of the students' behavioral competency styles'.

Are the newly introduced and implemented additional scaffolds to teaching for fostering the students' self-regulated learning a sufficient and workable composition in teaching, both in enhancing the students' basic functional anxiety-related behavioral competencies and the students' deep learning? In other words, is this teaching course optimal

and effective to increase and reactivate the students' basic problem-solving skills and behavioral learning competencies?

If all CBT questionnaires' measurements together with the practitioner's other acquired data from the students' daily learning behaviors enable the practitioner's evaluations in the lines of various multivariate factor analytic analyses then the practitioner is capable of reaching validating arguments about the workability and feasibility of the teaching of psychology to pre-adult and adult students in nursing. The case would mean the presentation of the practitioner's conclusive judgmental estimations in explicit scientific terms, whether the scaffolding is optimal or requires a revision in the next research project. If the validation succeeds in the expanded reframe of assessing the students' learning and its outcomes in their individual competency realms, it might enable the practitioner to perform a comprehensive assessment of the students' competencies (similar to functional behavioral CBT assessment in client settings) and to define the students' target behaviors as his practical teaching objectives that must be enhanced by additional scaffolding of their learning.

2.4 The relevancy of the selected CBT questionnaires for specific behavioral sub-dimensions

2.4.1 The first issue: reliability of the CBT questionnaires

The practitioner's scaffolding of his teaching of psychology was performed in two large student groups of about thirty students each. In both groups, a detailed examination of the students' anxiety related-related behaviors and of their potential behavioral problems was performed: a 40-minute pre- and post-test group CBT measurement that turned out to be manageable for the students' scoring. In each measurement condition it was stressed to the students that the questionnaires were only targeted at research about the feasibility of the constructed teaching course, and plans for its further improvements in order to optimally meet the students' needs in these educational objectives. According to the empirical results, both of the groups were homogenous and some discrepancies between the groups did not belong to the research problems directly and were not analyzed in explicit terms, some group characteristics were analyzed by taking into account the course's place in the students' present educative program and the students' loads to complete all their present learning courses.

In this research the reliability of the questionnaires was directly related to an internal consistency or the questionnaires' specific behavioral dimensions and sub-dimensions that consisted of approximately five items each. This analysis was crucial in order to have sufficient face validity so that the students' potential deficits in their anxiety management could be analyzed, and to analyze whether the implemented scaffolding would be workable and feasible. The students' scores as their direct evaluations of their recent and current behaviors are the nodal point and crucial indicator of their metacognitively managed individual behaviors. The reliability of the single CBT questionnaire deployed in this program depends mainly on a student's beliefs that these questionnaires will be utilized strictly for the researcher's scientific and primarily educational purposes, and not for

evaluating a student's personal characteristics or for her learning and its outcomes. A great amount of care was applied to the practitioner-teacher's instruction and construction of the research project in order to keep the practitioner's research objective totally separate from the practical teaching and from the students' learning. The practical separation of real teaching and its empirical research seemed to work perfectly when teaching, and the students' daily learning and their progress was the only objective in teacher–student discourses. The successful separation between the practical teaching and the execution of its empirical research diminished crucial flaws in reliability, especially regarding the CBT questionnaires' social desirability and acquiescence problems.

Ethical problems do not arise in utilizing assessment questionnaires in learning when the course is targeted toward a student's self-regulated learning and behaviors, which is itself the core learning domain to learn about human nature in contemporary non-dual knowledge perspectives. In that learning of psychology a student does not learn nomothetic theoretic concepts but becomes empowered to obtain knowledge about her ways of appraising and evaluating her actions and learning. The focus on one's individual behaviors is itself an essential part in every student's problem-solving behaviors at the level of mindfulness and metacognitive problem-solving activities. When the same measurement questionnaires are presented at the beginning and at the end of the course's program a student can also obtain personally relevant information directly from the practitioner's consultation regarding changes and possible development in her behavioral skills and competencies. The theoretical stance behind the chosen CBT questionnaires is broad and sophisticated in its elaborations on many stress and anxiety behavioral problems; see for example Beck (1987), Borkovec (1994), Clark (1986, 1999) and Wells (1994, 1997, 2000, 2004).

Although there is no ethical problem in the utilization of the questionnaires, their reliability is not necessarily the same as in the case of a clinical use, or they might have no validity in this teaching practice at all. The problem lies primarily in the utilization of the questionnaires for measurement of both clinically significant anxiety problems and non-clinical latent anxiety behavioral deficiencies. The basic practical problems are such that the CBT questionnaires might not be reliable for all three research problems and purposes, thus careful reliability analysis regarding measured domains' internal consistencies is necessary. If internal consistencies are high, and the measures are internationally standardized as reliable, it also connotes that these measures did not impair the students' ordinary learning and did not cause adverse effects on the students' behaviors. The practitioner also observed that the students took these questionnaires seriously; at least that demonstrated their dedication to improve their basic behavioral patterns and thus their underlying competencies. Contrary to the positive outcomes regarding the reliability and validity problems in the deployment of the CBT questionnaires to the teaching of psychology, it was reasonable to expect reliability and validity problems in this ordinary teaching when the students have demonstrated their manifest tendency to attribute their present behaviors largely and often dominantly through circumstantial coincidental dualist behavioral determinants.

2.4.2 The practitioner's practical reframe to the application of the CBT questionnaires

The CBT questionnaires' focus is on an individual's functional and dysfunctional problem-solving competencies in anxiety and uncertainty management. The practitioner was keen on selecting the questionnaires, which would be reliable both in clinical and non-clinical populations, because they have often been invented and designed in clinical CBT practices. Therefore it was necessary to establish whether these evaluative methods, such as the questionnaires regarding anxiety disorders, possessed reliability and validity in the realm of learning and teaching about human nature and reflective (not formal) problem solving.

The initial learning obstacle in psychological studies is individual reflective problem-solving behavior, and thus in deep latent realms it is the same as learning about human nature in academic studying. Therefore, it was simple to address the question of the added value and importance they could import to a student's learning and the teacher's instructions in the sense of self-regulated learning. The answer would be that in surface learning, although concentrating on researching impacts of specific teaching methods, these questionnaires are ineffective; in that teaching, there is no need to apply them. However, in this teaching, in the self-regulated realm, if the usability of these questionnaires is successfully achieved and they validate the practitioner-teacher's initial assessment of the students' apparent divergences in their behavioral competencies, practical knowledge regarding teaching and learning processes will be attained for further implementations of the accurate and feasible optional scaffolds of the students' learning.

The strategy of selecting four specific possible questionnaires for each student in one session was as follows. From the CBT perspectives, multilayered behavioral chains in individual management of anxiety-related mental contents are fundamental issues in human creativity and well-being. By minimal psychological categorization behavioral chains can, and do, emerge for the individual and for the practitioner as either safety-seeking behaviors (Salkovskis, 1996, 1999), or on-task performance behaviors. These main behavioral domains are covered by each CBT questionnaire's set-up by specific sub-dimensions regarding individual anxiety management, both in functional and dysfunctional mutually conjoined dimensions in real life. Table 1 contains the list of the chosen CBT questionnaires. Self-regulated functions and behavioral mechanisms are multifaceted and internally conjoined, and the CBT stance, structured and dynamic, is a realm of constrained forces, so the items in these questionnaires might be homogeneous (one-dimensional) or not. Thus, because the sub-dimensions indicate different and opposite forces behind individual behavior management, the CBT questionnaires are not only traditional measurements of attitudes (see Anderson, 1997, pp. 888–889) because both reliability and validity problems require to be accounted at the same measurement time. For example, in the following research, the Two-Study Process questionnaire (Biggs et al., 2001) is not one-dimensional in the realm of student learning behavior where the students' problem solving vacillates in contradictory learning approaches and practical activity directions.

Theoretically, the homogeneity in the general researched issue of students' avoidant behavioral patterns in the selected CBT questionnaires is high. Therefore, the selected

questionnaires are the measures of perceived, generalized or generalizing criteria of individual key competencies, or corner capacities of individual behavior management and its metacognitive control**.** Thus, linearity and reproducibility are satisfactorily met in these questionnaires (Anderson, 1997, p. 889). Measured 'attitudes' are key individual competencies towards individual behaviors and they also inform the lack of concurrent behavioral dispositions and capabilities to act, as potentially contradictory competencies really emerge and reside in human daily behavior. For example, these questionnaire measurements could indicate latent or manifest difficulties in dealing with despaired moods or as highly developed mindfulness competencies that allow and guide individual daily behavior. The one dimensionality of despaired and rigid problem-solving behavior or behaving mindfully becomes adequately attended to and addressed in their extreme behavioral patterns and forms. A deep key in CBT-informed assessment positions taken here as to uncertainties and anxieties is that if an individual tacitly takes as granted her daily problems and uncertainties it supports her functional problem-solving behavior, and if she specifically focuses on those internal despaired emotions as difficult and harmful to her behavioral management it connotes to her avoidant and dysfunctional behavioral positions and behaviors.

Of course, reliability problems in the questionnaires selected (Table 1) are apparent and must be expected, for example, social desirability and acquiescence obviously weaken questionnaires' discriminative ability. Although the students have divergent, both functional and dysfunctional, competencies beyond their behavior management, single-case analyses strive to establish conclusions and validating remarks regarding the feasibility of the imported teaching program, addressed to the students' behavioral competencies as the researched problems. The results in internal consistencies in measured anxiety sub-dimensions are the results that indicate the actual state of the students' behavioral competencies and behavioral tendencies. The reliability issue is addressed differently by empiricist researchers who aspire to context-independent abstract generalizations of supposed nomothetic psychological mechanisms.

Table 1. Implemented CBT questionnaires as pre–test and post-test measures in the psychology course

Group B1	The Two-Factor Study Process Questionnaire (R-SPQ-2F, Biggs et al., 2001)
	The Event Impact Scale (Horowitz et al., 1979)
	The Anxious Thoughts Questionnaire (AnTi, Wells, 1994)
	The Thought Control Questionnaire (TCQ, Wells & Davies, 1994)
	Interpersonal Sensitivity Index (IPSM, Harb et al., 2002)
Group B2	The Two-Factor Study Process Questionnaire (R-SPQ-2F, Biggs et al., 2001)
	The Anxiety Sensitivity Index (ASI-R, Deacon et al., 2003)
	The Thought Control Questionnaire (TCQ, Wells & Davies, 1994)

When the selected CBT questionnaires are used both in clinical settings and as general empirical measures on non-clinical populations, the problem of establishing evaluative analysis criteria for educational purposes arises, especially in the case of young female students' developmental living circumstances. It requires an assessment, different from

ordinary clinical assessment criteria of assessing the scope and severity of a client's behavioral problems and symptoms, which has a solid basis in the teacher's overall preknowledge of a student's daily behavior at a subgroup level. For example, minor pre- and post-test changes between subgroup means can be taken as the real results in the assessment reframe when the stability is not a theoretic issue regarding theoretic behavioral constructs to be generalized as universal laws, but potentially divergent pre- and post-test means implicate a moderate, even an adverse, impact of the imported specific program on the students' behavioral competencies. The problem of attaining a functional behavioral analysis remains and depends on the practitioner's assessment, not on the specific means of the questionnaires, although generally the crucial measured dimensions are not linear within the functionality and dysfunctionality reframe. The reader, who lacks familiarity with CBT clinical work and practice, might experience difficulties in comprehending the practitioner's entire spectrum of holistic, causal and transformative social relations to be assessed together with a student's functional and dysfunctional (avoidant) behaviors in this assessment. For example, individual worrying behavior could emerge through many manifest divergent behavioral modalities and that behavior has a dynamic relation with the strength and fluency of individual reflective problem-solving behaviors. So, a student's scores in 'worrying' items, as understood on an interval scale, requires her other scores in the questionnaires for the successful maintenance of a functional behavioral analysis stance of dialectical and causal relations between the behavior management dimensions purported here.

Therefore, the deployed general reframe of assessing empirical results in the questionnaires works for emancipatory educational purposes; low or high means in a questionnaire's (depending on the direction of this questionnaire's specific item) dimension or sub-dimension indicates an individual's behavioral problems (scope, severity) in managing problem-solving activities in her daily life and in self-regulated learning in academic settings. All questionnaires are one dimensional in each sub-dimension, an individual's score at one extreme indicates difficulties and dysfunctional behavioral patterns in anxiety management and at the other extreme indicates high mindfulness activities that enable self-regulated learning.

The maximum combination of questionnaires to be applied to one session measurement was adequately solved; the students were capable to concentrate on four or five separate measures, although there was only one basic issue: assessment of a student's own actual daily behavior. The implemented questionnaires were selected for the purpose of addressing clinical problems of worry and rumination and general problem-solving competencies at the level of the students' actual intrinsic and extrinsic behavioral acts and activities. This behavior assessment, as a CBT-informed practitioner's work, does not measure theoretically presupposed, specific psychological mechanisms of mental and behavioral control either at the individual or at group levels. Nor was the research targeted at finding the exact nature of anxiety-related behavioral problems they might indicate, compared with the applications of the questionnaires in clinical settings.

The selected questionnaires were purported to have other positive effects in the enhancement of self-regulated learning, they might have informative value for the students, for instance, what is the deep behavioral realm of human behavior, which is not theoretic

and abstract, but a subject behavioral matter. They might strengthen students' interpretative and critical stance in subjective orientations to and understandings of human nature and behavior. The selected questionnaires were targeted at self-evaluations of individual behavior and at the subjective metacognitive level these evaluations could be reliable. The validity depends greatly on these questionnaires' utility for educational purposes, such as whether the practitioner has other general observational and other knowledge on the students' learning behaviors and changes that are consistent with the students' scores in CBT questionnaires. To this validity objective also belong the evaluations of the severity of a student's behavioral problems at the level of her uncertainties and anxieties, and the practitioner's interest in a general understanding of the types of target behavior in the students to be enhanced by deploying and introducing specific monitoring scaffolds to their behavior monitoring and learning.

Each questionnaire is briefly featured in this report based on its theoretical basics and the practical objectives of its implementation; in addition, the reliability of specific items along sub-dimensions and/or in the whole set of items is required for pre- and post-test comparisons.

2.4.3 The introduction and the reliability of the CBT questionnaires

The students completed their scoring in the chosen questionnaires carefully with extremely rare omissions in single items. At the first measurement it was stressed to the students that the questionnaires would be used for educational purposes only with the objective to develop education in their psychology studies. Also it was proposed that the students would have a subjective advantage of these measures for their own interests by requesting individual feedback from the practitioner outside teaching sessions.

Empirical results of the reliability of the questionnaires used in both the student groups are presented together. It seemed to be a viable solution to select the most effective CBT questionnaires for both groups and for the discovery of other optional measurement tools in the anxiety-related behavioral domains investigated for establishing accurately the nature of
the students' dominant avoidant behavioral patterns. At the beginning of the teaching and its empirical research it was reasonable for the practitioner to perform a more elaborate analysis of the students' potential psychosomatic behaviors and of their weak and diffuse self-esteem and of their phobic social behaviors.

The Two-Factor Study Process Questionnaire (R-SPQ-2F, Biggs et al., 2001*), groups B1 and B2* In this research the choice to use one measurement tool of various questionnaires to measure students' learning behaviors and their residing underlying psychological dynamic and contradictory behavioral constructs was quite logical because many contemporary questionnaires in their standardized use focus only on dualist mind-constructs. Here it was not adequate because the measures of all the students' divergent learning patterns and behaviors on which the implemented teaching program might have an impact must be accounted for and covered. It is important to notice that the chosen measure indicates the students' actual behavioral patterns as their evaluated regular behavioral

tendencies and therefore the questionnaire is not a traditional scale to individual attitudes.

Dualist measurements, such as discerning individual personality characteristics, are not adequate where the practitioner's focus is on the students' real behavioral styles and orientations, to which purposes Biggs et al. designed the Two-Factor Study Process Questionnaire (ibid., 2001, p. 137). The other crucial point in choosing this questionnaire was that it differentiates the two basic learning styles, which was the main research objective: to find out whether an almost complete lack of deep-reflective learning activities could be invigorated by the teaching program. However, it turned out that the R-SPQ-2F-questionnaire was not valid because it did not specifically discern the students' highly advanced self-regulated learning behaviors. Therefore it is reasonable here to see that by comparing the questionnaire scores to other available data on the students' real learning activities the questionnaire overestimates the emergence of a student's actual deep learning and its specific metacognitive behavioral activities.

In spite of these limitations in reliability and validity the questionnaire is at least informative for the practitioner's detailed single-case analyses and it also is sufficiently reliable in crucial aspects of measuring the potential changes between pre-tests and post-tests in deep learning, which is the main research objective. The purpose is to discover whether the students' divergent and fragmented real behavioral activities are stable and to bring out positive post-test changes in the students' deep daily learning in their recently started nursing studies. Although these psychological studies were executed differently compared with the other ordinary courses the students indicated in their scoring on the practitioner's inserted extra item, whether they evaluated all their daily learning behaviors or primarily evaluated their learning behavior in psychology studies. Results indicated that the students were not particularly interested or active in acquiring new self-regulated learning competencies in these psychology studies. Their focus on studying was not specifically their learning as real behavioral activities, but receiving the most appropriate teaching. Thus they almost without exception assessed the general learning habits that they applied in other nursing studies.

Biggs et al. (2001) discovered that the 20-item questionnaire (a Likert scale: A = not typical of me; E = extremely and very typical of me; or in reversed direction) in large college student groups was valid in picking up students' most characteristic learning pattern(s) with regard to its four sub-dimensions. These sub-dimensions were motivational deep learning, strategic deep learning, motivational surface learning and strategic surface learning, and each sub-dimension comprising five items featured specific and manifested behavioral habits and learning activities. In this research the reliability of the questionnaire turned out to be more problematic when following up the research projects two or three years later. As Table 2 indicates, the reliabilities in the four sub-dimensions generally remained relatively low although generally acceptably high for further analyses. It was concluded that the students in encountering a new and, to their earlier learning patterns, disconfirming learning environment in this project continued with their tacit initial learning habits from which they had received confirmation in their other learning courses.

Table 2: Internal consistencies of learning dimensions (the R-SPQ-2F) in learning groups B1 and B2 (Cronbach's alpha)

	Group B1 (N=22)		Group B2 (N=23)	
	deep learning	surface learning	deep learning	surface learning
start	0,63	0,63	0,82	0,83
end	0,79	0,76	0,82	0,88

In spite of the reliability problems in internal consistencies of the measured dimensions, this questionnaire was reliable in measuring changes in the students' general dominant learning patterns in deep and surface learning. Other optional and already standardized questionnaires were not found which were not initially stuck with the dualist learning position into measuring ideally deduced stable constructs behind learning. For example, Waugh's (2002) questionnaire of studying and learning would have been more reliable, if the purpose was to research the students' learning attitudes and not their entire individual actual learning behaviors. However, measuring only personal attitudes here was senseless because this research did not concentrate only on personal psychological skills and abilities as does the common empiricist stance. There was a lack of adequate questionnaires for measuring students' learning behavior that would have been sufficiently sensitive to individual behavioral changes. Here, the applied theoretic objective was to measure a student's behavioral competencies and deficits along the lines of a critical realist position to human knowing; an individual is competent to know of her real behaviors directly through her own referential detachment activities.

Fortunately, the practitioner obtained other data on the students' real learning behaviors through his teaching practice via observation, via coaching the students' learning activities, via his records of the students' classroom attendance and via the students' four separate and deepening written homework. This data was an integral part of the practitioner's assessment of the students' daily (learning) behavioral patterns and changes that occurred there.

The Event Impact Scale (Horowitz, et al., 1979), group B1 The Event Impact Scale consists of 15 items on a Likert scale (0 = not at all; 4 = very often), the scale was introduced here to support the practitioner's aim to build a conception of the intensity of the students' suppressive behaviors. When an individual confronts abrupt threatening and compelling thoughts she tries to actively suppress these imagined threats from consciousness. The scale provided information for the practitioner's assessment of the strengths of the students' safety-seeking behaviors. Students' might use safety-seeking behaviors to directly alleviate their despairing and compelling negative thoughts; as is common from a CBT perspective into PTSDs and in obsessive-compulsive disorders. This knowledge was important in order to find out whether progress with teaching inter-

Table 3. Internal consistency of sub-dimensions in the Event Impact Scale, Group B1 (N=22)

	intrusions	aversions
start	0,77	0,81
end	0,87	0,83

ventions such as homework exercises and monitoring would be possible. If intrusive thoughts were often manifest and urgent in the students then it would not warrant the application of tailored behavior monitoring exercises because these exercises could increase their stress and they might try to avoid this via their safety-seeking behavioral acts and activities.

As Table 3 demonstrates, the questionnaire is internally reliable and could be valid if the option that the students would have significant anxiety problems of suppressive kinds is excluded, but it is not valid in the measurement of potential changes in the students' intrusive and aversive thought patterns. Through the practitioner's other rich data of their behaviors it seemed that the students, in their tacitly worrying procrastinating behavioral styles, could not apply this measurement to the assessment of their mild or moderate intrusive and aversive thoughts in their present pre-adult living and unexpectedly changing living circumstances. The students simply were not enthusiastic to dwell on these deep behavioral issues in this vocational educational setting. In their pre-adulthood life the students might not possess strong and spontaneous metacognitive orientations to consider all their covert creative, intrusive and avoidant thoughts, and their encountering of these thoughts did not receive much reinforcing stimuli from this normative superficial learning practice. With the lack of adequate and flexible preconceptions about anxiety behavioral management issues in human behaviors the students implicitly might have found their sudden and threatening thoughts as harmful or dangerous that needed to be controlled and excluded from their behaviors, at least in the teaching settings. The distorted distribution in the intrusive and aversive dimensions also indicated that the students experienced stress that might have impaired their distinguishing of real manageable threats from imagined and not manageable threats. In the metacognitive learning reframe the students' apparent loose focus on all their mental activities indicates the need to apply tailored CBT methods to the students' daily living in teaching, at least for psychoeducative and preventive purposes, so as to be aware that individual intrusive thoughts are an essential part of individual creativity. The students' spontaneous suppressive intrusive and aversive behaviors, such as their weaknesses in awareness and spontaneous control of their attention and its sudden disruptions, might not have been obsessive and therefore in this teaching program there might emerge novel options for guiding the students to drop their procrastinating behaviors.

As the results in Table 3 indicate the internal reliability was sufficiently high in both intrusive and aversive sub-dimensions. However, partly due to low standard deviation in the sub-dimensions or due to the measurement's low content validity, the questionnaire seemed not to have the potential to differentiate between the small pre- and post-test changes in these two behavioral patterns and whether the teaching program had any meaningful impact.

The Anxious Thoughts Questionnaire (AnTi, Wells 1994), group B1 The Anxious Thoughts Questionnaire comprises 22 items on a Likert scale (1 = almost never; 4 = almost always). It was selected to measure the students' latent (non-patient) as well as their clinically significant anxiety problems among the sub-dimensions: social worry, health worry and

metaworry. This measurement tool was pre-considered as feasible out of a number of available options in order to validate the practitioner's pre-evaluations of the students' potential anxiety-related behavioral problems. The practitioner's assumption was that students did not suffer from clinically significant and specific anxiety problems, such as from depression, specific fears and phobias and from persistent psychosomatic problems, therefore this questionnaire would be adequate for measuring the students' clinically symptomatic as well as their latent anxiety problems. This reasoning seemed to be an adequate approach combined with the practitioner's other knowledge of the general state of the students' health and of their various psychosomatic symptoms. The students evidently experienced difficulties in dealing with their uncertainties and anxieties, which only seldom manifested as clinically specific and persistent anxiety problems.

There has been empirical research on the questionnaire's reliability and other measurement characteristics and the measurement has proved to be reliable both in non-clinical and clinical adult populations, as Wells' (1994) research affirmed on undergraduate students of 19–34 years of age. In the international factor analytic research across clinical and non-clinical populations, the measurement tool comprised three sub-dimensions of self-worry, health worry, metaworry (Wells, 1994). In this research (see Table 4) the questionnaire did not seem to have much discriminative ability in measuring the students' latent and manifest anxiety problems and of potential pre- and post-test changes in these behavioral problems in the introductory psychology study course. This might have been due to its application into the learning settings where the students might not have been inclined to assess their strategies to meta-control and to manage with their anxieties without a clear picture of the questionnaire's purpose in this teaching program. The measurement might have had low content validity (Cronbach's alpha) because of the social desirability of one's being capable to manage anxieties without any foreseeable possibilities of the ability's sudden improvement in current educational nursing studies.

Table 4. Internal consistency of the AnTi in three sub-dimensions. Group B2 (N=23)

	social worry	**health worry**	**metaworry**
start	0,81	0,80	0,75
end	0,88	0,89	0,81

It was concluded that the measurement was reliable and valid in this project, especially in its three sub-dimensions that were internally consistent both in the pre- and post-test measures. As becomes demonstrated later, the students' means in the questionnaire's sub-dimensions indicated directly that the students' potential anxiety problems might have been latent and only moderate. It is likely that these anxiety problems were not often deeply entrenched into the students' behaviors, for example in forms of persistent obsessive-compulsive behavioral patterns as might happen in hypochondria.

The Anxiety Sensitivity Index (ASI-R, Deacon et al., 2003), group B2 The questionnaire primarily focuses on symptomatically appraised and perceived dysfunctional anxiety experiences. Scores in each item indicate the level and scope of one's appraised and per-

ceived internal anxiety-related feelings found as disturbing and unwanted. Thus the measure is strongly related to one's perceptions of one's dysfunctional behavioral patterns in individual anxiety management. First, in this teaching practice one's deep behavioral tendencies to somatize one's anxiety-related stimuli were addressed by the ASI-R-questionnaire in order to familiarize the students with ordinary internal appraisals to somatic stimuli. Second, if the students often had clinically significant somatization tendencies it would have indicated their specific anxiety disorders and behavioral problems such as obsessions. Third, psychological knowledge about human behaviors would mean that the students' potential somatization tendencies would significantly drop in the pre- and post-test measures. Due to the questionnaire's distorted distributions on single items here the measure did not provide pivotal data for the practitioner in his assessment of the scope and strength of a student's potential anxiety-related behavioral problems.

The original ASI measurement was constructed by Reiss et al. (1986) and revised by Deacon et al. (2003) along with their factor analytic studies. The new version consists of 36 items and it comprises 4 sub-dimensions. The scoring of items is a Likert-type scale. For example: "When my breath becomes irregular, I fear that something bad will occur"; 0 = wholly agree; 4 = wholly disagree. In introductory courses of psychology Deacon et al. (2003) researched the questionnaire's statistical characteristics in specific sub-dimensions and structures on university students (N=558). They obtained four separate factors: 1st factor – beliefs of catastrophic outcomes of somatic sensations (14 items); 2nd factor – fear of general observable anxiety reactions (10 items); 3rd factor – fear of disturbances in cognitive control (9 items); and 4th factor – fear of somatic sensations (10 items). For the practitioner's practical work the questionnaire is very informative in demonstrating how an individual behaves in the individual realm of one's physiological sensations, interpretations and evaluations. Here the measurement indicates the students' behavioral disruptions and impairments in their smooth metacognitive problem-solving behaviors.

In this teaching practice the practitioner's aim was to introduce the students to deep behavioral issues in uncertainty and anxiety management. The questionnaire turned out to be sufficiently reliable in the group of 19 students (see Table 5). All correlations between the questionnaire's items in each sub-dimension and the total correlation are extremely high both in the pre- and post-test. The main problem in its application for having a deeper explanation of the students' subjective focus on their behaviors was that in their developmental phase the students were not accustomed to be aware of or more consciously to appraise their ordinary anxiety-related feelings and experiences in their concurrent learning and all daily behaviors. The students' implicit high stress and anxiety feelings might have initiated their avoidant behavioral patterns that are common in anxiety-related behavioral problems as is discovered among clinical populations.

Table 5. The ASI-R: reliabilities (Cronbach's alpha) in four factors or sub-dimensions, group B2, N=22

	factor 1	factor 2	factor 3	factor 4	total measurement
start	0,95	0,79	0,80	0,89	0,96
end	0,96	0,81	0,90	0,87	0,97

For the research purpose of measuring slight and latent changes in these specific behavioral competencies this measure was not suitable. In this non-clinical population of nursing students the measure did not possess a strong discriminative validity in measuring potential dysfunctional behavioral patterns. The students apparently took their anxiety-related meanings to indicate their maladaptive emotional problems because the ordinary teaching in nursing deals with these vast and social life issues by dualist mind–body and technical means thus losing the entire spectrum of all functional and dysfunctional activities in the management of arousal and its regulation. They might have been inclined to conceptualize these anxiety-related issues superficially, while not having much discursive communicative tools in inner speeches to manage these internal feelings.

The students' dropouts in the questionnaires' scores were also common because approximately a third of the students in the group did not complete the evaluation. However, it was concluded here that the measure broadly indicated the students' divergent orientations in subjective behavior control, and especially demonstrated that the students did not experience clinically significant anxiety problems in their private tacit behavior management. The measure apparently did not possess discriminative ability with regard to the students' normal anxiety experiences and subjective appraisals. But for the practitioner the questionnaire's scores provided a rough estimation of the potential pre- and post-test changes in the students' behavioral tendencies to somatization.

The Thought Control Questionnaire (TCQ; Wells & Davies, 1994), groups B1 and B2 Consistent with the critical realist perspectives to individual modalities The Thought Control Questionnaire was taken here so that the practitioner could acquire multidirectional data of the students' behaviors and data for his elaborated behavior assessment of the students' behaviors regarding the research problems. The questionnaire comprises 30 items that address tacit different thinking styles to manage with one's anxiety experiences, and in factor analyses these basic styles emerge as six sub-dimensions. The practitioner analyzed the students' scores in the questionnaire both in-group and subgroup as well as in single-case analyses. These analyses and the practitioner's specific conclusions of the single-case analyses are not delineated more explicitly here because of the practitioner's integration of his observational and other data to a student's present behaviors. In this report this measure was primarily used to exclude the students' severe dysfunctional anxiety-related thinking styles and to assess changes in their thinking styles that might be potentially related to the scaffolding of student learning in the psychology course.

The questionnaire was originally constructed and validated with non-clinical people by Wells and Davies (1994) and it focuses on measuring individual thinking styles for managing with one's unwanted or negative thoughts. Reynolds and Wells describe the ways in which thinking styles can be dysfunctional in obsessive-compulsive disorder, PTSD, and generalized anxiety disorder (1999, p. 1089). For example, intrusive thoughts can maintain dysfunctional behavioral styles, such as disruptive processes in problem solving, inventing divergent and contradictory behavioral thinking options and finding logical and optimal actionable behavioral plans. Here the questionnaire's six-factor solution seemed to provide data that were feasible for assessing the students' problem solving and behavioral competencies in their daily learning. There are available elaborated con-

siderations, such as how to apply the TCQ–questionnaire's data in individual behavioral assessment. For example, the distraction and reappraisal sub-dimensions and their relation to the worry sub-dimension are complicated issues that require the practitioner's integration of other data of the students' behaviors and intensive multidirectional reflection of the relations between the individual constructs.

Reliability of the TCQ The questionnaire focuses on measuring individual thinking styles that emerge as six distinct dimensions or factors. The reappraisal sub-dimension is an important indicator of the ways a student focuses and re-appraises her tacit thoughts. Contrary to its clinical uses, an individual's intensive restructuring of tacit anxiety-related thoughts does not necessarily mean that a student has maladaptive behavioral patterns.

Table 6. TCQ -questionnaire: Reliabilities (Cronbach's alpha) in six sub-dimensions, groups B1 and B2

	reappraisal		worry		social support*		behavioral ritualization		self-punishment		distraction	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
start	0,85	0,68	0,93	0,84	0,83	0,69	0,87	0,82	0,84	0,75	0,80	0,57
end	0,80	0,85	0,87	0,89	0,88	0,67	0,63	0,93	0,73	0,91	0,85	0,82

* Three items in social support sub-dimension measure were reversed in order to construct a one-dimensional measure of a student's tendency to seek and to have social support. It might be too strong, thus indicating a tendency for safety-seeking behavior initiated by a student's anxiety feelings. When it is high, it could impede her on-task performance in its reflective realm of self-regulated behavior, e.g. in a classroom session.

Based on the results in Table 6, the six-factor solution was here considered to be reliable and feasible in each sub-dimension with a few exceptions in which the Cronbach's alpha is only 0,67 (or below) also in the post-test measurements. It is noteworthy that in the second teaching group the students experienced difficulties in evaluating their distractive thinking tendencies. The reason could be that the students conflated thought distraction with thought suppression when taking into account that the same students at the start of the course through low scores in reappraisal demonstrated difficulties in evaluating their reappraisal thinking strategies. The application of the TCQ introduced new options for evaluations of the students' potential anxiety behavioral problems and of the potential changes between pre- and post-test measurements. As discussed at the end of this report, regarding the students' thought suppression patterns, the specific interpretative issues in behavioral assessment of a student's thinking styles remains unsolved.

The TCQ in the assessment of the students' potential anxiety-related behavioral problems Theoretically, assessing the functionality of the specific thinking strategies as common behavioral styles in non-clinical and clinical people remains a problem. As Wells and Davies (1994) and Reynolds and Wells (1999) suggest, in non-clinical people high scores in reappraisal might indicate a positive behavioral strategy if it is not positively related to high scores in the worry dimension. Here it is argued that rumination and worry is a dysfunctional behavioral pattern at least when it is connected to strong distraction and to low reappraisal. Extreme strategies of seeking social support (not at all, or sharing all things with significant others) might be dysfunctional in psychiatric patients. This di-

mension was not used in its clinical purpose but was specifically used for measuring a student's tendency to share things with others. If the student's sharing is high it indicates to her potentially high safety-seeking behaviors that could disrupt her spontaneous awareness (referential detachment) of social and environmental dynamic and contradictory real things. Thus a student's strong search for social support could potentially impair her reflective problem solving in dynamic living conditions while concurrently experiencing lack in dynamic social problem-solving skills. Interpretations of the students' scores in the distraction sub-dimension also require the practitioner's specific evaluations of the students' daily behavioral patterns. An especially high tendency to distraction could be functional in clinical patients but in non-clinical people it could be dysfunctional because of its close relatedness to, and initiating impact on, thought suppression. High thought suppression has been unanimously considered as a dysfunctional behavioral strategy. In this project high distraction was viewed as a dysfunctional thinking strategy on the part of students because they were facing dynamic and challenging social problem-solving situations in their daily living and vocational learning.

The practitioner's purpose in the use of this questionnaire was to acquire broad and divergent data of the students' styles to controlling their thoughts in order to obtain individual data on each student's behavioral and anxiety problems. This questionnaire comprises six separate sub-dimensions of thinking styles, related to the strategies of managing challenging and anxiety provoking thoughts. For example, if a student's mean on reappraisal is low and her mean on distraction is high it could demonstrate a student's moderate problem-solving competencies in behaving individually and contextually, in particular if she concurrently relies on social support (social control sub-dimension) as her strong strategy for managing despaired thoughts and feelings. By contrast, a student's high means in ritualistic behavior or self-punishment (two other TCQ subdimensions that here do not have a specific discriminative ability) could indicate her underdeveloped problem-solving competencies when they are related negatively to high reappraisal.

The specific educational objectives of the utilization of the TCQ were different here from clinical settings. High means on reappraisal did not necessarily indicate obsessive behavioral tendencies when ritualistic and self-punishment sub-dimensions were low and the means on the distraction sub-dimension were simultaneously high. Specifically, the social support sub-dimension was a measurement for establishing whether a student's locus of control or her self-monitoring of cognitive problem-solving action was weak or strong. The six items sub-dimension was originally used clinically for indicating extremes, such as not sharing any personal feelings and so on or sharing all the time with others. Contrary to this use, here the dimension was reversed for covering one dimension. After these adjustments a student's high mean in social support (control) was taken as an indicator of her weak self-regulation and of weak self-monitoring of her on-task performance control. Therefore, here, the use of this sub-dimension departed completely from the earlier clinical evaluations (see, for example Nolen-Hoeksema & Davis, 1999) where sharing emotional problems and feelings with others was regarded as positive because sharing was considered to relieve a client's worrying. The reason for the different application of the social support sub-scale in the academic environment here is that students

with apparently underdeveloped dialogic social skills and diffuse self-concepts or with low assertive behaviors did not find themselves in a position to more accurately interpret received positive feedback on their behavioral self-efficacy in dynamic problem-solving conditions. In this project a student's low assertiveness was considered to be in direct relation to her low reappraisal and high worry in the TCQ sub-dimensions, which in turn might have been the outcome of her insufficient or broken concentration on her cognitive problem solving.

To summarize, although this questionnaire was not applied here for clinical diagnostic purposes, the practitioner's experience with this assessment tool when combined with his other student data allowed him to ascertain (as the later results show) that only a few students potentially suffered from clinically significant anxiety disorders. The conclusion was based on the practitioner's other data on the students' behaviors, gained through his observation and through other CBT questionnaires and via the students' written texts as their conceptualizations of behavioral issues as well as their omissions to complete the written task. The practitioner's behavior assessment of the students' behaviors was accomplished in the lines of functional behavior analysis where his observation of the students' behavior played an essential role.

An intensive case study analysis approach was required by the TCQ and the other deployed questionnaires in this assessment, these procedures or their outcomes are not explicable in this report, neither did these issues belong to the main research objective. The results were presented only for delineating the students' differences in their functional and dysfunctional thought control behaviors at a subgroup level. The means by which each of the six sub-dimensions were evaluated in relation to each other is theoretically based primarily on recent researchers' works (Wells & Davies, 1994; Reynolds & Wells, 1999; Coles & Heimberg, 2005) and on the practitioner's clinical psychotherapeutic experience to apply this questionnaire in client settings. The main difference between the assessment of the questionnaire's results and the evaluations in clinical settings was that here the assessment of the exact nature of student's behavioral problems in relation to anxiety disorders was not required. Its assessment sphere was general and non-clinical, as to how to research the students' general divergent and potentially diverging behavioral patterns during the course. Additional attention was paid to analyses of the relations between re-appraisal, worrying, social support and distraction subscales on each student's means. For example, if a student's mean in reappraisal as a subscale mean was relatively low and lower than worrying and distraction in these academic dynamic living conditions it might have indicated the student's insufficient metacognitive skills or weak smooth management of individual automatic thoughts, and the smooth handling of these thoughts is pivotal in a student's metacognitive or reflective problem solving.

The Interpersonal Sensitivity Index (IPSM, Harb et al., 2002), *group B1* In continuing with the behavioral competence realm to empirical research the main purpose was to get a psychological explanation of the students' procrastinating and insufficient on-task performance in the students' basic social competencies and weak social behavioral patterns. The students might have felt strong and even fundamental despaired emotions in social situations, as Harb et al. (2002) imply; a fear of being socially rejected, for which expe-

riences they constructed the Interpersonal Sensitivity Index. An individuals' behavioral hypersensitivity to interpersonal things has been widely considered as an important and pivotal risk factor for depression. The individual with interpretative biases of her social relations is a much researched issue in social anxiety disorders, such as social phobias, fears and avoidance of specific social stimuli; these deficits restrict an individual's on-task performance management. The questionnaire has been validated in internal consistency in its three separate sub-dimensions (interpersonal worry and dependency, low self-esteem and unassertive interpersonal behavior) both in clinical and non-clinical people. Here the research goal was to gain empirical data whether the students' locus of control, according to Baumeister et al.'s (1994) concept, in communication is focused on having immediate emotional and positive social feedback on their behaviors and on their selves. If a student has that behavioral tendency her hypersensitivity to social feedback could impair her persistent on-task performance and cognitive problem solving to goal-directed behaviors.

Through the practitioner's observations of the students' behaviors in ongoing teaching discourses something seemed to hinder the students' intensive teamwork and dialogic communication in classroom sessions. The students were mostly in pre-adulthood developmental phase and their tacit conversational discourse patterns might rely more on external feedback whether manifestly provided or not. More often the students might have concentrated on soliciting positive feedback in confronting and appraising ambiguities and conflicts in social situations. More generally, in critical realist terms, the student's oversensitivity and perhaps a restricted self-reflection and lack of comprehension of the great number of the contradictory determinants in individual behavior is the same psychological behavioral dispositional feature. It might have explained the students' frequently disrupted and weak behavioral chains in their on-task performance and management of uncertainties and anxieties in social learning situations at least in classroom sessions.

In adult, vocational psychological studies there are developmental objectives to increase and learn about human behavioral matters in realms of reflective and non-formal problem solving where individual mindfulness behaviors become expanded towards encompassing all intrinsic and extrinsic behavioral forces beyond these individual social behaviors. These developmental objectives might be achieved if students do not possess crucial pitfalls in their behavioral and social skills and if their behavioral problems are not entrenched in dysfunctional behavioral patterns in managing their worries as for example is the case in social phobias and social behavioral problems. In 1985, Kuhl elucidated contemporary dualist categorizations of individual behavioral patterns: that when an individual's uncertainty management is diffuse and ambiguous by one's reflecting of all individual emotional senses by viewing meanings as one's true behavioral determinants ('state orientation'), the individual does not concentrate on others' reactions in order to validate and revise her current 'action orientation' or her on-task performance behavioral activities.

Initially the questionnaire on behavioral difficulties and dysfunctional ways of managing metacognitively with interpersonal behavioral matters was constructed with 36 items but became shortened to a 29-item version, which was proved as reliable (Cron-

bach's alpha) in its four through factor analyses established sub-dimensions (see Harb et al., 2002). The items comprise a large variety of social sensitivity matters and regarding the adequacy of functional social handling each item is ranked in both directions (Likert scale: 1 = this problem is common for me; 5 = it is not common for me).

If a student's means in the total index were high then it indicated deficiencies in her social behavioral competencies, as might be the case when some of her means are high in one or some of the questionnaire's specific sub-dimensions. The items encompass a variety of interpersonal behavioral matters as to how someone is specifically orientated to interpersonal relations the specific behavioral matters of which were not possible to analyze in detail in this report. According to Table 7, low self-esteem and low assertiveness sub-dimensions were not reliable and they did not render analyses of the potential impact of the psychological course on the students' behavioral social competencies. When the questionnaire's total scores were reliable it did not necessarily indicate a student's behavioral problems in many wide and largely incommensurate social competency realms because many of the variables in each item were distorted and the items' standard deviations were low. Thus the measure's social desirability effect seemed to be a problem that needed to be accounted for in further analyses. In their pre-adulthood developmental situation the students faced many challenges and tasks and attempted to acquire new behavioral skills for meeting new environmental standards effectively and satisfactorily. It seemed that social sensitivity as total index and interpersonal worry sub-dimension were satisfactorily internally consistent and thus they were the most important factors needing to be analyzed here in order to evaluate for example if the students might have had significant social phobic behavioral problems. Also Harb et al. have asserted that the questionnaire total score is a good criterion for measuring clients' social anxieties and hypersensitivity to interpersonal rejection (ibid, pp. 975–976). But low internal consistencies in the self-esteem and assertiveness sub-dimensions provided direct data of the students' developmental situation: they indicated that the students' diffuse and dissociative

Table 7. Internal consistencies of sub-dimensions in Interpersonal Sensitivity Index, group B1 (N=26)

	interpersonal worry	low self-esteem	low assertiveness	total
start	0,78	0,53	0,39	0,80
end	0,86	0,55	0,61	0,86

conceptions of themselves emerged here in contradictory, flexible and unfamiliar social situations when they faced new and more challenging adult living and learning conditions. In addition, the differences in Cronbach's alpha in pre- and post-tests in the low assertiveness scale especially indicated that the students familiarized themselves with these educational and living practices and gradually became more stabile and functional in their behavioral social orientations, but they were either not keen on developing new assertiveness or they had difficulties in their positive self-esteem.

It seemed that low reliability in low self-esteem connoted the measure's reliability problems in educational settings although it was originally applied in clinical client settings. However, the measure's total reliability index is sufficiently high but when the

items are vast and cover disparate social behavioral realms there are validity problems which do not warrant the evaluation of whether the students might often have had specific social phobias needing to be treated in order to go on with one's studies efficiently. By contrast, individual case analyses on the students' scores in the questionnaire were very enlightening for the practitioner because they demonstrated how the students' diversity would continue and progress with their subjective developmental and behavioral matters. However, although sticking to the main research objectives it was not possible to analyze more accurately a student's individual psychological social problems and what the very nature of her frequently weak, conformist and emotivist social behaviors was. In this report's general broad reframe to limited self-reflection and broad, on-task performance reflection the students' passive and conformist behaviors connotes to their weak social problem-solving skills or competencies in goal-directed behaviors. Although no significant improvements in their social competencies emerged during the course, their conceptions of their social individual sense-making evaluations were more crystallized at the post-test. This indicated that the course might have been beneficial for them and laid strong incentives for the practitioner to arrange special teaching and supervision templates for improvement of their apparently weak social skills and behavioral competencies.

2.4.4 Conclusions about the internal consistency of the CBT questionnaires

All the measurements are sufficiently reliable (Cronbach's alpha at least 0,70) to warrant both the practitioner's assessment of each student's behaviors and the comparisons between pre- and post-test outcomes. The practitioner's assessment of a student's behaviors got close to a deeper functional behavioral analysis of her behavioral competencies because the practitioner had much observational data and other relevant data of her real and demanding problem-solving behaviors. In the assessments, the practitioner put much effort into assessing a student's functional as well as dysfunctional behavioral competencies in their reciprocal real proportions. This deepened the practitioner's view of the students' real learning and daily behaviors but it is not possible to elaborate it succinctly from a critical realist perspective here, neither is it the issue to take an empiricist outlook on a student's somewhat alienated social life, and in modern psychological terms to delineate via actualist conceptualizations her behavioral conditions as it emerged in the CBT questionnaires' outcomes.

Because the CBT questionnaires' internal consistencies varied and were also low in some measured psychological behavioral constructs or sub-dimensions, some of the basic research problems were insufficiently covered and handled as will be demonstrated in the presentations of the empirical outcomes. These pitfalls in reliabilities were mainly in pre- or post-test measurements of the Two Study Process questionnaire's sub-dimensions and in some sub-dimensions of the Anxiety questionnaire and the Social sensitivity index. The two research problems, first of seeing the scope and nature of the student's anxiety problems and secondly of measuring pre- and post-test changes in the students' core behavioral competencies were equally important in the search for adequate scaffolding of the students' daily learning of psychology.

It is noteworthy that the distribution of the standardized CBT questionnaires' items often was highly distorted. These issues were largely multifaceted validity problems but they did not put crucial limitations on these educational purposes where the practitioner's main aim was not the measurement of the real nature and severity of a student's anxiety problems. It is useless here to attain a functional behavioral assessment of each student's anxiety disorders or other clinically significant mental health problems because the project only aimed at setting up additional scaffolds to the enhancement of the students' deep or reflective, mindfulness daily learning. The primary objective was to analyze the workability and sufficiency of the additional scaffolding in improving the students' self-regulated or metacognitively managed learning.

2.4.5 Effect sizes in evaluation of the pre- and post-test changes in the students' competencies

The research problem, to empirically investigate the feasibility and practical usability of the constructed and implemented novel teaching scaffolds in the enhancement of students' deep reflective learning, was crucial because it justified or forbade further inventions and implementations of the most optimal educational tools in the enhancement of the students' learning in their understanding about human nature and management of their daily behaviors. The measured constructs were necessary to become analyzed at group, subgroup and individual levels in order to evaluate the students' potential behavioral problems and anxiety behaviors. These multi-relational single-case analyses are not presented in this report.

The use of control groups was not practically possible because in this educational social organization no decisions and practical plans were made to develop the education of nursing by empirical research. The educational policies officially neither supported nor strictly prevented the execution of this research project. There is no need or scientifically warranted option to generalize the empirical outcomes or its significance in scaffolding of psychology teaching into other educational social settings. The significance of the results attained must be related to other empirical data and to the practitioner's emancipatory-oriented knowledge of these social educational transformative practices. With the lack of multivariate means in analyzing the real impact of the imported scaffolds across all of its four separate project's empirical outcomes, Chambless and Gillis's (1993) formula was an adequate estimation of the effect sizes between pre- and post-tests for an evaluation of the potential real multidimensional changes in the students' functional and dysfunctional behaviors and of underlying competencies. The effect size is calculated from means and standard deviations in pre- and post-test measurements ($M_{pretest}$-$M_{posttest}$ /$SD_{pretest}$). Kromrey and Forster-Johnson (1996) have analyzed the formula's statistical basics in detail. It was reasoned here that this formula as a criterion for assessing the potential changes in the measured behavioral domains was also adequate for indicating real occurred changes. That was because these potential changes might not have occurred coincidentally in a certain direction, but as short-term (around 2 months) changes they most likely occurred and resulted mainly from the executed psychology studies. This happened because the investigated individual, deep behavioral competencies addressed deeper psychological matters in an individual's loci of control and these individual psychological constructs in

human recourses did not come into being through simple theoretic or practical studies or via an individual's lay living. As was already delineated, this critical realist philosophical stance in surpassing theory–practice dualism in individual reflections and the potential rise of human metacognitions is the psychological issue of mindfulness. In that non-dual reflection individual metacognitive problem solving is one's behavioral capability and competence in the maintenance of ones' increased concreteness in discursive meta-activities in acting on individual world lines.

Directional and deterministic positive changes into students' mindfulness metacognitive learning might not emerge in the confines of ordinary surface teaching practices on this deeper realm of individual behavior control in the two month, short-time span of the course. More generally, strict conclusions cannot be drawn from the empirical outcomes and their statistical analyses about the really occurred negative or positive directions of the changes in the students' behavioral competencies between pre- and post-test measurements. These conclusions were to be made through the scientist-practitioner's validating work in searching for adequate conclusions about real social things and generative mechanisms under research (see Wuisman, 2005). The practitioner through his understanding of all empirical outcomes and social changes in the real social life under research sought to exclude all other possible conclusions regarding social and other mechanisms in order to maintain the pivotal psychological research approach. That work required the practitioner's deep dedication to emancipatory social and psychological matters in this open educational organization of nursing studies.

2.5 Main results: the students' behavioral competencies and deficiencies

In order to present main empirical outcomes on the students' and a student's behavioral learning deficiencies and the changes in their and her behavioral competencies by comparing pre- and post-test means, both research problems – of the nature of behavioral competencies and changes in competencies in the execution of the teaching program – must be addressed simultaneously. The main research problem was to reach conclusions as to whether the implemented scaffolding of teaching psychology has been the most workable and feasible in the enhancement of the students' reflective or deep learning while concurrently enabling and supporting the students' surface learning of concepts and normative practices. Therefore it was not necessary to present the practitioner's single-case analyses that had been attained through his functional analytic assessments of a student's behavioral competencies and skills. However, the practitioner's backstage data of each student's real learning behaviors supported and reinforced his sticking with the practitioner's emancipatory-oriented teaching position

This research report presents three main specific research problems that are summarized on page 162. In this critical realist research position to emancipatory-oriented research the practitioner has attempted to eschew reductionist research lines, such as to empirically analyze all theoretically deduced connections and flawed 'actualist' laws how psychological constructs in their nomologic mechanistic connections might be at work in human mind as deterministically working apparatuses. All empirical outcomes must be validated in the real social cube realm of the open educational organization on nursing studies. In that critical realist research the students' potentially strengthened reflective

behaviors would have manifested in a student's learning patterns to deep learning and in her functional core behavioral competencies. There is no theory or empirical methodology that demonstrates in which realm the change in students' behavior starts or intensifies. All positive or negative changes in a student's behavioral skills and competencies were possible and to be expected in the execution of the course. Negative changes in the adequacy of teaching scaffolds would be that the students' learning styles became more superficial, passive and their learning was learning of concepts, and their smooth metacognitive anxiety management had changed to maladaptive anxiety management similar to anxiety disorders and avoidant behavioral safety-seeking patterns. Positive changes of the scaffolding might be if reflective, deep learning activities increased and smooth ontask performance activities in managing one's anxiety-related behavioral competencies strengthened.

The practitioner's behavioral assessment of the students' behavioral competencies and his expectation of the feasibility of the scaffolding of the teaching, partly on the basis of the first research project, demonstrated that the strong additional scaffolding in this project might have been a challenging task for the students to manage. This scaffolding is a new importation into social educational nursing practices in its novel constructivist introductions of anxiety psychologies, its coaching practices and its real-time software feedback for the students on their ongoing studies in psychology This scaffolding eschews the ordinary teaching practice where the students' teaching was carried out formally and a student's learning outcomes were measured by theory-inferred summaries at the end of each course. Nevertheless, when viewing the problem issue in the critical realist CBT reframes to the students' functional or efficient vocational learning it was not realistic to expect any significant positive changes without the introduction of specific monitoring and psychoeducational and other collaboratively executed learning devices for an individual student's use, if the students really had at least latent or even clinically significant anxiety-related behavioral problems.

2.5.1 Domain 1: the students' behavioral learning styles and their transformation The range of the means in each of 4 sub-dimensions is between 1 and 5. In Table 8a are presented group results, plus means of 'effect sizes' indicating a positive increase in each core functional competency sphere when the aim was to strengthen a student's deep learning which would correspondingly indicate a decrease in her surface learning. As seen from the results, the students' learning styles were frequently weak for academic studying, both in deep and surface learning activities. Especially in group B2, deep learning was low as the group mean, and the main problem was that in both groups the students' pre- and post-test means in deep learning were low and did not improve during the course. It was conceivable that the social desirability effect increased the students' means in deep learning and decreased the means in surface learning. The conclusion is that the students generally do not possess any strategically and intentionally managed specific learning style, either as deep or surface learning. Obviously, they prefer deep learning to surface learning, but they were unable or reluctant to persevere with any strategic learning; the same faintness in the students' learning activities manifests in factor analyses and at individual post-test means, not presented in this report.

Table 8a: Students' learning strategies as behavioral styles in teaching groups B1 and B2, means (standard deviations)

	Group B1 (line 1, N=22)		Group B2 (line 2, N=23)	
	deep learning	**surface learning**	**deep learning**	**surface learning**
pre-test	3,15 (0,47)	1,97 (0,37)	1,96 (0,63)	1,89 (0,62)
post-test	2,95 (0,37)	2,13 (0,55)	2,04 (0,66)	1,92 (0,63)
effect size	- 0,42	0,43	0,13	-0,06

*Table 8b: Stability and changes in the dominant learning style**

	Group B1, N=22		Group B2, N=23	
	pre-test	**post-test**	**pre-test**	**post-test**
surface	0	3	0	1
diffuse, without any style or strategy	3	9	21	19
relatively deep	19	9	2	3

*Scoring:
- surface learning = mean in deep learning is lower than surface learning and surface learning is more than 2,50 and deep learning is lower than 2,50
- diffuse learning = means in both dimensions in post-test measurements are below 2,6 and they are both about the same size
- (relatively) deep learning = mean in deep learning is at least 2,70 and surface learning is either low or high -- the latter indicates a student's flexibility and self-regulated learning competency

*Table 8c. The direction of change in deep learning between pre-test and post-test; students' frequencies**

	weaker	**stable**	**stronger**	
Group B1	9	12	1	N=22
Group B2	1	21	1	N=23

* Classification was made according to the three categories and the scoring criteria of Table 8b.

The practitioner's scaffolding of the psychology course was inefficient, although manageable and its importation into the teaching was encouraging and positive to the teacher, even if it was impossible to verify the latent effects on a student's learning or its outcomes empirically (this option emerges via behavior monitoring methods in the third and fourth projects as seen later on). Divergences between the two teaching groups in the means and standard deviations are worth taking into account. It seems that in group B2 the students' learning remained stable: they did not receive incentives or reinforcements for deeper learning in this project, and they applied the same basic learning style to their all studies. The practitioner's initial behavioral assessment, based primarily on the observation of the students' learning behavior in classroom settings, alluded that in the B1 group the students were more competent in self-regulated learning (paying attention and concentration) than in group B2. In group B1 there were a few male students, whereas in B2 all the students were female. The gender heterogeneity might have produced a balancing and activating effect on the students' general learning activities, for example on the teaching discourses. In any case these empirical results tend to underrate the vast discre-

pancy of the student's real learning behaviors as the main educational objective in both students groups as seen through the practitioner's observations and other acquired data from the students' real learning behaviors.

The students' deep learning competencies measured here did not clearly manifest as the students' real learning activities, for example the students did not increase their preliminary homework but performed fragmented and superficial learning activities just before the literary exams. In addition, they demonstrated the same and relatively stable communicative patterns in the classroom sessions and were not greatly inclined to receive feedback on their learning performance. Thus the same behavioral patterns were observed in teaching, such as an almost complete lack of manifestations of the students' self-regulated learning activities (preparatory reading of learning materials for each lesson, seeking advice from the practitioner, taking advantage of the practitioner's real-time feedback on each written home work etc.) in both the simultaneously executed courses. It is worth noticing that even the students in their pre-test scoring did not seem generally to know what deep learning is as individual academic learning behaviors, as orientations, and as learning patterns (e.g. programming strategic individual daily learning, developing effective learning strategies and activities). By contrast, the students possessed experiential knowledge of instructive teaching albeit that was not the main educational objective. Price's (2004) research maintains that students' preference for instructional (that is surface) learning does not encourage them to learn in information-processing learning styles.

2.5.2 Domain 2: (a) the scope and (b) the stability of the students' anxiety-related behavioral competencies

The pre- and post-test research setting and the CBT questionnaires as validating measurement tools allow the presentation of the outcomes in a condensed manner.

(a) *The scope and nature of the students' anxiety-related behavioral problems* The reader's main question might be whether the CBT questionnaires are adequate measures to render the practitioner's assessments of the students' behavioral and learning competencies and their divergences as valid. The main issue in this project is to validate the fact that cognitive behavioral assessment tools are the required confirmative data to the practitioner's behavioral assessment, which ensures that his understanding and main explanations of the students' divergent learning skills and competencies is correct. As the results in Tables 9a, 9b and 9c show, the students' divergence in anxiety-related behavioral competencies varied. Although the standard deviations are moderate, internal consistencies (Cronbach's alpha) in measured behavioral constructs and subconstructs are sufficiently high for verification and validating purposes regarding the researched basic behavioral competence domains. Although the psychological constructs to be covered by CBT questionnaires are manifold and wide (clinical anxiety deficiencies, latent anxiety-related problems and good metacognitive competencies in anxiety management), even moderate standard deviations demonstrate significant differences in the students' behavioral competencies.

Even the empirical outcomes in the questionnaires' sub-dimensions alone show that a great number of the students in both groups demonstrate deficiencies in their anxiety-related behavioral competencies. Therefore, it indicates that the students under stress might exhibit dysfunctional behavioral patterns and their behavioral attempts to avoid stress under environmental challenging conditions can initiate these types of dysfunctional and avoidant behaviors. The most adequate psychological explanations of the students' quite diverse avoidance behavioral patterns, from CBT perspectives or from other psychological explanation reframes, are not needed or identically feasible in this project. Excluding the option that a great number of the students suffer from severe anxiety disorders and simultaneously taking into the account the students' weak metacognitive problem-solving skills the students' demonstrate worrying and rumination and other latent anxiety-related behavioral patterns (specifically social and other fears and low self esteem) together with their tendency towards depressive thinking patterns and hypersensitivity to other's reactions, as shown in Tables 9a, 9b and 9c. The students frequently and tacitly encounter intrusive thoughts and emotionally stressful meanings in their tacit thinking during the course of their on-task performance activities, which is a deeper and broader CBT explanation of the students' procrastinating and avoidant behavior patterns. The students seem to lack energy and motivation to undertake demanding initiatives to gradually improve their self-regulated learning activities. Even the students with better developed competencies in functional anxiety management did not engage frequently in more persistent real deep learning activities.

(b) *The stability of the students' anxiety-related behavioral competencies* Generally the students' anxiety-related functional behavioral competencies did not strengthen in these dimensional and multidimensional measured psychological constructs, as was the practitioner's initial purpose for the additional scaffolding of the teaching. Contrary to the effect sizes shown in Tables 9 the dysfunctional behavioral patterns increased to some extent. Tables 9a, 9b and 9c for example show that the students' interpersonal sensitivity remained strong and it indicates their behavioral difficulties to smoothly manage their anxiety-related feelings and experiences. This outcome is consistent with the outcomes in the students' thinking patterns in the TCQ that indicated worrying and other dysfunctional behavioral habits such as weak reappraisal, high social support seeking and high distraction. High distraction as a student's behavioral pattern indicates her tendency to safety-seeking behaviors, for example it might connote strong thought suppression, and it is a dysfunctional thinking strategy for a student who is encountering totally new and innovative learning environments. High distraction can impair a student's on-task performance when her meta- manageable but without a positive or significant negative impact on the students' learning and on all their functional behavioral competencies. In addition, the differences between the two teaching groups in the measured anxiety constructs were insubstantial in general and thus the similarity in the investigated behavioral constructs indicated sufficient reliability and face-validity in the measurement tools. Some differences between the two student groups are not presented here in detail, one of these differences demonstrated that the inside relations between classmates were structured more specifically on how cognitive controlling activities are not as advanced as was

Table 9a: Students' evaluations of their anxiety-related issues in group B1, N=22, means and standard deviations

	Event-Impact scale						Interpersonal sensitivity (IPSM)			
	intrusions		aversions		total		sensitivity		total	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
at the start	1,40	0,92	1,51	0,93	1,46	0,75	2,03	0,44	2,17	0,26
at the end	1,75	0,78	1,63	0,90	1,69	0,84	2,13	0,55	2,24	0,32
effect size*	0,38		0,13		0,31		0,22		0,27	

*Chambless & Gillis, 1993 (startmean-endmean/start s.d.)

	Anxiety Questionnaire (AnTi)							
	social worry		health worr		metaworry		total	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
start	1,40	0,92	1,51	0,93	1,46	0,75	2,03	0,44
end	1,75	0,78	1,63	0,90	1,69	0,84	2,13	0,55
effect size	0,38		0,13		0,31		0,22	

Table 9b: Sub-dimensional means (standard deviation) in Thought Control Questionnaire (TCQ) in researched groups, mean (SD)

	Group B1 (line 1, N=22)			Group B2 (line 2, N=23)		
	pre-test	post-test	effect size	pre-test	post-test	effect size
reappraisal	2,67 (0,37)	2,45	-0,37	2,71 (0,63)	2,51	-0,21
worry	2,00 (0,24)	1,97	-0,08	2,11 (0,43)	2,04	-0,11
social support	3,30 (0,90)	3,06	-0,36	3,39 (0,51)	3,48	0,17
ritualization	2,44 (0,97)	2,19	-0,39	2,32 (0,38)	2,35	0,04
punishment	1,43 (0,12)	1,37	-0,18	1,58 (0,64)	1,56	-0,03
distraction	3,11 (0,92)	2,88	-0,40	2,80 (0,61)	2,82	0,03

Table 9c: Anxiety sensitivity (ASI-R) scores in group B2

	1. Factor		2. Factor		3. Factor		4. Factor		Total	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
pre-test	0,73	0,68	1,30	0,57	0,47	0,48	0,94	0,74	0,89	0,55
post-test	0,50	0,74	1,20	0,62	0,42	0,62	0.65	0,66	0,71	0,60
effect size*	-0,34		-0,18		-0,04		-0,38			

*effect size = mean in pre-test-mean in post-test/standard deviation in pre-test, Chambless and Gillis, 1993

factor 1= beliefs of catastrophic outcomes of somatic sensations

factor 2= fear of general observable anxiety reactions

factor 3= fear of disturbances in cognitive control

factor 4= fear of somatic sensations

the case in many students (derived from the practitioner's observation of their classroom learning behaviors).

Generally, the differences between pre- and post-test means indicate occurred changes in the students' individual anxiety management activities. The differences were small and the changes affirmed that the imported additional scaffolds to teaching were to do classroom learning. For example the B1 group was more divergent and in general its students demonstrated stronger self-regulated learning competencies than the students in B2 group or at least that the B1 group students were more actively and persistently engaged in reflective learning performances. Therefore the learning program might have been more welcomed in the B1 group because their high-group cohesion to the maintenance of previous subjective learning conceptions and orientations did not emerge and the students' preference for surface learning and instructive teaching was weaker than in the B2 group.

Nevertheless, in Tables 9 the students in both groups did not demonstrate any positive changes in their skills and competencies of managing their uncertainties and anxieties. One interesting exception was the students' means in the anxiety sensitivity questionnaire's sub-dimensions where the students seemed to improve their stress management competencies. It could indicate that the introduction of anxiety psychologies into the core of psychology studies is a highly positive ethical solution. It is worth noting that this sub-dimension is more sensitive to indicate small changes in individual core competencies in anxiety management when threat control and emotion control sub-dimensions are related directly to more stable and deeper identity structures. Slightly negative pre- and post-test changes in means in the students' competencies of managing with uncertainties are worth noting but that might merely indicate that the psychology course has increased the students' self-knowledge of these individual behavioral matters. Therefore for the practitioner there are difficulties in applying the optimal reframe to the evaluation and assessment of the functionality and dysfunctionality of the outcomes attained. For example, in this project it is not feasible to find out how high and maladaptive the students' worrying tendency initially would have been because that assessment would require a stronger collaborative stance, or other individual data from a student's behaviors than it was possible to achieve in classroom settings and via the constructed scaffolds. It seemed that the course in psychology was demanding in this crucial issue of behavior regulation and action control in uncertainty issues because the practitioner's initial aim in teaching was to enhance the students' metacognitive managed learning. The practitioner arranged settings in this project in which the students paid attention to their uncertainties, especially learning materials and psychological conceptualizations and his coaching teaching discourse encouraged the students to address their deep behavioral matters.

The students' mindfulness behaviors and reflective problem solving (formal problem solving at cognitive as well at metacognitive levels) seemed to be moderate and suddenly disrupted in more demanding behavioral contexts. In daily studies and living activities the students concurrently faced unexpected stimuli that they were unable to manage metacognitively by persistent acceptance and commitment behavioral initiatives and activities. For example, in the B1 teaching group the students' means in metaworry (An-

Ti-questionnaire) were high and they increased. There are sound grounds for the practitioner to conclude that in both teaching groups these outcomes indicated the students' weak reflective problem-solving skills and mindlessness behavioral patterns which did not transform to more functional mindfulness directions during the course's short time span.

2.5.3 Domain 3: explanations for the end-state divergence of the students' behavioral competencies

Validating the feasibility of the imported scaffolds in the teaching factor analysis of the results attained in the CBT questionnaires is an appropriate way to explain the students' divergent behavioral patterns and their underlying behavioral competencies. Both student groups completed the same course with the implemented scaffolding. The three separate students' subgroups regarding core behavioral competencies emerged in both groups (see Table 10). Both student groups reflect similar factor analytically discerned behavioral constructs in the dynamic behavioral reframe of anxiety-related behavior deficiencies and reflective behavioral competencies. In one subgroup the students are dominantly worrying, with weak self-regulated learning and problem-solving skills and

Table 10. Factor analytic end state results of the students' reflective competencies and deficiencies (Varimax rotatated factor matrixes)

Group B1 (N=18)	Factor 1	Factor 2	Factor 3	Communality	Group B2 (N=17)	Factor 1	Factor 2	Factor 3	Communality
AnTi total	0,72	-017	-0,10	0,551	ASI-R total	0,93	0,07	0,05	0,533
reappraisalTCQ	0,10	-0,09	0,49	0,255	worryTCQ	0,92	0,21	0,00	0,895
worryTCQ	0,89	-0,20	-0,03	0,831	selfpunishTCQ	0,88	0,12	0,01	0,483
socialsupportTCQ	0,05	-0,31	0,13	0,119	surfacelearntot	0,75	-0,22	0,08	0,980
selfpunishTCQ	0,69	0,00	0,11	0,482	reappraisalTCQ	0,55	0,30	0,38	0,797
distractionTCQ	-0,17	0,77	0,37	0,767	deeplearntotal T-S	-0,23	0,92	0,15	0,782
interpesworySen	0,89	0,34	0,16	0,933	behaviorritual(TCQ)	0,45	0,68	-0,56	0
lowselfesteemSen	0,46	-0,33	-0,16	0,341	distractionTCQ	0,57	0,68	-0,03	,881
lowassertivitySen	0,12	0,80	-0,12	0,669	socicalsuppTCQ	0,11	0,03	0,69	0,928
deeptotal T-S	-0,20	0,08	1,03	1,116	eigenvalues	4,28	1,71	0,92	0,626
surfacelearntot T-S	0,50	0,07	-0,36	0,393	variance explained by factors	61,77	86,7	100,00	
eigenvalues	3,24	1,84	1,36		per cent of total variance explained	47,50	66,5	76,7	
variance explained by factors	50,3	78,8	100,0						
per cent of total variance explained	29,5	46,2	58,6						

Factor 1: strong latent worry
Factor 2: diffuse identity and social support seeking
Factor 3: deep learning without active worry

Factor 1: strong latent worry and surface learning
Factor 2: deep learning without active worry
Factor 3: diffuse identity and social support seeking

Used questionnaires: AnTi = anxious thoughts questionnaire; ASI-R = Anxiety sensitivity index-revised; TCQ = thought control questionnaire; Sen = social sensitivity index; T-S = two factor studying styles, deeplearntotal = deep learning total; surfacelearntot = surface learning total

they perform surface learning, if any learning at all (1. factor in both groups). In the other subgroup, the students lapse into safety-seeking activities, such as striving for social support with weak on-task performance activities (2. factor in group B1, and 3. factor in group B2). The third subgroup of the students (3. factor in group B1, and 2. factor in group B2) was more difficult to interpret and define, but in both subgroups the students were more competent in self-regulated learning activities or at least more persistently and intensively engaged in their learning at hand. It seems that some of these students study easily and primarily concentrate to manage their other social and developmental living tasks.

In both of the weaker competency student subgroups, the students were unable to take initiatives in the realms of self-regulated learning due to their crucial pitfalls in basic learning skills and competencies. That is because in this project the main method of teaching – coaching and lectures and teacher's software feedback – is effective neither in preventing a student's lapses into tacit worrying nor in providing incentives for her intensive and dynamic reflective learning activities. As factor analysis in Table 10 shows, in both teaching groups there were three disparate student subgroups and this points to separate and more appropriate practices and means to teach the students about human nature. The students with diffuse self-concepts and weak on-task performance activities in learning and with lagging identity development are difficult and even impossible for the practitioner to manage without instructive teaching means if basic self-regulated teaching and learning scaffolds are scarce and diffusely targeted at the students' real learning behaviors. This subgroup of the students as well as the subgroup of the students who worry manifestly in their avoidant performance maintains the practitioner's staying in instructive teaching as his most dominant teaching practice. The students' active or latent worrying disrupts their cognitive problem solving as seen from the analyses in Table 10. The students have both diffuse and fragmented self-conceptions (derived from the sensitivity index, here assertiveness and self-esteem seem to be both weak and fragmented in some students). These students experience problems in cognitive problem solving, due to metaworry (see Wells, 1994, 2000) that is relatively high in the students (see for example the AnTi questionnaires' results, Table 9a). This abolishes a student's mindfulness and metacognitive activities as her contextually arising on-task performance activities. Metacognitive inactivity in worrying in this case means inactivity, it means difficulties and disruptions of the students' contextual behavior and broad spontaneous monitoring. Thus a student's interpretations could be primarily focused on validation of her worry and despairing mood that creates the main impairment in individual behavior management. At least a number of the students also seem to rely on social support and distraction (see Tables 9a, 9b and 9c), and these activities impair their intrinsic motivational self-regulated learning as well as the rise of their functional metacognitive activities. When in this course the practitioner's picture of the students' vast divergence in their learning behaviors becomes clear the real possibility arises for the practitioner to progress from instructive formal teaching practice to direct improvement of the students' core self-regulated learning competencies in their psychological studies.

3. VALIDATING CONCLUSIONS OF THE FEASIBILITY OF THE EXECUTED SCAFFOLDS

From a critical realist perspective to emancipatory-oriented social and psychological research all empirical outcomes must be assessed in the real open transformative practice of education. These conclusions thus entail mostly transcendental argumentations where all social cube relations and forms are seen in their real constrained maintenance mechanisms. However, all the empirical outcomes in this research project become validated in later ponderings about how the individual behavioral realm of a student's daily behaviors provides the practitioner with new and promising options to scaffold her deep and reflective learning and daily behaviors via CBT means and how behavior monitoring could achieve its most promising perspective in this teaching practice.

3.1 Implementation of the CBT questionnaires validates the students' divergent behavioral competencies

The implemented scaffolds in teaching and in the CBT questionnaires in the attainment of the standardized validating data for the practitioner's assessment of the student's daily learning behaviors were the optimal solution. They were reliable in enabling the practitioner to form a deeper conception of the students' divergent learning and deeper explanations of their divergences in their daily behaviors through the CBT conceptualizations to human behaviors in anxiety management. The conceptualizations in assessments moved beyond dualist skills and ability conceptions and covertly introduced a non-dual behavioral competence position along with all its divergent and contradictory functional and dysfunctional competencies in an individual's daily management of her world lines. In this research this individual behavioral modality realm (for example in on-task performance contra safety-seeking behaviors) was crucial in order to have the social cube position to the polyvalent world of education that was the practitioner's work template to teaching practice and scaffolding of the teaching and the students' learning.

The questionnaires were feasible both in excluding the option that many students might have severe anxiety-related deficiencies and in pinpointing students' anxiety-related behavioral deficiencies that are common dysfunctional behavioral patterns in individuals' with general anxiety disorders, such as worrying and rumination. An elaborate statistical analysis (single-case analyses and as subgroup analyses, not presented in this project) was required to discern the main empirical outcomes of the CBT questionnaires. The evaluation of the students' functional and dysfunctional behavioral patterns in their daily anxiety management required the practitioner's experience in clinical psychotherapeutic work, for example in order to understand the divergent and contradictory ways the students' scores in the CBT questionnaires indicated their efficient or deficient behavioral competencies. This evaluation also required real observational and other data on each student's learning behaviors as was possible in classroom coaching as well as through her three literary home tasks. All this rich data of an individual student's behaviors made it possible that the practitioner more consciously was able to adhere to his functional behavioral analysis stance in this social cube reframe in evaluating if scaffolding means in the psychology course would create more behavioral options to the students' intensive free floated learning.

Problems in devising adequate criteria for analyzing and evaluating empirical outcomes in the CBT questionnaires' sub-dimensions (especially worrying, social support, and distraction sub-dimensions in TCQ) required that the practitioner was keenly committed to a strong scientist practitioner's approach in his metacritical multidimensional evaluations of a student's behavioral constructs. Similar to clinical settings, the practitioner through his intense concentration and focus on these individual behavioral matters was able to gather and evaluate data about a student's real daily learning behaviors. Primarily the practitioner based his assessments on all the observational data of emergence and absence of the students' daily learning behaviors the real facts of which indicated the students' behavioral competencies and deficiencies. The practitioner's continuous following of educational practices in nursing as well as a gradual deepening of psychological explanations of the students' common and strong procrastinating behaviors in this second research project validated the practitioner's assessment of the students' three separate subgroups with regard to their behavioral problem-solving competencies. However, the students with diffuse and lagging identity development and tacit avoidant behaviors and the students with more manifest worrying and other relatively strong avoidance (safety seeking) behavioral patterns were diffuse subgroups and difficult to manage in teaching when attempting to meet the criteria of academic studies within the psychological realm of strong self-regulated learning skills.

The general stance in assessing the means and standard deviations of the students' scores in the CBT questionnaires and in their sub-dimensions was that self-regulated learning in academic studies required stronger behavioral competencies in the metacognitive behavioral realms. That is why the students' low or average means, especially in the CBT questionnaires, indicated their challenges in facing and managing dynamic learning and working conditions without their turning to stable daily rule-governed behaviors. Therefore, it was reasonable that the practitioner's research objective was to seek invigoration of the students' self-regulated and not rule-governed behaviors in shedding off their avoidant behavioral patterns the patterns of which only exposed them to increased worrying and other safety-seeking behaviors.

Because the pre- and post-test measurements in the application of the questionnaires were reliable for the practitioner it made possible an empirical investigation of the real impacts of the additional scaffolding on the teaching of human psychology. The completion was successful with relatively small dropouts in students' scoring of the CBT questionnaires. The students understood the educational purpose of completing the questionnaires and this fact guaranteed the questionnaires' reliability in their use for educational objectives. The students understood that the purpose in measuring the workability and feasibility of the teaching practice was not related to their individual things such as their potential clinical health problems or their learning outcomes in this psychology course. However, social desirability and the students' acquiescent tendencies had a tendentious effect on the empirical outcomes and they especially diminished the potential significance of the students' real anxiety problems. Because the practitioner had other observational and other data on the students' behaviors these reliability problems did not nullify the comparisons of the pre- and post-test outcomes as was pivotal in the search for the most optimal scaffolding in psychology studies. It was likely that the students became more

familiar with the questionnaires' deep behavioral issues during the course that resulted in more moderate means in their functional behavioral competencies in the post-test measures.

Through the validating data derived from the CBT questionnaires and real data of the students real learning and of their daily activities it was clear for the practitioner that the students' self-regulated learning in its basic reflective behavioral activities (text comprehension, integrated and strategically managed learning patterns of distance and classroom learning, literary conceptualization, feedback utilization, assessing individual learning activities and their remodeling, etc.) did not improve generally and more frequently during the course. The students appraised the teaching practice in the psychology course as totally divergent in comparison to all their other courses and this might have increased their temporary indecisiveness on how to do their psychology studies regarding the most appropriate learning activities without receiving any normative guidance from the practitioner for the improvement of their learning.

3.2 Selection of the general scaffolding strategy for the students' psychology studies

The pitfalls in the reliability and validity of the CBT questionnaires were discussed above, as well as the fact that the general strategy of measuring the students' behavioral competencies did not weaken or minimize the questionnaires' usability in categorizing the students along with their basic self-regulated behavioral domains and competencies into three separate subgroups. The CBT conceptualization of the students' anxiety-related behavioral deficiencies and behavioral problems in innovative learning were adequate, they pinpointed clearly the blind alley of teaching academic studies to students with divergent and frequently deficient reflective problem-solving competencies under the dominant instructive teaching practices. Here the students' only learning focus was on the adequacy of the teacher's methodologies and his teaching activities without any incentives subjectively to improve individual real learning behavior and its adequacy.

These theoretical considerations of the maintenance of a student's dominant surface learning and her procrastinating behavior have been under intensive contemporary psychological research, both in education and in cognitive behavioral psychotherapeutic client practices. The research of the students in this project also displayed methods for scaffolding the students' learning but the methods reinforced the ordinary instructive means to teach (see Figure 1, p. 144) because primarily the executed scaffolding did not involve a strict individual behavioral position to learning. Therefore to have this individual reflective behavioral position back in the students' learning there is a need for novel means in scaffolding the students' learning through the importation of collaborative means from the CBT clinical practice. Fortunately, the validation of the accurate behavior assessment of the students' daily and learning behavior enables new innovative enterprises in teaching and provides real opportunities via gradually performed scaffolding endeavors.

The causes and generative psychological mechanisms at work in the students' daily behaviors is a complicated issue, pondered in the first chapters of the third project. At least it was discovered that the implemented and performed teaching program did not

have any meaningful positive effect on the enhancement of the students' self-regulated behaviors in the investigated crucial behavior control domains (see Tables 9a, 9b and 9c). There is no way to conduct a research of more specific behavioral competency issues without lapsing into empiricisms and into the loss of practical perspectives and frameworks to emancipatory-oriented teaching. Therefore, here the scaffolding of self-regulated teaching was the most optimal way to proceed to collaborative teaching. Here the basic scaffolds in collaborative teaching were successfully implemented without causing a remarkable increase in the students' stress or impairments to their learning. The implementation of additional tools in teaching (the importation of a software teaching template to programming and management of the study process, the enrichment of contextual psychologies in learning materials, the compaction of the teacher's real-time feedback on a student's ongoing learning) was executable. This implementation clearly encouraged the students to choose their own optimal learning activities from the constructed and provided learning scaffolds. Initially the students were apt to passively follow and attend classroom teaching. During the project it was stressed to the students from the very beginning, that attendance at the classroom sessions was not obligatory. They were however told that it was of vital importance to have a firm individual grasp on the teaching program's integrated and programmed learning structure and that their own individual integration in managing with home and classroom learning activities had turned out to be the most feasible and workable learning strategy.

If this additional scaffolding in teaching had been implemented by emphasizing the students' active utilization of all teaching and learning scaffolds it could have caused excessive stress and anxiety to the students due to their difficulties in abandoning their surface learning patterns. As seen from the results in Tables 9a, b and c the students did not receive any feasible behavioral means of managing their mental load, the outcomes show that the students' divergences in their anxiety behavioral competencies persisted.

Nevertheless the implemented scaffolds for the enhancement of self-regulated learning were not optimally effective in the practitioner's purported objective of the students' self-regulated learning and strengthening of their underlying behavioral functional competence constructs. Because the implemented scaffolds to teaching did not disrupt the students' learning they both permitted and paved the way towards further and tailored scaffolding in learning via the application of CBT treatment tools and its psychoeducation. It is worth noting that in this research project the imported scaffolds in teaching were only superficial in targeting a student's avoidant behaviors in learning, which appeared to be the students' main underlying deficient behavioral pattern in the maintenance of their procrastination.

3.3 A student's learning problems as anxiety-related behavioral deficiencies

The main obstacle in the student's learning and an objective in teaching psychology of human nature is that metacognitive, constructivist and contextual notion, embodied in metacritical thinking, rarely occupies students' daily learning. It was empirically verified that it did not increase with the application of conceptually rich teaching materials, practitioner's coaching, constructive basis of assessing the students' learning outcomes and gradual stepwise deepening of the learning process. The apparent reason is that in a large

number of the students the basic self-regulated competencies are not sufficiently improved to continue with coaching and executed rich teaching techniques in the course among the other and more manifest surface teaching technologies. As Table 10 shows, there are at least two separate subgroups of the students: some of the students worry and ruminate excessively through their latently impaired reflective cognitive resources and the other students tacitly and more dominantly rely on their thought distractive, suppressive and social support-seeking behaviors rather than on deep learning and problem-solving behaviors. When these subgroups form a clear majority of the students in a teaching group the third small subgroup of the students have no means through their own learning and other behaviors to make changes to the deeply structured normative teaching practices.

Enlargement and refinement of the explanation reframe of the students' divergent learning behaviors by means of CBT conceptualizations, and its relation to anxiety and contextual behavioral issues, is required in teaching when encountering the challenge to foster and support the students' metacognitive learning in large-group teaching. In this project it was found that all instructive-based solutions brought about insufficient and even adverse outcomes in this objective. The methodological or structurally organized teaching means only maintain the ordinary teaching practice to these normative educational objectives where software-based teaching means are likely to falter. They maintain ordinary dualist teaching–learning and theory–practice dualist practices, where the learning objectives in psychology studies are confined to mind–body issues, and this means a direct and absolute absence of social ontological mediated life as the sustenance level for the rise of smooth individual metacognitions and of human well-being. For example, actualist and empiricist methodologies, and their theorizing of students' abilities and skills, empirically research pre-conceived pitfalls in individual presupposed and initially idealized mechanisms and this approach does not alleviate impairments in an individual's reflections, because there are no distinct and specific skills to behave mindfully and metacognitively. Theorizing, such as importation of theories on human control, and an empirical measurement of the accuracy of these theorized categories regarding the students' problematic learning behavior, adds nothing to the practitioner-teacher's attempts to alleviate a student's self-regulated learning problems. A practitioner's theory or method-informed research does not diminish or strengthen a student's functional appraisals of her behaviors or guide her to obstruct tacit worrying and rumination and other avoidant tendencies in safety-seeking behaviors. Instead, this research would likely weaken or impair a student's on-task performance or cognitive problem solving in all her daily activity management.

Anxiety-related behavioral conceptualizations focus on a student's daily behaviors and problems in anxiety management and explain impairments in her learning, such as specific weak behavioral on-task performance mode to managing individual concentration, text comprehension, literary expression, and weak persistence in carrying out the appropriate learning strategies. Demonstration or psychoeducation regarding the problems of concentration in behavior does not help a client to get rid of her tacit problematic behaviors, if these behaviors are deeply rooted in individual behavior control as her individual strategy to manage uncertainties and anxieties. Theoretically, through CBT con-

ceptualizations, this seems to be the case when surface teaching practices strengthen the students' dysfunctional ruminative and avoidant behavioral tendencies.

Let us view, for example, the weak explanatory power-problem in ruminating behavior. Lyubomirsky et al. (2003) state that rumination and worry impairs learning in academic tasks or in general problem-solving behaviors. They consistently refer to other empirical research performed on that issue but they do not add much, if anything, to the means and strategies or to other practical procedures, for example into one's discharging strategies to ruminate. Here the practitioner's perspective was that among young preadult students with lagging identity development safety-seeking behaviors frequently manifested as rumination and worry concurrently impairing their active attempts to embark on innovative behavioral learning activities.

When there exists a possibility for the practitioner to reach work at a deeper level of human control and behavior (along the philosophical lines of the human mind as "synchronic emergent powers materialism") as individual dispositions and orientations (discussed on pages 27-28), it opens a way to understand human behavior, as a behavioral obstacle to an individual's reflective capability in managing the ontological dualism of intrinsic and extrinsic ontological world(s). In psychology, it is a realm of anxiety-related behavioral matters in a subject's own management of these uncertainties and distress issues. The individual might behave in ways that keep her anxieties ongoing although the individual herself might perceive it otherwise due to her rich tacit use of anxiety alleviating avoidant behavioral activities. An individual might lack 'abilities' or other dispositions to evaluate and revise her dysfunctional behavioral patterns. This behavior could maintain and strengthen anxiety-related perceptions, interpretations and evaluations. In cognitive behavioral research it is generally characterized and labeled avoidant behaviors. In such a behavioral mode the individual tries to avoid or to decrease despairs and distress. This behavior is frequently mechanistic and rigid and is a special safety-seeking behavior as Salkovskis (1996) defined it. As becomes elucidated in the next research project these avoidant behaviors could prevent cognitive human problem solving or practical problem solving. In critical realist elaborations when an individual's human problem solving or acting spontaneously in one's open constrained world is not strong, or an individual faces acute, stressful and complicated situations, it indicates impairments and even occlusions in one's innovative doing and learning.

3.4 Failed transition to collaborative teaching of the latently worrying students

Nevertheless, the teaching practices as dominant instructive teaching discourses and structures continued to prevail. The concentration of the teacher's feedback on the learning outcomes or on other superficial learning methods was not sufficient although it was required in aiming at collaborative teaching. The students' tacit avoidant behavioral tendencies and rumination frequently impaired deep learning and reflective problem solving. As delineated in the third research project, the students might frequently seek immediate alleviation of their uncertainties by trying to directly abolish the emotional load from the present on-task performance via specific and separated avoidant behavioral acts and activities, or via safety-seeking behaviors. However, worrying and over-

positive thinking as their safety seeking in the form of specific avoidant behavioral patterns is embodied in their surface learning activities. These avoidant behavioral patterns only prolong or impair their observation and validation of positive feedback on one's self-efficacy. In the third research project the goal is to deepen and gain increased reconfirmation of the attained psychological explanations of the students' (learning) behaviors and to find out whether there are real possibilities for the practitioner to move onto more intensive collaboration in teacher–student teaching and learning discourses and teaching means. But under the students' common ruminating and worrying behavioral patterns the objective is difficult for the practitioner to manage, as is seen in the third research project, because many ordinary teaching means in students' self-regulated learning, such as teamwork or peer tutoring techniques, would not be effective, no matter how vigorously or adequately used. The students' challenges in their learning are demanding, and the students' manifest orientation to learn is dualistic formal learning of theorized norms; with the lack of pre-constructed frameworks for self-regulated learning it directly calls for practitioner's formal instructive teaching. The same occurs even if allotting additional resources to the teachers' instruction and tutoring of the students. These resources in teaching would mainly reinforce the surface learning and the teachers' teaching of normative or theoretical practices by concurrently restricting a student's options to learn issues needed for her to progress in her pre-adult and adulthood development.

The assessment of the students' total learning as both surface and deep learning as well as the tentative attempts to measure and assess the students' all contradictory behavioral deep competencies was a broad assessment stance in the search for means to enhance the students' learning behaviors and by that means to bring changes for individual freedoms in the open social life in education. In the assessment, the notion of a student's target behaviors is pivotal, and it is a broad and differentiated notion with numerous sub-classifications in which all different behavioral psychological modes or modalities behind on-task performance and safety-seeking behaviors are brought into objectives for the students' self-monitoring and scrutinizing in their concurrent learning. The very concept of target behavior(s) could be conceived here as a descriptive concept but it attains real profound objectives in a student's behaviors in the next project. It specifies the objectives of the scaffolding of a student's learning by optimal means and the CBT tools used in the students' psychology studies.

III. Importation of cognitive behavioral tools into student behavior monitoring and exercises

Abstract

As the first and the second research projects affirmed, the most feasible scaffolds for enhancement of reflective problem solving and learning behaviors of nursing students required enrichment. It is argued here that instructive teaching to learn superficial epistemic issues impaired the metacognitive and reflective learning of the three identified student subgroups.

Fortunately, the deeper psychological explanation in the core functional and dysfunctional, behavioral competence realms guided the practitioner to design and implement CBT treatment protocols into the students' learning of psychology in one large student group in a similar setting to the previous projects. The identification of three separate subgroups of the students was clear (hence it being strongly generated from a critical realist modality perspective) and this led to a search for inventions of CBT programs used in treating clients with generalized anxiety behavioral problems, such as rumination. The empirical research of the students' application of the programs, as well as of their feasibility to support the students in their shedding off of their avoidant and ruminating behavioral activities that intruded into their real daily behaviors and daily learning in their studies of psychology, demonstrated that the novel program was executable, and it slightly strengthened teaching and learning templates in the realm of collaborative teacher–student work.

The social cube approach to the practitioner's assessment of the students' behaviors was workable and enabled the practitioner's derivation of CBT scaffolds, which are commonly implemented in clinical client practices, to the students' learning. All these scaffolds were presupposed to be manageable from the constructed and consolidated self-regulated teaching scaffolds, such as psychoeducation in CBT treatment means and their practice, and supervision of a student's recording of her behavior monitoring and scrutiny of her recent learning during the concurrent course's execution.

The scaffolds for teaching psychology and guiding the students to reflective learning were implemented as an integrated classroom and distant learning, strong, software virtualia learning-template execution. This CBT-informed implementation addressed a student's contextual behaviors and it guided the students to learn idiographic psychological matters more often without lapsing to dualist theoretic nomothetic issues. However,

empirical research on the feasibility of the implemented CBT scaffolds for enhancing the students' core functional competencies in the pre- and post-test research settings showed that they were not sufficient in any of the students' three behavioral competence subgroups and therefore the students' surface learning activities generally prevailed. The conclusion was that it might be possible to refine and revise the CBT-informed scaffolds so that the students would be able to alleviate and revise their ruminating and other avoidant behavioral patterns that impaired their deep learning activities.

Key concepts: Self-regulated learning, behavior assessment, functional behavioral analysis, CBT questionnaires in assessment of non-clinical and clinical anxiety problems, worry and rumination, safety-seeking behavior, software psychoeducation, coaching, real-time feedback of students' learning outcomes, CBT conceptualization of anxiety-related behavioral problems, core behavioral competencies in behavioral management, behavior monitoring

1. THE INVIGORATION OF THE STUDENTS' HOME STUDIES BY BEHAVIOR MONITORING RECORDS

The research configuration of measuring the workability of the implemented scaffolds on a student's metacognitive learning was established as the theoretical basis for reconfirmation and deepening of the psychological explanations of the students' three behavioral patterns in order to encourage them to continue with the behavior monitoring exercises introduced and incorporated to their learning in psychology studies. The critical realist and emancipatory-oriented practitioner's realm of a student's anxiety management in her daily learning requires theorizing of the most feasible CBT tools and careful designs of their adequacy and workability in a large student group in ordinary and curriculum-based teaching of psychology.

1.1 Introduction to the logic of the research project

This section first elaborates how the divergence of the nursing students' learning behavioral styles and patterns becomes explained and refined as the students' latent anxiety-related behavioral problems of two types in two student subgroups. Next, theoretical conceptualizations of worrying and avoidant behaviors as safety-seeking behaviors are elucidated and then the workability of CBT treatment tools (revised for the educational tasks by four specific tentative modalities) in re-scaffolding behavior monitoring of the students' learning of psychology is assessed. The idea is that rumination and/or reflective problem solving, as a student's target behaviors in managing her daily contextual behavior, is an adequate learning objective to learn about human nature. From the previous constructed basis to scaffolding the teaching of psychology this novel scaffolding makes it possible for the practitioner to continue with a student's metacognitive learning realms in all three student subgroups if collaborative means, such as coaching, psychoeducation, specific CBT treatment protocols and a student's supervision get a strong foothold in the teaching via software technologies.

This broad theoretical elaboration, related to worry and rumination incorporated in a student's daily learning behaviors, might seem difficult for the reader to understand because the critical realist position to human agency asserts modalities in the human mind (see page 245). This contextualized psychological perspective into individual tacit thoughts and feelings that arise in each daily space–time moment to individual behavioral monitoring is not the affirmed starting point of the empirical research. This project investigates if this modality position is workable in the teaching of psychology. Arguably, the behavior monitoring package must be broad, as well as specific, in its targeting of students' contextual behaviors in order to meet the students' divergent needs in their learning. It is achieved by means of four modes to behavior monitoring in recording methods in order to address the students' specific learning problems and discrepancies in their behavioral patterns.

The second research project (Part II) delineated the construction of scaffolding ('laboratory program') as specifically tailored, behavior monitoring exercises that utilize CBT methods for treating stress and anxiety problems, and in particular tacit rumination. The practitioner's initial goal was to guide the students to scrutinize their core contextual learning activities (strategic learning style, text comprehension, concentration, utilization of the teacher's real-time feedback of one's learning behavior etc.). The scaffolding was created to enable the students to adequately and functionally confront the ordinary surface-learning social practices in their studies.

The workability of the scaffolding of the students' learning becomes established by the pre-test/post-test setting to investigate whether CBT questionnaires provide empirical data about the students' behavioral core competencies and if these competencies might change due to the execution of the teaching program. The practitioner's behavior assessment position is to design adequate behavior monitoring exercises and implement them via collaborative teaching means, rather than categorize the students' skills and their limitations theoretically.

Because the novel scaffolding of a student's learning of psychology represented an additional load to the students' learning and daily living, it required both general and single-case analyses of the positive or negative outcomes of the additional scaffolding in the search for fresh and practical means to enhance the students' strong behavior competencies, especially in the teacher–student collaboration. The validation of the workability and optimal feasibility of the completed practical programming in teaching is analyzed and described in the fourth research project (Part IV). The impact of the teaching and its scaffolding on the students' learning must be directly determined not only from the empirical pre- and post-test outcomes, but by the assessment of the implemented framework's feasibility to the students' self-regulated learning, based on the scientist-practitioner's understanding of the CBT-informed practice.

1.2 The CBT stage to performing research on the students' learning behaviors

A critical realist perspective to the open educational life in nursing elucidates all divergent lines to the scaffolding of students' learning in their psychology studies. All methodological approaches to enhance the students' self-regulated or deep learning have been affirmed as inadequate because of the students' vast divergence in their behavioral

competencies to manage their uncertainties and anxieties. Consistent with critical realist philosophical notions to ontology, epistemology, transitive domain, referential detachment along with many more, the first research project derived and designed a behavior monitoring position and incorporation of optimal CBT treatment protocols to these monitoring exercises. When the second research project introduced CBT questionnaires to the students' pre- and post-test scoring it provided a successful template for measuring the impact of the practical package on the teaching of students about human nature. Through the scaffolding it became possible to enrich the entrenched basic frameworks in this teaching (conceptually rich learning materials, such as anxiety psychologies, software-managed feedback of a student's stepwise learning outcomes, the practitioner's real-time feedback and supervision of each student's learning outcomes). In 1.2.1 the first two research projects' collaborative templates for moving forward the students' learning are delineated, and 1.2.2 assesses the various optional and practical lines for scaffolding the psychology learning of students who frequently lapse into worry and rumination.

1.2.1 Social constrained educational practice impairs practitioner's coaching and other collaborative means

The second research project's methodology and its logic were based on the dialectical critical realist position to social research. This stance means a deep underlying ethical commitment in teaching that seeks to abolish bad social constraints (in the forms of surface learning practices and their mutually reinforcing social mechanisms). However, in the two first research projects these social changes did not occur. Of course latent social changes are not sufficient, such as the broadening and deepening of the students' understanding of psychology and human behaviors. In the enhancement of individual reflective learning there is a need to bring a student's own learning about human nature into focus to invigorate the contextual and dialectical universalizability basis to all individual activities and well being.

The educational projects in psychology studies in nursing did not extend contextual learning in teaching and students' learning within four years. The educational structures, along with their causally efficacious maintenance discourses and structures, supported the students' dominant surface learning despite their diffuse hopes and expectations for changes in their learning practices. When analyzing the students' expectations from the practitioner's non-dual and metacritical reasoning perspectives the social structures maintained the tripartite practice of surface learning – normative learning issues – with instructive teaching as the dominating social practice. Innovative interventions in teaching, such as novel methods through the virtualia teaching and learning template, the practitioner's co-operative and confrontational coaching of a student's daily learning, did not address the students' need to reappraise their external motivational orientations to their learning behaviors by modifying their orientations to internalized metacognitive realms.

Therefore the educational structures that tacitly support surface teaching prevailed despite new scaffolds being set up for the teaching of psychology, such as a strong individualist position aimed at discourses in instructing the students to increase their utilization of internet learning tools and classroom coaching. Therefore, this implementation

latently reinforced the dominating surface learning and teaching practice. Due to the lack of space within this work the detailed sociological (transcendental) arguments as to why positive changes in deep learning did not emerge are not presented here. There are numerous strong, lay social mechanisms that reinforce this normative actualist practice. The dominant instructive means in teaching seem to hinder a student's real reflective problem-solving behavior and her focus on, and re-modification of, her executed real learning activities and on the teacher's coaching of an individual student in the realm of her behavior and its management under her constraints. Teaching methodologies merely fortify instructive teaching that in the metacognitive and academic learning stance indicate a general setback in the enhancement of self-regulated learning. There is no space or resources into teaching that would focus on improving the students' crucial self-regulated learning competencies. This fact has been richly and feasibly delineated during the past few years (see, e.g. Schunk & Ertmer, 2000) where for example, the students' pivotal metacognitive ability of text comprehension (Otero, 1998) lags for a number of mostly unknown reasons. Empiricist practical values that overtly support and encourage a student's engagement in lay teaching discourses are all along high priorities in teaching in everyday practice in nursing studies; there is insufficient room for a student's coaching of her daily learning behaviors.

Here the practitioner's objective is to directly address a student's metacognitive learning so that she scrutinizes it via behavior monitoring exercises. This approach has been totally neglected in dualist psychological research perspectives, but becomes really possible from a critical realist position: how an individual through her referential detachment activities knows of real ontological things and matters. For example, White and Frederiksen's (2005) approach seems to stay within a dualist position albeit its initial objective is quite close to the CBT-informed scaffolding in this project. However, their scaffolding methods are based on instructed role taking which alone are not sufficient for pre-adult and adult students who exhibit worrying and widespread as well as deeply entrenched avoidant behaviors in daily learning.

1.2.2 The readdressing of the students' worrying by additional CBT-informed scaffolds

Primarily, surface learning and its teaching methods are highly valued by the students with less-developed metacognitive competencies, as well as by worrying students. The practitioner's illustrative lectures with their covert coercive guidance of the students to learn, or the assessments of the students' learning outcomes with a rich and updated toolbox of practical norms for nursing, directly maintain the surface learning of a student who tacitly worries. The same weakness also emerges in a student's learning of psychology in all specific deep learning activities, for example reading psychological texts, managing concurrently with one's many strategic learning activities, re-modeling and devising new effective learning patterns and so on. A student is unable to identify positive reinforcements of her learning activities in the coaching discourse when she frequently and simultaneously sees the discourse as bad instructive teaching. In the curriculum-based educational program in teaching psychology the practitioner's specific and fortified attempts to invigorate the students' reflective and strategic learning by their own beha-

vioral and metacognitive activities becomes converted to learning of fragmented norms and theories. That is the reason why the students experience difficulties in managing their contextually arisen feelings and goal-directed learning behaviors. A student's worry and rumination might not manifest as active worrying but as her fragmented and disjointed learning activities; these behaviors represent latent behavioral avoidance (as seeking social support, watching TV, resting in bed) that impairs her self-experiences to her self-efficacy in contextual behavioral activities.

It seems that the students with latent problems in managing their anxieties and anxiety-inducing feelings face a new challenging living situation. They perceive and metacognitively appraise their studies as very demanding and diffuse and they experience difficulties in maintaining the contextual initial on-task performance and its contextual reflection of tacit thoughts and emotions. A significant number of the female students lapse into rumination while covertly and suddenly and even overtly procrastinating in their daily life. Often their depression-prone thinking is evidently dominant over their on-task performance management activities. Many of the students experience difficulties in maintenance of positive self-esteem and assertiveness. The new living challenge to continue with improved, individual, academic studying daily activities within disjointed and contradictory living circumstances causes stress to a student that manifests as her disturbed daily management activities. Under the contradictory living objectives and in seeking reinforcements to their entrenched pre-adulthood living patterns while concurrently embarking on intensive learning and confrontation of adulthood challenges requires a student's metacognitive problem-solving strategies.

In the second research project the vast majority of the students (the dropouts, averaging five students per group, were caused by other factors, such as absence from lessons and subjective difficulties in accomplishing any curriculum-based learning activities) successfully applied the employed CBT questionnaires. The pre- and post-test measurements did not impair or determine the students' learning as their voluntary chosen daily and learning activities when they were able to continue with their initial learning patterns or to engage in new learning activities provided through the scaffolds in the teaching of psychology. The CBT questionnaires were crucial for the validation of the practitioner's behavior assessments of the student's behavior and learning in the deep behavioral functional and dysfunctional competency realms. The practitioner's assessment of the students' behaviors opens the way to progress in his psychology teaching beyond positive psychologies. The latter position in psychology is confined to ideal notions on human strengths without any real path to their enhancement in a student's real constrained life (on positive psychologies see, for example, Aspinwall & Standinger, 2002). This move from positive psychologies to a multifaceted understanding of the divergent behavioral competencies of a structured human agency, as it emerges in an individual's constrained social life, requires from the practitioner CBT conceptualizations and other tools for his quantum leaps to reflect on a client's strengths and pitfalls in individual anxiety and uncertainty management.

From a CBT-practitioner's perspective, the attainment of empirical outcomes from the employment of the CBT questionnaires in the teaching of psychology provide the practitioner with extra, and through statistical analyses, verified data that confirm (either veri-

fies or falsifies) the practitioner's assessments of the students' daily behaviors and learning. It is possible to integrate the additional data from the CBT questionnaires with the practitioner's other data on the students' behaviors that were derived from classroom coaching and via other sources such as the students' written home tasks. By application of the questionnaires in the second research project the practitioner was able to verify his assessment stance as valid and as sufficiently neutral without abnormalizing or normalizing a student's behaviors. The CBT-informed practitioner's observational focus is on the students' real behaviors; his focus is not primarily on a student's overt expressions or on a student's specific abilities. From a critical realist position there is no initial theoretic (dualist) stance, such as an explanatory search for nomothetic anxiety-related behavioral mechanisms that supposedly maintain the students' observed behavioral learning problems. During recent years, there has been much theoretic research on these presupposed internal mind-relations, see for example Bernstein et al. (2009) and Olatunji et al. (2009), but the practical position in this research is not theoretic rather it focuses directly on the social (cube) realm of the educational practice. Here the CBT reframe to human behaviors is reflective problem solving or mindfulness in human behavior where an individual's anxiety and uncertainty management's individual and contextually arising issues are pivotal In this research it was concluded that the students' problems in rumination, connected with their low self-esteem and weak social and learning skills, maintain the dominant safety-seeking behavior as the core potential deficiency, and are themselves the reasons for a student's procrastinating daily behavior.

The two previous empirical research projects established that the practitioner's teaching maintained the most dominant instructive teaching practice of the educational organization, where deep non-trust resides in teacher–student discourses. This dualist theory–practice, learning behaviors–learning outcomes and other dualisms in the teaching strengthened a student's avoidant and safety-seeking behaviors in her learning. Avoidant individual behavioral activities, such as keeping oneself busy and suppression of negative despaired thoughts, impair reflective behavioral activities such as perception, interpretation, evaluation and meta-evaluation. For a tacitly worrying student there is a constant lack of time for accomplishing the most important learning tasks as well as other individual living tasks such as refreshment and individual learning projects. Therefore the practitioner's covertly performed transition from instructive teaching to coaching of the students' daily behaviors and daily learning was not highly feasible to all the students. In their implicit dualist orientations to theoretic and practical learning the students often took the practitioner's coaching as individually threatening and punitive, and they were keen to have the practitioner's instructive guidance on these emotional, conflicting behavioral experiences. As demonstrated by the two earlier empirical projects, the practitioner's (normative) instruction on exact learning objectives and on required learning activities abolishes the students' intrinsic initiatives and the practitioner's collaborative work although collaborative teaching is the only way to address and support the learning of students who are disparate in their behavioral learning competencies. However, the practitioner's abrupt and direct move towards coaching is not possible under the dominant confines of instructive, dualist educational practices because instruction arises from dual-

ist, theory practice positions to dualist seeing, doing and communicating, regardless of, and due to, its rich emotionally driven communicative discourses.

There is a need in teaching of psychology and in enhancing the students' basic problem-solving competencies and self-regulated learning skills to evaluate accurately the students' behavioral competencies and behavioral deficiencies, and to evaluate the behavioral tendencies behind their daily living and learning. The behavior analysis and assessment of the students' behaviors is similar to the CBT-functional analytical approach and its practical tools for defining the students' target behaviors, and it also addresses a student's worrying and avoidant behaviors that need to be met by educational means. The deep line of behavioral assessment of the students' behavior in group settings has its informative basis in the scientist-practitioner's social cube stance in the practitioner's referential detachments to holistic causalities at work (see page 5 in the first research project), which is initially sociological in its basic position to psychological research. From these sociological arguments of the nature of the multilayered social practices in education (as argued here, they are surface learning and instructive in their nature), and by analyzing the students' private social relations, the practitioner-teacher moves on to the behavior assessment stance and to specific CBT conceptualizations in his integrated work in the assessment and the implementations of behavioral management methods. In this practitioner's work such an option might emerge that in the scaffolding of a student's real learning of psychology the practitioner provides CBT means and training protocols for a student's identification, evaluation and remodeling of her real learning behaviors. In a strong, collaborative empirical testing and experimental teacher–student work, CBT means in a student's learning of her individual real learning would encourage and guide a student to confront, validate and revalidate her target behaviors: those behaviors that evidently manifest as her avoidant and ruminative learning and all daily behavioral activities. Concurrently, there arise practical possibilities for the practitioner to perform laboratory research on whether any changes occur in the students' basic behavioral competencies for learning and daily living which would also manifest as the students' improved basic self-regulated behavioral competencies and skills in self-regulated or reflective learning.

It could be that after slight improvements in some students' real, self-regulated learning activities, behavior competencies do not get strong enough to produce changes in social teaching practices for enabling or initiating students' deep learning more frequently. However, this attempt is essential at least as a theoretically reasoned option in introducing social changes towards freedoms, and in the enhancement of the students' problem solving and learning in academic studies. The research issue of this project is to discover whether particular changes occurred, and to assess the feasibility of the additional scaffolding through the invented laboratory programs. There are no guarantees that any positive changes might occur in the students' learning and daily behaviors; that is because the research program arises from the constrained and surface-learning maintained social practices that also coerce the practitioner's work to subsume in instructive teaching. In this research the practitioner does not even attempt to introduce direct changes for abolishing the dominant surface learning and teaching practices in the instructive-

surface-normative practices. In any case, the structures are the very facts and forces that sustain this practice and they might pervade via these potential attempts.

1.3 Psychology course as behavioral template for the students' metacognitive learning

The psychology course as a preliminary study of human nature and part of nursing practice is the optimal template for a psychological empirical research that investigates how to improve basic individual competencies due to its behavioral emphasis on human reflective doing and well-being. Learning psychology of human nature has the same goal as learning and enhancement of one's individual well-being within the perspectives that encompass modern and postmodern knowledge conceptions but go beyond these dualist positions. The perspective in emancipatory teaching is to enable the student's learning of real ontological things, not only learning of actualist theories and abstract norms to nursing or learning by dwelling on subjectivist emotional experiences, because psychological, social mechanisms and all mechanisms are individually known if known at all. The practitioner's initial position to scaffold the students' learning of their psychology studies in their daily life by CBT behavior monitoring is affirmed as the most workable and feasible teaching approach in meeting the requirements and educational objectives of the students with discrepant learning skills and competencies. These extra teaching tools do not require specific educational arrangements, the tools are possible to execute in concurrent teaching practice via software tools and by the practitioner's careful and expert work. Integration of the CBT means and training protocols into behavior monitoring settles the problem of how to gradually and practically progress in emancipatory social research beyond instructive teaching in psychology studies (1.1), and how to progress from there by extra scaffolding of a student's learning (1.2).

1.3.1 Practitioner's steps in dialectical critical realist-informed empirical research

The following sketch of the practitioner's teaching procedures delineates how the emancipatory-oriented research of the students' development and enhancement of their learning obtains only partially positive results in the two earlier research projects, mainly in the construction of basic scaffolding to teaching psychology for the achievement of a more direct collaborative teaching stance. At the beginning of these empirical projects there was no adequate and optimal psychological explanation for doing tailored scaffolding of the students' learning. These explanations emerged from the created, novel research setting and from the second research project with the attainment of an anxiety and uncertainty explanatory reframe. Next, the practitioner's research stepwise procedure is delineated in the way that it emerged in practical teaching. The practitioner did not have initial and manifest rigid objectives in promoting the students' learning because any practitioner's initial theoretical positions would carry unexpected and negative outcomes in the students' learning behaviors.

Firstly, for the practitioner, it is crucial to achieve a valid research configuration in the form of pre-test/post-test settings in order to measure the stability and the potential changes occurring in the students' behavioral patterns and in their core behavioral com-

petencies. In having that configuration to empirical research the CBT questionnaires were deployed and employed to provide a sound and empirically verifiable practitioner's assessment stance, as was gained in the second research project. In the second research project the students' behavioral monitoring exercises in recording their direct evaluation of their daily and contextually arising emotional and other experienced loads was already entrenched and it was intended that the practitioner's innovative idea was to be put into students' rich practical use in the third research project.

Secondly, in order to justify the attained scaffolding position there is the need to exclude other adequate psychological explanations to the students' learning difficulties and problems. The scaffolding was achieved via taking critical orientation to self-regulation as became possible in this critical realist philosophical position regarding the stratified conception of human mind (Bhaskar, 1993, pp. 164–165) and the truth tetrapolity form (ibid., pp. 211–212). The latter notion lays firm grounds to understanding that behavior monitoring means are a sound way to provide the students with means to search for abolishment of their potential flawed inductive generalizations and to give rise to individual true reflections of real social transformative matters. For the practitioner, the task was to perform deep reflective retroactive and retroductive evaluations in understanding and validating the attained empirical outcomes in reflecting on the underlying transfactual social, material and psychological forces of the social cube.

Thirdly, from the attained teaching template for the practitioner there arise options for designs and implementations of CBT treatment means for additional scaffolding of the teaching and even of the students' learning. As is argued here all along, it would be practically feasible because the initial preliminary work in scaffolding a student's self-regulated learning in the first two research projects was successfully accomplished in order to turn the students' interests into their real learning behaviors instead of their focusing on the adequacy of teaching methods such as superficial language discourses.

Fourthly, the empirical data of the students' everyday learning and of their underlying behavioral dispositions through CBT questionnaires was acquired in order to analyze empirical data and evaluate the workability and feasibility of using the teaching program (educational frameworks) to support the students' metacognitive behaviors. It was emphasized to the students that the empirical research on their learning and on their behavioral dispositions had a distinct practitioner's research purpose to improve their learning course in psychology without any connection or relation to their learning outcomes. The practitioner's complete differentiation of the empirical research of this teaching practice from the practical scaffolding and teaching was done in order not to personalize the teaching and learning practices. If the empirical research work and practical teaching and its scaffolding had not been separated then there would be no valid basis to measure the students' behavioral changes and their underlying behavioral competencies would not emerge as a real option. For example, if additional scaffolds in behavior monitoring devices were used as measurement tools of the students' learning outcomes the students' might take the scaffolds normatively and the reliability of the CBT questionnaires in measuring pre- and post-test outcomes on the students' behavioral competencies would be insufficient.

Lastly, if optimal empirical results about the feasibility of the implemented teaching and learning scaffolds were not attained by the practitioner the outcome would lay extra incentives to change or revise his explanation reframes of the students' learning and of their underlying behavioral dispositions in the enhancement of the students' real self-regulated or mindfulness learning. If the programming turns out to be feasible but in need of some refinement then it would be possible to execute that in the next research project (as was done in the fourth research project).

All the practitioner's practical steps through scaffolding of the teaching of psychology to guide the students to integrate their distance and classroom learning endeavors were found to be empirically workable in the second research project. The second project only achieved an adequate explanatory reframe in individual anxiety and uncertainty management realms. However, it becomes possible through the explanatory reframe to re-elaborate the three student subgroups so that the practitioner has sound reasons to tailor and design scaffolds for a student's learning towards meeting the students' divergent behavioral competencies. It has yet to be seen empirically whether the extra scaffolding of this project via CBT treatment protocols is workable in the instructive teaching practice where the earlier, and in real practice, insufficiently executed platform to teaching and self-regulated learning lays only insecure options. The practitioner in putting the attained psychological explanations into real teaching practice makes a quantum leap as to how to refine and re-channel the explanations so that the students' target behaviors can be addressed and enhanced by empirical programming. From this position the practitioner cannot foresee if his empirical programming in CBT treatment protocols and learning scaffolds would be workable because of the vast divergence in the students' behavioral functional and dysfunctional competencies. The basic scaffolds to teaching psychology in the first and second research projects were urgently needed, although insufficient. They laid the grounds for moving forward in scaffolding of a student's learning in the third research project in progressing towards fostering and guiding the students' real daily learning behaviors. The aim was to move from the instructive flawed line of guiding the students in their studies, in order to improve their basic reflective problem-solving competencies, to coaching and collaborative supervision of the students' learning behaviors.

It is worth noting that the coaching of the students' learning behaviors and trustworthy dialogic collaboration is abandoned or inefficiently executed in instructive teaching and in its tutoring practices. The students who have high orientation to emotional-prone thinking and a learning orientation to attend instruction, independent of its rich or flexible or stable teaching methods, take this teaching from a dualistic, modern or postmodern psychological perspective the perspective of which is not metacritical reflection. These students cannot resolve or internalize theories and practices in their non-dual reflections in their daily problem solving. An individual's theorizing absents her creativity and dialectical thinking of real polyvalent things. From critical realist sociological perspectives and from observing the social educational life in the students' nursing studies the general formula of the problem area of reflective doing might be depicted or at least illustrated as follows in the next sub-section. When deep learning occurs to a certain degree, and at least tacitly in some of the students, it might have its latent manifestations, but it does not evolve towards flexible and individualistic practices as more generalized

and expanded educational discourses and in other individually taken practical steps in exclusion of bad constraints. To some extent, but not manifestly, these bad constraints and social structures in the maintenance of the tripartite practice of surface learning, instructive teaching and learning of pseudo- and theoretical-norms might even be politically favored. In any case, in ethically true teaching there is the need in psychology teaching to take this real social educational realm for a students' own chosen scrutinizing, which is the true core in the critical realist philosophical position to human education.

1.3.2 Move beyond dualist instructive teaching by additional scaffolding of the students' learning

While progressing in practical teaching and its concurrent research about its feasibility it is important to seek practical teaching programs that would satisfactorily meet the needs of all the students and their initial divergent and disparate behavioral competencies. To this purpose, the critical realist-informed behavior monitoring methodological approach seems to be optimal because each student as a human individual has vast and divergent objectives and tendencies in her daily behaviors of which some tendencies actualize more and some do not. For the practitioner it also enables the further scaffolding of the students' supervision along with coaching of her behaviors not only her life coaching (for an example of its recent elaboration see Dunbar, 2010). Coaching of a student's real behaviors is wide, contextualized and one's metacognitions are addressed; a life-coaching approach sustains an externalized pre-definition of the main living problems that need an individual's management. In the second research project it turned out that the coaching was not in more intensive use in the teacher–student discourses because the students generally could not utilize the practitioner's direct suggestive feedback and motivational interviewing of their learning activities and new optional innovative learning activities. In their daily life the students could not make use of the feedback to formulate their own realistic learning goals or to perform learning activities to meet their own objectives from the many and discrete general educational objectives. Of course, many students abandoned the practitioner's feedback because their basic behavior management in the pivotal behavioral realm in their behavior monitoring seemed to be disrupted and the students lapsed into tacit worrying. Neither classroom nor distant learning were integrated in their daily activity plans in order to guide them to innovative learning in the intensive commitment to constructively proceeding learning cycles to which incentives were laid by the implemented scaffolds (rich learning materials, classroom coaching, frequent practitioner's feedback to their learning activities and individual learning outcomes). Therefore the practitioner's coaching and collaborative supervision of the students' learning was taken as insufficient and badly performed instruction and lecturing by at least half of the students. In this teaching endeavor to progress from instruction to coaching and collaborative work the CBT-informed behavior monitoring stance works well, as will be delineated below.

The students with their surface learning activities, even if they demonstrated a preference for deep learning (according to second research; see Table 8a, page 185), are not practically orientated to receive the practitioner's suggestive feedback for adequate learning behavioral activities. From a student's perspective these suggestions were understood

as the teacher's normative instructions partly because the suggestions had rather a diffuse character when the teacher did not have sufficient real data on what each student's real learning activities had really been. The teaching turns out to be instructive or, if not, it is understood as instructive in its basic implementation that reinforces the students' surface learning activities.

If a student in classroom teaching argues about her difficulties to engage in efficient learning at home, it does not guide her to take new, adequate and persistent learning initiatives to improve her home studies. The practitioner has no way to guide her individually in her behavioral activities when her monitoring is broken and limited to reflecting on her despairing thoughts. Therefore, for the students, a specific behavior monitoring methodology that helps them scrutinize their own recent behaviors would be feasible if it were executable via a virtualia template as a more intense CBT-informed psychoeducation and by means of the practitioner's real-time supervision of each student's learning behavior.

If the specific CBT treatment interventions, such as home exercises and home studies, succeeded frequently in the students' specific ongoing studying activities in the psychology course, the practical collaborative treatment means would enable the practitioner's real-time feedback directly to each student's learning behaviors. The problem lies there: whether the move to a stronger behavioral position would have taken place via the earlier scaffolding as stronger collaborative trustworthy individual communication requires. Without trustworthy collaboration the tacitly worrying students with broken problem-solving activities cannot solicit accurate advice from the practitioner on the ways to successfully perform their learning activities. That was the situation in this teaching in which the other available data on the students' mainly surface learning behaviors was based primarily on the practitioner-teacher's observation validated by the CBT questionnaires' empirical outcomes in the previous research project. The students' latent behavioral problems are deficiencies in their basic self-regulated behavioral competencies.

The transformation from instruction to coaching is difficult to obtain due to the generative social structures that sustain this instructive teaching practice. Teaching, as the normative presentations of actualist theoretical issues (descriptions and theoretical explanations of daily social happenstances that occlude or restrict an individual's reflection on metacognitively graspable, hidden multilayered social forces), does not meet the tacit expectations of the competent students who lack incentives and manifest options for intensive self-regulated learning activities. The dominant instructive teaching extinguishes their developed reflective skills and behavioral activities; there is no need to theorize this fact here. Thus, in their behavioral patterns all the three subgroups of the students maintain the normative surface teaching in their real learning behaviors either directly or at least latently. Only by tailoring teaching scaffolds that would more directly meet the divergent students' competencies, might it be possible to address the problem about the adequacy of recent learning activities at an individual metacognitive behavioral realm. By the same token, this teaching would alleviate the dominance of instructive teaching at least in the psychology course; it is required in order to maintain metacognitive psychologies and the rise of deep reflective learning as a student's real learning activities. This teaching would improve students' competencies in thinking with one's tacit functional

metabeliefs and in one's management of daily rhythmics. The specifically arranged learning scaffolds would provide means for a student to traverse through individual problem-solving activities in her choosing of, and careful following of, her adequate learning activities.

CBT questionnaires provide the practitioner, by his reflective ponderings about the options to target the students' behaviors, with an opportunity to evaluate the students' self-regulated reflective learning behavior and its deficiencies along the main lines of behavior analysis. A student's behavioral assessment of her learning and daily behavior is similar to the CBT clinical client settings in this coaching practice. Although the assessment does not warrant the importation of specific individually tailored treatment methods, introduced to the teaching as learning scaffolds in this research, they validate and allow the tailoring of behavior monitoring specifically to address the students' divergent learning competencies and behavioral activity patterns. If the behavior monitoring methodology were workable, at least for the competent students, it would enable the practitioner's validation of their inherent and fairly advanced competencies in their metacognitive behavior monitoring. This individual discovering would lay incentives for the students for their individually chosen strive for applications of enriched psychological viewpoints and options for individual conceptualizations of human behavior. Also, if other students validate problems via these imported behavior monitoring exercises, then this might pinpoint their behavioral shortcomings and encourage them to employ new behavioral activities through the introduced CBT treatment means and exercises which are incorporated into the behavior monitoring methods.

This broad delineation about the invigoration of coaching and collaborative teaching of nursing students requires elaborate scaffolding and its preliminary programming as elucidated next. First, the CBT broad conceptualization of daily worrying and avoidant behavior (as safety seeking and to these behaviors veering behavioral chains) must be introduced in a common reframe to behavior as mutually conjoined, divergent and contradictory individual behavioral tendencies. Human psychology of skills or abilities would not enable this non-dual dispositional position to teaching practice, as has been delineated in critical realism (see Bhaskar, 2000), but the position is adequate while the social world as constrained and multilayered is pre-existing and lays grounds to the rise of individual human agency. Second, in order to introduce a psychological competency stance into the students' real learning of psychology about human nature in their real social constrained practice, the practitioner needs to conduct a wide theoretical search of the broad, comprehensive, behavioral monitoring stance that is consistent with each student's divergent behavioral competencies (the mindfulness stance with its divergent monitoring modalities). Third, the practitioner has to construct tailored behavior monitoring recording and its exercises by incorporating specific CBT treatment methods into behavior monitoring exercises. Fourth, the putting into practice of the practitioner's comprehensive reframe of understanding and introduction of changes into the students' learning requires planning and construction of psychoeducative guides for the students on how to use the implemented monitoring methods of their daily learning. Fifth, the next theoretical work and its depiction requires a logically coherent empirical investigation of the feasibility of the learning scaffolds into the students' self-regulated learning

because the research setting, somewhat similar to CBT client practices, has already largely become consolidated in this teaching practice, as described and demonstrated in the second research project.

1.4 The students' avoidant behaviors in their learning

The practical execution of the search for the obstruction of the flawed tripartite educational practice in transdictive complexes of irrealist lines to education is a demanding challenge to address successfully in this real practice, although here such an evaluation is not the issue in sociological terms. The stepwise practitioner's path towards the scaffolding of the students' learning was delineated above. First, the scaffolding of the students' learning requires new conceptualizations, and from the educational social life arise theoretical explanations of the students' target behaviors in their daily learning in the three subgroups, as to how they would improve their learning within their own capacities and inclinations. These explanations, if they are directly inferred from the social cube of education and if they turn out to be the most scientifically adequate, would provide justified and reasonable grounds in setting up behavior monitoring-based CBT treatment protocols to be introduced to the constructive learning process in the psychology course. These achieved explanations are depicted in 1.4.1; this practical work comprises the practitioner's many professional theoretically executed, as well as practical observational endeavors, to find the most optimal practical line in the behavioral assessments. This will also show the practitioner's quantum leaps to provide tailored scaffolding for the students' totally disparate daily learning behaviors. The practitioner's behavioral assessment as well as his tailored scaffolding of the students' learning is based on a behavior monitoring position in which there was adaptable, CBT activity scheduling and training methods which were implementable in the students' real learning of the psychology course. The specific CBT treatment methods introduced to the students' learning are described and crucial theoretical roots are depicted in 1.4.2.

1.4.1 The need for additional scaffolding of the students' learning and daily behavior

Generally, in the second research project, the vast and disparate divergences in the students' learning and problem-solving competencies received a deeper psychological explanation. The students diverged into subgroups in the second research project and are suitable to become divided in this project into three main subgroups with regard to their functional and dysfunctional behavioral competencies. Some students have stronger functional behavioral competencies in management of their daily rhythmics, and they do not seem to need the practitioner's specific support for their further development in self-regulated learning. The second large subgroup of the students is diffuse in their learning and daily behavior management; these students exhibit continuous difficulties in performing necessary learning activities (attending classroom sessions, receiving feedback on the performed learning activities and learning outcomes by virtualia, or by other collaborative means). The third subgroup of the students seems to be frequently and tacitly lapsing into avoidant behavioral patterns, and they frequently and dominantly demonstrate engagement into their worrying and depressive thought and behavioral patterns.

The students in the two last subgroups have common pitfalls in their self-regulated learning activities. They fail to perform preparatory homework in reading psychological texts in order to benefit from classroom coaching, collaboration and from the flexible use of teaching methods. During lessons these students seek a concrete illustrative teaching of basic theoretic norms.

In both the latter subgroups the students' general attribution to their learning objectives and difficulties is dualistic and not satisfactorily behaviorally manageable through their own behavioral activities, as their own strategic and goal-orientated behavior. The students attribute their failures in learning activities either to difficulties in learning materials, to other external factors, or to their internal lack of abilities and to their emotional loads. Generally and specifically the main learning objective here in psychology studies is a student's strive for constructive psychological explanations of ones' own and other's daily behaviors. The fact is that a large number of the students fail in their metacognitive behavioral management to find a way to improve their learning through the dominant and fairly coercive instructive teaching and tutoring educational frameworks. Contextual and richer psychological explanations in psychology studies require from the practitioner-teacher and from a student a deeper description and re-explanation of her behaviors. It is possible to do so by turning to the CBT tools and conceptualizations of anxiety-related behavioral problems, and in particular the ones common in treating clients with generalized anxiety disorders (GAD). The students, in their tacit and overt avoidance of anxiety-related experiences and their limited reflection on depressive thoughts and on impaired on-task performance, might retain and persistently stick with their safety-seeking behavioral patterns. The students could take their potentially dysfunctional behavior as functional and the only feasible and available strategy to manage with dynamic environmental circumstances.

The three-mode classification of the students' learning behavioral patterns was established from the metacognitive psychological perspective to individual uncertainty and anxiety management and it was proven to be the most optimal explanation in the two earlier research projects. This is a specific additional achievement that is not attainable by theoretical ponderings only. However, it must be kept in mind that there are many students in the third subgroup of the researched students' groups who do not experience such dysfunctional behavioral and avoidant behavioral patterns in their uncertainty management. These students with more functional, anxiety management activities would also require adequate incentives to initiate their self-regulated reflective learning because dominant instructive teaching directly extinguishes these behaviors by reinforcing surface learning. Thus, the practitioner's purpose is to empirically discover the students' behavioral patterns in managing their uncertainties that is the core in new metacognitive psychologies of human mindful behavior.

From the perspective of the dispositional psychological reframe to human stratified agency the students with continuous shortcomings in their learning provide the practitioner with a deeper psychological explanative realm: how a student's reflective learning on human behaviors without dualisms between thoughts and overt activities takes place as an individual's non-dual reflection in one's constrained life. The teaching of psychology (or speaking generally, in enhancing the students' reflective basic competencies in pre-

adult studies) requires the practitioner's deep conceptual elaboration and an understanding of the magnitude and characters of the deficiencies in the students' learning and daily life. The practitioner's initial CBT-orientation was elucidated by depicting anxiety psychologies from CBT –perspectives; in these perspectives there is a large subgroup of students which represents both the latently worrying students as well as the students with lagging identity development and deficient on-task performance competencies, who inform the practitioner's ethically sound need to deploy CBT means in teaching.

By following the CBT delineations of the students' behavioral problems and by following Borkovec et al.'s (2004, pp. 79–80) conceptualizations, it is shown that the students' procrastinating behavior emerges when they strive to avoid feared stimuli both in their thoughts and overt activities. Their rumination and worrying excludes positive experiences of an individual's own self-efficacy, and their tacit failures in the management of their anxiety feelings weakens and often breaks up their reflective problem-solving activities. For example, self-focused processing of despairing thoughts, cognitive biases, cognitive and metacognitive distortions at a schema level are thoroughly researched in contemporary CBT research. Wells' (1997) two-stage theory of pathologic worry provides the general theorizing frame in delineating the avoidant behavior in CBT terms. However, when theoretically isolated from a practitioner's behavior assessment, this theoretic explanation strives to explain only symptomatic and pathologic behavior and not all of an individual's behaviors thus excluding the concurrent assessment of a client's on-task performance behaviors that are one side of the same coin of individual anxiety and on-task management. In this project both of these contradictory behavioral tendentious aspects and individual forces are integrated in the mindfulness psychological reframe as the critical realist philosophical notion to human mind of divergent contradictory and mutually related forces inform. This position departs from the most common psychological research about monolithically and theoretically deduced one or multidimensional mechanisms of human mind; this latter position is dualistic in its subject–object dualism.

Wells' conceptualization of pathologic worry connotes to worrying about one's worrying (ibid., p. 204), and worry becomes induced by an individual's tacit dysfunctional metacognitive schemata. The two-stage theory of worry delineates, but does not explain in the contextual realm of an individual's real social behaviors, how one's worrying in control processes can sometimes increase worrying in conjoined behavior dysfunctional cycles. Metacognitive activities can be rigid and dysfunctional metabeliefs, not malleable and accessible to one's continuous metacognitive appraisals and re-modifications. Wells' theory is constructed for clinical psychotherapeutic use. Mindfulness activities of clinical patients are often weak and biased, such as their attentional, interpretative, evaluative, or other activities that need direct treatment means. Here, among the students, the psychotherapeutic treatment of this kind of pathologic worry is not relevant as indicated by the second research project. Therefore, in this project, this theoretic aspect could be integrated into one and internally multidimensional behavioral modality to a student's psychoeducative use in behavior recording techniques. The students in their identity development find themselves living and behaving under their entirely contradictory living conditions as the critical realist notion of a social cube informs. This is the behavioral

realm to individual management and integration of one's initial metabeliefs and their social demands.

It is conceivable that when the students' competencies become metacognitively experienced and evaluated by them as inadequate in reference to the new living tasks their tacit worrying might increase, prolong and cause difficulties and disruptions in performing adequate behavioral activities and in getting positive meta-experiences of their self-efficacy in daily behaviors. A student's tacit metaworrying could increase her concrete ruminative and worrying thinking patterns through their mutually reinforcing and conjoined psychological mechanistic control processes when the metacognitive realm is impaired by rigid meta schemata. At a surface or overt behavioral level these shortcomings in individual reflective problem-solving activities might manifest as their behavioral shortcomings in their on-task performance and as their procrastination in self-regulated learning activities. If there is sufficient individual knowledge, skills and core behavioral competencies to manage these individual behavioral issues to act, then rumination and worrying behavior could be unconscious and viewed as a functional and optimal way to manage these internal things initiated by one's anxiety; the behavioral tendency of lapsing into rumination and worrying can thus be perceived as functional by the individual. Its initiating sources are specific stimuli that could be interpreted as covertly or overtly threatening and unwanted and can become consolidated into one's inherent deep metacognitive dysfunctional schemata. For example, the dysfunctional schematic mental constructs as one's behavioral chains could support the individual's seeing and appraising her thought-suppressive strategies as active and positive attempts to gain control over individual thought's contents and thinking patterns. If thought suppression or other safety-seeking behaviors get a foothold in a student's behaviors in her active problem-solving situations, for example in managing behavioral goals that have many different and divergent directions, then it is difficult to challenge and address collaboratively. The same problem might also emerge in implementations of behavior-monitoring training means in this project, but there are no other practical means available in the educational practice when basic teacher–student and student–student discourses might be deeply contaminated by dualist, emotivist inductive reasoning.

The strength and severity of the students' behavioral problems (as specific behavioral patterns and tendencies similar to generalized disorder) in the two subgroups with less developed problem-solving competencies are impossible to explain accurately in psychological conceptualizations without lapsing into fruitless, theoretic abstract ponderings. Instead it is feasible to infer the conclusion from the previous research project that the students have ruminative and depressive behavioral problems at least latently, as for example indicated by their means in the TCQ questionnaire. Of course, this conclusion on the students' active behavior tendency to avoid stress-initiating situations and threatening internal stimuli that induces their increased anxiety-related feelings only applies to approximately a third of the students in the groups in question. However, in the second research project the other subgroup of the students with weak self-conception and underdeveloped behavioral social skills also dominantly manifested avoidant and procrastinating behaviors, as the outcomes of the Social sensitivity questionnaire, the AnTi-questionnaire and the TCQ questionnaire showed. For example, some students' means in

the social support sub-dimension of the TCQ and all the three specific sub-dimensions of the Social sensitivity questionnaire (interpersonal worry and dependence, low self-esteem, low assertiveness) indicate challenges in students' maintenance of positive self-esteem and identity development. These two relatively distinct student subgroups together comprise the vast majority of the students in the large teaching groups. Thus, in the everyday practice in nursing studies, these students mainly determine that this educational practice will proceed with the traditional instructive teaching practice. These students have social power or a capacity to exclude other innovative teaching practices as inadequate with the teachers' passive affinity under the dominance of the aforementioned (un)holy trinity of instructive, dualist-theory practice teaching.

1.4.2 A feasible line to behavior monitoring methodology in scaffolding the students' learning

Here, in the teaching of psychology, is neither a need nor a real possibility to execute exact clinically relevant diagnoses about the students' potential anxiety problems but deeper explanations of the students' avoidant behaviors, as their target behaviors, are needed if the practitioner's scaffolding of their learning is to be ethically justified. Already it has been shown in the first research project that applied behavior monitoring methodologies can address all the three student subgroups' learning patterns in their competence realms. In addition, behavior monitoring methodologies provide options for the practitioner to incorporate specific CBT treatment methods to behavior monitoring in which the teaching is managed via software or a virtualia learning template. From a critical realist philosophical perspective to emancipatory axiology for human freedoms (individual well-being for well-being of all) the three categorical classifications of the students' divergent subgroups regarding their reflective, discrepant, behavior management competencies require scaffolds which are manageable and feasible to all the divergent students.

The students who demonstrate anxiety behavioral problems and avoidant behaviors, such as procrastination problems, primarily and more often have latent anxiety problems but in the dominance of dualist theory–practice and instructive teaching their deficiencies are sufficiently strong to sustain these instructive teaching discourses. The students' behavioral patterns must be challenged in some way in the realms of their daily behaviors because in the second research project the practitioner's accomplished intensification of real-time feedback without any individual scrutinizing means of one's own recent and current behaviors was not sufficient alone. The objective is not achieved by instructive teaching means because they are not transformed into collaborative discourses while under the dominance of surface teaching structures in the maintenance of theory–practice dualism in discourses. Because most of the students' behavioral on-task performance is weak and disrupted, without their own tacit knowledge of it or explicit practical knowledge for revising these behaviors, their learning and behavioral patterns need to be addressed wholly and thoroughly in order that the students can go beyond these dualisms in their reflections. The applied behavior monitoring stance remains as the optimal and manageable strategy for enabling these changes in social practices because the application does not require any specific preliminary changes and re-channeling of the students' daily living and learning.

Behavior monitoring methodologies require extensive preparatory work from the practitioner in setting up practical psychoeducational executive programs and attuning them to the ongoing procedural use to software or virtualia learning template. There is no previous international research work that would serve as the practitioner's guidance to that preplanning, and in the educational organization there is no consolidated practical basis to the CBT-informed supervision of the students' real learning behaviors. So the only primary supervision and justified basis that this practical work requires comes from the scientist-practitioner's own assessments of the students' divergent daily learning behaviors, from the two earlier projects that accomplished scaffolding of the teaching of psychology, and from the third self-corrective research and teaching project itself. The practitioner's programming of the students' learning of psychology requires his expertise in clinical psychotherapeutic work in treating clients with the same types of anxiety and behavioral problems. The practitioner's reflections especially inform his search for adequate CBT treatment methods that directly guide the students' scrutiny of their divergent and behavioral activities, which veer into many behavioral directions, in their learning.

In inventing and incorporating the CBT tools and methods in the teaching of the students, and in supporting them to enhance their self-regulated or reflective learning, it is necessary that they become empowered to encounter anxiety-initiated behavioral patterns such as rumination and worrying. In clinical work settings, rumination and worrying are core behavioral features in clients with various kinds of GAD, where a client's behavioral patterns in on-task performance and goal-orientated behavioral management are broken and metacognitive monitoring of concurrent behaviors is weak. The students with generalized anxiety can tend to focus on managing their momentary situational stimuli; under weak metacognitive reflective activity of self-correction of tacit thoughts and metabeliefs this limited focusing with the lack of positive realization of individual self-efficacy can consequently increase their tacit and biased generalizations regarding all real social things and their underlying relations that need to be reflected. If one faces uncertainty without understanding it mindfully in one's metacognitions then one's on-task performance remains impaired under the dominance of despaired and worrying thinking patterns. These individuals might perceive and attribute their contextual on-task performance deficiently as dysfunctional without grounds, if it is viewed from other reframes, such as from acceptance and commitment therapeutic perspectives. For example, in classroom learning the students with less developed social and other problem-solving skills and under stress-initiating behavioral situations express oversensitivity to significant others' reactions, while missing the contextual nature and subjective intentions in their interlocutors' expressions. The students who are somewhat despaired can be keen to receive concrete feedback to their learning and might concentrate on receiving positive feedback without grounds and thus be disappointed. All these behaviors might be included into the students' fresh validations in devised behavior monitoring methodologies, if there are means and recording techniques that are broad and sufficiently flexible for the students' own choosing and contextually managed implementation in their daily learning of psychology.

1.5 Challenging the students' deficient learning as their safety-seeking behaviors

The just described general CBT approach to an individual's functional and dysfunctional anxiety-related behavioral patterns must be taken into the students' practice so that they themselves in their learning can scrutinize their real contextually arisen behavioral activities. Thus a student's practicing of her real behaviors becomes possible via behavior monitoring means by deepening of the CBT conceptualization in individual anxiety management via a dialectical, critical realist-informed position to individual behavioral modalities. For the practitioner the objective of scaffolding the students' learning of psychology is not a theoretic question but a deeply practical one, as to how to address the students' functional and dysfunctional behavioral competencies, as their behavioral tendencies and liabilities, to their own scrutiny and remodeling of their recent daily behaviors.

Elucidation of the practitioner's practical stance requires theoretic depictions in demonstrations of how the behavior monitoring stance, as individual behavioral competences become possible in the anxiety psychological reframe, is presented in 1.5.1. The importation of behavior monitoring means by scaffolding into formal teaching (primarily lecturing) is a demanding challenge for the practitioner to describe explicitly due to a deepened, theoretical CBT-informed understanding of the students' avoidant behaviors, delineated in 1.5.2. It is not simple for the students to confront their avoidant behaviors in their learning and daily management in an emancipatory educational stance or even in psychotherapy, as elucidated in 1.5.3. In 1.5.4 it is established that the importation of a mindfulness and behavior monitoring methodology into the teaching course is inferred in a general cyclical reframe of human control (about behavioral modalities in the psychological realm of structured human agency as it emerges within social transformative social life, Bhaskar, 1993, p. 167). It is asserted that the practitioner's strategy for scaffolding the students' learning emerges through behavior assessments of the students' behavior and it is theoretically workable in order to collaboratively challenge the tacitly worrying students' individual daily behaviors.

1.5.1 A student's latent worrying can be re-challenged via behavior monitoring exercises

When the students' avoidant behavior is beyond their metacognitive control in learning and daily management it gives rise to their safety-seeking behaviors through CBT conceptualizations. Safety-seeking behavioral activities and activity chains, such as restrictive attentive, interpretative or overt activities to seek direct alleviation from experienced despaired thoughts and anxieties, can become introduced to the students' scrutiny by psychoeducation, coaching and collaborative supervision if behavior-monitoring recording techniques are broad enough. In the CBT-informed approach the students' avoidance, safety-seeking behaviors, such as rumination, can be one behavioral tendency that might tacitly impair their persistently executed learning activities. This can occur if safety-seeking behavioral acts and activities do not become smoothly left aside by the individual's daily metacognitive mindfulness and on-task performance activities. In psychotherapeutic CBT practices, safety-seeking behaviors need treatment and in a similar vein they can be introduced to a student's individual learning via software, technological,

real-time recording means in monitoring and scrutiny of all one's recent and concurrent behaviors (both safety-seeking and on-task performance at the same time). The theoretic conceptualization of individual behaviors as different and contradictory dynamic modalities is not based on theoretically or contextually inferred and deduced skills and other capabilities or on behavioral styles, instead it is based on the sound critical realist position of human dispositions as they emerge in the individual's open totality of transformative, multilayered social life (social cube).

An individual's avoidant and safety-seeking behaviors in one's daily rhythmics or in living within one's contradictory world-lines is not the same notion as the modern dualist conception of individual defense mechanisms. In critical realist philosophical perspectives the former can be conceived as a broad notion that comprises all individual, behavioral, dynamic internal and external behavioral forces. For example, a student's ruminative activities, such as disruptive thoughts and overt behavioral activities, can become initiated in the course of all specific behavioral activities (such as thought suppression, positive/negative thinking) and somehow be functionally or non-functionally assessed, appraised and re-ascribed by the individual herself within the open social life and its individual rhythmics.

If a student can identify her safety-seeking behavior as her strive to avoid and appraise her contextually arisen anxieties and aroused feelings as negative via the specific behavior monitoring means, then she might be able to re-identify all her different anxieties as her contradictory behavioral tendencies. If internal despairs and anxieties in her scrutiny practices of her behavior monitoring become re-evaluated as feasible or manageable in the course of goal-orientated behavior management, then she might be able to disrupt and stop her avoidant behaviors and, by other on-task performance activities, directly engage with her on-task learning activities more keenly. In these individual learning endeavors the practitioner's collaboration and software feedback to her recording and behavioral modification endeavors could be workable, and these scaffolds to teaching and learning of psychology might strengthen the teacher–student collaboration that would abolish instructive teaching discourses. By her re-validation through the CBT treatment means introduced via her monitoring recording in individual behavioral modification she might abstain from, and attempt to stop, the avoidant behavioral activities that she might take as negative or inadequate regarding the tasks at hand. Or she might reappraise her recent behavior as functional although emotionally difficult and stressful by applying a stronger acceptance and commitment stance in her intense focusing on management of her concurrent problem-solving activities.

Probably, in excessive rumination this is not possible, especially if an individual's tacit and unconscious tendency to worry spontaneously and compulsively initiates a number of mutually reinforcing avoidant safety-seeking behavioral acts and activity patterns. As Nolen-Hoeksema (1998) describes, avoidance might be dominant, such as active thought suppression and "…paying excessive attention to their negative moods but not taking appropriate action to deal with their problems and instead lapsing into self-destructive suppression activities" (ibid., p. 218). Worrying can also occur in behavioral patterns concurrently with one's disrupted problem-solving behavioral activities when worrying leads to restricted focus on one's anxieties with weak positive self-consciousness of one's

self-efficacy. In aroused and frequently negative emotions and avoidant experiences the individual tries to directly maintain her positive self-esteem and self-efficacy by safety-seeking activities without concentrating on a broader and flexible perception, interpretation and evaluation of her behaviors. In the behavior monitoring methodology devised and constructed in this project it is possible to leave this perception and attribution of one's own behavior activities to the individual's first-hand own scrutinizing. The behavior monitoring stance in exercises must thus be as broad as possible within the social cube reframe, so that the employed recording protocol itself does not directly and simply cause increased and dysfunctional restriction to one's behavior monitoring. Therefore a mindfulness psychological position provides the optimal reframe into behavioral modalities as is the critical realist position into a structured human agency; this projects aims to determine whether such a position can be put into real practice.

The general approach in deploying the monitoring records means guided the students to realize that their worrying and ruminating activities can sometimes be dysfunctional in impairing or even entirely occluding them from on-task and other reflective problem-solving activities, or that they were already engaged in their acceptance and commitment activities in managing their daily challenges. Thus, in this behavior modality position, all worries and negative or aroused emotions need to be re-interpreted and re-evaluated by a person in her behavior monitoring within her concurrent reflective problem-solving activities.

In Papageorgiou and Wells' (2004) delineations, worry and rumination are frequently dysfunctional: the former is characterized as repetitive thoughts of anxiety-related fears and threats about the future, the latter contains thoughts and patterns of themes regarding past personal failure and loss (p. 7). Such thinking modes could interrupt a student's metacognitive care-taking of her thought flow which is the real essence of one’s spontaneous and metacognitively managed behavior control. Individual thinking patterns that are initiated by despaired emotions can give rise to thought suppression strategies regardless of whether the emotional loads might be functional and an essential part of one’s reflective problem solving. By following Rachman's (1976) and Salkovskis' (1996) delineations the students’ latent worrying and rumination in all specific forms of safety-seeking behaviors lapses into over-positive thinking patterns; individual safety-seeking behavior is a nodal behavioral issue that requires direct addressing in one’s individual learning. As a nodal point in the maintenance of a student's procrastinating behaviors her safety-seeking behaviors might play a part in her generation of dysfunctional metacognitive worries and give rise to rigid dysfunctional metacognitive schemata. These tacit dysfunctional behavioral patterns might restrict and prevent the students from performing efficient learning activities and their behavioral acquisition of new behavioral and social skills will remain weak and broken. A student might resort to safety-seeking behaviors within the confines of limited broad reflection or mindfulness thinking, but this behavior takes its place in the constrained world itself when a student does not have metareflective capacities and competencies to reflect on, and to act on, her real constrained world things and forces (social cube). Individual behavioral difficulties have no specific genetic or other deterministic laws in this critical realist position, in her daily management of individual world-lines, as her discrete and contradictory activity sche-

dules, a student might experience difficulties in the successful maintenance of her positive experiences.

1.5.2 Educational and therapeutic obstacles in addressing the students' latent worrying

In the behavior monitoring stance that was introduced into the practical teaching there is no need to explain the conditions and to objectively search for all the different sources of the students' worrying and avoidant behaviors, albeit that the practitioner's knowledge serves as an informative basis for constructing tailored behavior monitoring exercises. The practitioner-teacher has already obtained individual knowledge of the students' divergent behaviors and their shortcomings in learning from home exercises and from observational knowledge of their behaviors in natural learning environments. This knowledge maintains the introduced therapeutic practitioner's line in supporting the students in dealing with their worrying and rumination by behavior monitoring exercises via a simultaneously introduced broad training template for new skill training in ordinary learning processes and learning activities. In the smooth collaborative management, as an essential part of teaching psychology about human nature, of the implemented novel and tailored exercises in behavior monitoring the practitioner's aim is to support a student's deepened understanding of human nature as contextually arisen individual behaviors. This specific learning practice might prevent or empower her with means to not lapse into abstract generalizations about actualist and dualist theoretic norms about human nature. For example, a practitioner's general demonstrations of problems in a student's concentration do not help a worrying student to dispose of, and re-modify, her problematic behavioral habits and patterns. Such dysfunctional behavior might be deeply rooted into individual behavior in one's tacit or even unconscious perceptions, thoughts, interpretations and evaluations, as the CBT behavioral position elucidates. These embodied shortcomings of dysfunctional behavioral habits and orientations are in need of identification, re-evaluation and even of revision by an individual's metacognitive reflections, not only by one's formal cognitions in order to act on one's daily constrained uncertainty and anxiety management behavioral realms and on one's daily rhythmics.

It is not feasible to apply either pathogenic or normalizing positions alone to one's individual anxieties and to their individual management to adequately justify the behavior monitoring position in behavioral modalities. Take for example Lyubomirsky et al.'s (2003) dualist position, how the weak or totally absent explanatory power-problem in explaining the described ruminating behavior manifests in real educational or psychotherapeutic practice to deal and manage with one's ruminative behavior. Lyubomirsky et al. state that rumination and worry impair learning in academic tasks or in general problem-solving behaviors when ruminative and distracting responses come into operation as attempts to alleviate depressive symptoms. They broadly and consistently refer to other empirical research on the issue, but do not add much to the means and strategies in real therapeutic practice on how to guide an individual to shed off of her potential ruminative thinking patterns and acts that impair her reflective problem-solving activities. Their main suggestion is to apply distraction at first to confront depressed moods and, when

depression elevates, to undertake problem solving (ibid., p. 311), but they say nothing about how this could be executed in educational or other therapeutic settings under heavy laws of a client's or student's real constrained polyvalent life. They seem to commit a flawed dualism in differentiating one part (rumination) as the only focus needing treatment, but rumination might not be identified and reappraised or at least shed off by the individual herself in this limited theoretical focus. Rumination and on-task performance behavioral activities both work in a parallel and contradictory fashion and they tend to contradictory directions simultaneously in one's daily rhythmics. Here, in this project, it might be difficult for a student to differentiate between a depressed mood and aroused tension and anxieties, and for her to identify and verify appraisals without her own repetitive CBT exercises and training activities.

An individual's behavior, especially in mild and latent worrying, can frequently manifest itself as one's multiple and mutually conjoined safety-seeking behaviors in limited perception, interpretation and evaluation rather than as an active brooding and depressive thinking habit or as one's partially and ineffectively executed behavior activities. This might mean that the students' active safety-seeking behaviors, that are initiated by their common dualist explanatory behavioral reframes, are ineffectual and motivated by extrinsic fears and/or by imagined catastrophes and not by their deep maladaptive and dysfunctional behavioral mechanisms. Extrinsic motivation, to which a worrying student without strong metacognitive activities is prone, does not trigger intrinsic motivation to engage in improving one's deficient learning habits into effective ones. The students' dualist, prone problem-solving activities frequently collapse because of their procrastinating activities in their daily projects because of their reliance on their safety-seeking activities (such as partial concentration, attention directing or even thought suppression). The concept of experiential avoidance (Hayes et al., 2004) does not add anything to the non-dual and non-theoretic individual explanation or to the shedding off of one's impaired problem-solving behaviors. Therefore, there is the need to move to non-dual and reflective practical tools for students' monitoring and validation of their behavioral and learning activities in one's real social polyvalent life.

A strong approach was taken in this project to connect a student's behavior assessment with targeted treatment methods for re-challenging her daily behavioral activities and in undertaking new (mainly metacognitively informed and guided) initiatives for her remodeling of these activities, and specifically those activities that would potentially turn into worry and rumination. Safety-seeking behavior is not conceived as a theoretic issue but as a practical tool in one's behavior for an introduction of the conceptual and categorical device and viewpoint of individual understanding of one's avoidant behaviors, of which position perhaps Rachman (1976) and Salkovskis (1996) and Clark (1999) are the most outstanding CBT practitioners in contemporary practical work and psychotherapeutic research. For tacitly worrying and ruminating students a crucial and specific practical tool might be to monitor and validate individually aroused tensions and anxieties by differentiating their, at least two, directional and dimensioned aims and behavioral tendencies. The first one is the integral part in individually committed and accepted on-task performance and its smooth continuous challenging and metacognitive managing of one's future behavioral objectives and circumstances, and the other is individual activi-

ties to avoid suddenly aroused anxiety thoughts and emotions. In this research the four individual opposing behavior modalities under individual behavioral management are specifically introduced to the students in sub-section 2.3.1 for their re-validation by behavior monitoring exercises and CBT treatment protocols, as is explained in sub-section 2.3.2. Safety-seeking behavior as a conceptualization is different from other theoretic notions of defense mechanisms by administering behavioral relief for despair and negatively perceived or intuited negative experiences. As a conceptualization, safety seeking is not equivalent to defense mechanisms or categorizations of specific coping mechanisms in modern psychologies: the latter are dual and theoretic notions to contextual human behaviors or perhaps to a human personality.

Safety-seeking behavior can be ruminative in itself; for example, Lyubomirsky et al. (2003) conducted research on rumination that impairs problem-solving abilities. Rumination and worry are not the only behavioral patterns to be addressed by the students' validation and revalidation in psychoeducative programs because rumination and its monitoring might themselves cause additional worrying. Thus safety-seeking behavior, both as a technical tool to monitor and to revise one's behaviors and as a general professional psychoeduational and instructional practical device, supports the students' metacognitive understanding of individual anxiety-related behavioral problems and anxiety disorders not as a theoretic outlook but as their real behaviors.

A student's recording of her recent daily and learning behavior by means of individually selected behavior exercises could support and enhance her spontaneous and mindfulness problem-solving behavior. Monitoring one's contextual behaviors might be the only solution to treating mild rumination and anxiety-related behaviors, where clients, and the students here, in their abstract (from emotions to facts as false conclusions) generalizations do not perceive any reason to appraise their real worrying behavior either as partially functional or dysfunctional. Anxiety-related behavioral patterns and habits in human behaviors are numerous and they become generated by an individual under her constrained social conditions. Functional and dysfunctional psychological behavioral mechanisms in perceptions, interpretations, evaluations and meta-evaluations are mutually conjoined; in individual behavior there can also emerge social conditions where negative accelerative tendencies towards solving problems via the dysfunctional behavioral patterns have more space. In CBT therapeutic practices, extensively utilized dualistic behavior monitoring methodologies are revised here into non-dual devices through dialectical, critical realist-informed, behavior modality positions. It was argued here that it is the only adequate practical line to the teaching of psychology, when instructive teaching practices have become reified to support a student's superficial surface learning under dualist, theory practice confinements.

As discovered in the two previous research projects, the students exhibit a common behavioral pattern (see for example, Robinson & Alloy, 2003) of ruminative and depressive behavioral reactions to managing their new and more stressful living circumstances. This depressive reactive activity in a number of the students is a natural obstacle that must be confronted and re-challenged during the learning of psychology and of basic problem-solving behavioral skills. The importation of behavior-monitoring recording means might support a student's acceptance and commitment stance to her management

of daily stress in which her uncertainties and anxieties are an integral part of real reflective problem-solving behaviors. It could be that the psychoeducative monitoring methodology is too weak on its own to invigorate the students' self-regulated reflective learning and to give rise to strong individual behavioral competencies. In client clinical settings this is the case in borderline personality problems, obsessive behaviors and pathologic worrying. For example, in obsessive-compulsive disorders Salkovskis' (1996) conceptualization of increased responsibility over one's behaviors suggests that primarily a psychoeducation-based behavior monitoring practical protocol might be too weak or insufficient to encourage a client to accept contextually arisen uncertainties and strong obsessive thoughts without further and increased engagement in safety-seeking and ritual compulsive behaviors. In any case, for the practitioner the behavior monitoring methodology provides additional assessment means for establishing a more distinct conception of the nature of the students' avoidant and problem-solving behaviors.

Zvolensky et al. (2001) prove empirically that interpretative biases for threat with lack of smooth behavior control can occur; they refer to many researchers who elaborate on similar dysfunctional safety-seeking behaviors. In addition, Dugas et al. (2004) and Dugas et al. (2005) have elucidated and conducted empirical research on how an individual might behave dysfunctionally in the search to alleviate uncertainties in her behaviors. In their projects it was demonstrated that an individual's tendency to avoid uncertainties could increase interpretative biases that are more commonly related to a client's rumination than to her depressive behaviors; in a critical realist position avoidant behaviors can manifest as one's abstract flawed generalizations. Inductive reasoning and flawed generalizations, such as from values to real things, also emerges, at least tacitly, in Teasdale and Barnard's (1993) ICS framework, namely in its propositional mode of conscious focusing on information without metacognitive awareness of one's epistemic conceptions. The other mode of cognitive processing, the implicational mode, as Watkins (2004) delineates it, is functional and it does not initiate worrying and rumination which is "a non-evaluative, intuitive, direct experiential awareness of experience in the moment" (ibid., p. 1039). Practical designs for behavior monitoring are appropriate and are logically derived from the specific obstacle to enhance the students' experiential awareness and they might encourage mindfulness behavior in absorbing both propositional and experiential modes of mind. Teasdale's (1999) elaboration of his three modes of mind provides a guide to setting up practical monitoring methodologies in an expanded mindfulness behavioral stance and it was applied in this project.

For the students without strong cognitive biases the behavior monitoring program emerges as a preventive educational task that enhances their emotional processing, similar to Teasdale's (1999) model of cognitive processing. Dialectical critical realist conceptualization elucidates how an individual in her reflections is not stuck with thinking of present behaviors by reflecting on past experiences, and how she might or might not be able to integrate her thoughts of future things into her actionable plans and real contextually arisen actions (see Bhaskar, 1993, pp. 148–150) . Behavior monitoring exercises would provide practical behavioral means to a student's advancement of her open social rhythmics in her learning. This stance into structured, dynamic and contradictory powers in the human mind where both functional and dysfunctional tendencies are at work is

consistent with the notion of the human being as individual dispositions and behavioral tendencies. This stance opens the way for understanding human behavior as a problem of (availability/functionality of) an individual's competencies and practical skills to deal with the ontological dualisms of intrinsic and extrinsic ontological world(s) in her contextual behavior. It is the realm of human reflection, which was conceived in the ways human behavior in one's cognitive functions and forces, such as perception, interpretation and so on, turns to behaviors elaborated in anxiety disorders already demonstrated via Salkovskis' (1996) model (presented in the second research project on page 155). This is a feasible realm in which the rise of safety-seeking behaviors is triggered when an individual tries to avoid or to decrease feelings of despair or moodiness; this behavior is mechanistic and rigid as Salkovskis (1996) discovered and delineated. These individual behaviors can be generally defined as an individual's behavior activities to directly alleviate perceived and experienced highly negative emotions and anxiety feelings. But these limited self-reflections can also divert a person from her on-task problem-solving activities; thus these specific security-seeking activities can prevent or restrict individual cognitive problem solving or practical problem-solving activities. When human problem-solving behavior is limited and impaired due to a subject's dysfunctional mind activities or to her overtly heavy environmental constraints it indicates that in an individual's functional management spontaneous reflexive action does not take place in human behavior control. These individual behavioral contexts due to a lack of smooth mindfulness activity can generate opportunities for an increase of individual dysfunctional and hidden schemata and dysfunctional metacognitive beliefs.

When human problem solving is not strong or does not work on a real-time basis of behavior control in stressful conditions, metacritical thinking, or any other thinking related to internal and external transformative things regarding one's behavioral templates, is weak. It has been conceptualized in a great number of ways as limited self-reflection in psychologies of human control. In metacognitive control activities it is elaborated in a number of theoretical models of self-regulation (Carver & Scheier, 1981; Teasdale & Barnard, 1993, etc.), which in this project give a general approach to delineations of numerous, contradictory behavioral activities as different functions and forces. By minimal theorizing these intrinsically activated forces can be seen as individual behavior modalities, for example if safety-seeking gains a strong foothold in an individual's behavior it might undermine on-task performance and even impair smooth mindfulness activity. In depressive behavioral problems an individual's future-oriented activities might impair maintenance of real hopes (Snyder et al., 2000, p. 129), and the perceived locus of control could prevail as weak (Thompson & Wierson, 2000). The weakened locus of one's perceived control might impair all the other mediated processes in the mind and restrict behavioral activities at work in self-regulated doing and learning. As a result, automatic dominant reactions of lower level control mechanisms could undermine metacognitive activities that manifest as overt rigid problem-solving behavioral patterns. In modern psychological research, a decade ago different and multilayered mind-forces were under rich psychological research, but contemporary psychologies, after a postmodern psychological turn and the re-vitalization of metacognitive psychologies, did not bring theoretic nomothetic conceptualizations of human mind. These conceptualizations remain as gen-

eral theories, from where there is no practical possibility to progress towards an enhancement of an individual's core competencies.

Clinically, ruminative and worrying behavioral pattern-specific featured activities in perceiving, interpreting, evaluative and meta-evaluative behavioral activities have been under rich CBT empirical research as well. At least, there have been elucidated attempts to verify what psychological mechanisms or, even in the traditional mind–body dualist position, what materially determined causalities there are at work in human behaviors. This position excludes the social ontological realm as the original basis for the rise to individual behavioral modalities. This mind–body (materialist) dualist position into individual monads is not the focus here, where higher mental forces such as metacognitions have their nutritional basis in social transformative life. These dysfunctional behavioral activities in attention, thinking, interpretations, evaluations and meta-evaluations are common behavioral problems also in young and adult people (see, for example, Muris et al., 2004), and they are more common in women (ibid., p. 539). Worry and rumination can be frequently related to depression and other anxiety symptoms, and they are often thought of as the initial inducing problems to other anxiety disorders. It is possible here to theorize, relying on rich CBT contemporary research, that rumination, and especially thought-suppressive behavioral patterns, might ascend in pre- and early adulthood, accompanied by rapid and sudden changes in living conditions, when an individual has scarcity of rich and flexible self-regulative or reflective behavioral skills and competencies. Particularly strong and compulsive avoidant behaviors, albeit even more dominant under specific behavioral situations, might tacitly break down more functional and confrontational strategies at work behind individual dynamic problem solving. It might manifest in a student's weak learning when innovative teaching means such as peer tutoring, team work, and other teaching methodologies remain rather unsuccessful in real teaching practice. Latent and clinically non-significant rumination might be common among students when formal teaching practices, such as lecturing and practical training exercises, do not permit a student's 'trial and error' experimentation in her real learning behaviors.

1.5.3 Behavior-monitoring training protocols for a student's challenging of her worrying and rumination

Broadening this practical teaching project into anxieties and uncertainties in human behavior indicates a deeper level in human psychology, which is not the originally theoretical and conceptualist one, common in modern psychologies. Therefore, incorporation of anxieties and uncertainties in human behavior into a student's learning practice, and the broad rich psychological conceptualizations and elucidations of this practical approach in this section, will inform and pave the way to framing the designs in scaffolding the students' learning by behavior monitoring protocols. This educational objective to behavior monitoring devices in teaching psychology is new and the importation of basic tools from clinical CBT practices does not have a specific and distinct pre-theoretic basis. These conceptualizations of behavior control mechanisms, or rather behavior tendencies or dispositions, serve as the informative basis for the constructed behavior monitoring exercises, whereas the monitoring designs are inferred from the practitioner's behavioral assessment and their empirical verification in the previous research project.

Both mindfulness and mindlessness behavioral activities belong to the general, theoretic, CBT psychological stance in the teaching of human psychology and to scaffolding the students' learning in their psychology studies. It diverges from modern theoretic psychologies and postmodern momentary psychologies by perceiving and conceiving metacognitive problem-solving behavior and the partial lack of these competencies as the determinate factor in the students' reflective behavior and learning. Theory-informed empiricist psychological approaches attempt to maintain uncertainty issues by leaving room for human intuition, but they are not able to conceptualize theoretically what happens when the intuition is flawed throughout in its abstract illicit generalizations (inductions). However, this is the condition in anxiety disorders, as CBT theoretic and psychotherapeutic practices demonstrate.

The psychology of mindfulness in a variety of its specific formulations is not a novel concept in psychology, although it became empowered in the wake of cognitive behavioral psychotherapies and by their diverse and richly elaborated practices. Elaborations on anxiety-related behaviors as divergent behavioral patterns from on-task performance or cognitive problem-solving behaviors especially broaden the modern theoretic conceptualization of human behavior and control psychologies. The CBT interventions, combined with collaborative structured and flexible therapeutic interactive practices in the applications to teaching practices represent an enormous evolutionary change in the ordinary psychologies of teaching and learning, and from these approaches they open practical means to support a student's going beyond dualist viewpoints in the enablement of her reflective learning. In this research, this reflective turn might become possible to accomplish via CBT theoretic elaborations and practical means by staying within the critical realist idea of human discursive intellect in the individual realm of uncertainty and anxiety as it arises in the subject–object ontological dualism of an individual's facing of world things. In order to keep these deep issues of human behavior as self-evident, the following will delineate as broad psychological terms how dysfunctional as well as functional individual anxiety-management behavioral patterns and activities become accounted for in the scaffolding of the students' learning in their psychology studies.

One favorable impact of the use of cognitive behavioral psychotherapeutic conceptualizations and practical tools is that now there is a more sophisticated approach to introductions of CBT treatment means into a student's scrutinizing of her recent and present learning which ipso facto learning could maintain her dysfunctional behavioral patterns and activities. Here, the focus is not the general utility and use of the CBT practices in teaching, instead it is sufficient to gain a common ground to dysfunctional and maladaptive behaviors, where worrying and rumination might reside and out from which generalized anxiety disorders could evolve envelop. Ruminative behaviors are common in all anxiety problems at least as secondary symptomatic behaviors that might impair individual problem-solving activities. Therefore, the practitioner's intention and work objective in this research is to construct and implement treatment protocols incorporated into daily teaching procedures and into a student's learning processes. From the practitioner, this scaffolding and teaching via scaffolding require much preplanning of the collaborative via software template-performed teaching means and the practitioner's careful scrutiny of its first practical implementation in the teaching practice.

When the students' worrying and rumination seems to be generally latent the students are reluctant to engage in their psychology studies using these novel learning scaffolds They might not see the point of taking a keen look at their recent and present behavioral activities in an honest search of finding regularities or general features in their behavioral patterns to be accounted for in behavioral contexts. In their traditional learning of epistemologies and nomological concepts and general viewpoints to human mind and development the students might not be motivated to perform other more arduous learning tasks to search for their real behavior. Their self-conceptual orientations and other internal schemata and beliefs could inform them that this is unnecessary, impossible and might even cause negative interruptions to their daily learning. These scaffolds might even initiate the students' ruminative thinking once more when they become engaged in their safety-seeking behavioral activities that become covertly and even overtly reinforced and rewarded in strong instructive teaching practices. It was determined in the second research project that the students' behavior is nonassertive under their new challenges in their psychology studies therefore they might tacitly lapse into worrying and brooding behaviors.

It seems that the only way to encourage the students to take their potential rumination and safety-seeking behavior as a main learning objective is to deploy behavior monitoring methods such as recording and activity scheduling techniques. As has been discovered in treating clients with chronic and latent depression, the individual's implicit stress-initiating tendency to seek direct alleviation from one's inherent although mild despairs could be the maintaining tendency of the depression itself (Teasdale et al., 2000; Segal et al., 2002). This behavioral feature becomes validated in all CBT psychotherapeutic practices and it is the key problem that must be carefully accounted for in the therapeutic practice in multiple and most adequate ways. However, this is not a main issue here when it is thought that in the teaching and learning practices behavior monitoring recording technology is the workable strategy to address avoidant behaviors (such as rumination itself). Not least for the reason that it simultaneously supports and reinforces the students' metacognitive learning for those who do not have strong and dominant avoidant behavioral tendencies in their daily and learning management.

In this research project human mindfulness behavior is a general and core psychology in the student's behavior assessment, in the importation of the CBT tools and in behavior monitoring methodologies. Mindfulness does not connote an observed state or a capacity of human mind, but for the practitioner it is a psychological interface to the students' behaviors where the divergent forces are enforced and become actualized. If these forces give impact to an increase of cognitive biases in interpreting, thinking and metacognitive thinking patterns, and if internal forces are conceptualized more specifically in attentive, interpretative, thought and metacognitive biases, it is not possible or necessary to specify them nomothetically in specific and distinct conceptualizations. Nevertheless, they can manifest as, and induce, dysfunctional overt activities as has been elaborated in CBT conceptualizations of specific anxiety disorders (e.g. metaworry, Wells, 1995), however these theoretical elaborations are not the main point in this research project. These behavioral dysfunctional tendencies can frequently arise and be actualized as the students' behavior surface-oriented social behaviors. As was verified in the two previous research

projects, at least half of the students in each large teaching group perform passive learning and engage continuously in procrastination when facing new learning challenges. The students frequently fail in their confrontational problem-solving behaviors and they actively attempt direct alleviation of their anxieties without accepting and committing to their contextual challenges continuously and persistently. The behavioral monitoring recordings require practice; the students have behavioral tools to reappraise their divergent behavioral modalities and to take new active attempts by re-modeling their potentially dysfunctional behaviors.

At least this self-help initiated confrontational strategy is available and manageable by introduction of behavior recording methods. The other scaffolding perspectives and systems that address an individual's behaviors, such as attending to only perceptional stimuli, or recording recent problematic daily moments by theoretically and ideally informed fragments, are not feasible here. Rather they would strengthen the existing surface learning, instructive teaching and learning of theoretic norms as a stable educational practice, even if they could be practically executable at all. It is crucial to note that the students prefer deep learning but in reality they exert surface learning activities. They prefer direct normative knowledge of practical nursing, and their need or competency to acquire deep understanding by their own strategic deep learning activities during academic studies is weak. For example, a program for acquiring assertive social skills or competencies to deal with real life and behave mindfully would be too specific for the students. The execution of this program in the course of lay psychology studies would prevent their learning of psychological concepts and theoretical viewpoints. The same lapse to learn about theories and epistemologies, but not of real ontological things, becomes reinforced in some researched subgroups of the students (as was established in the second research project) although in order to have metacognitive flexibility there is need for the use of rich and deep learning materials along with multiple viewpoints and rich knowledge about human behavior. Learning psychological texts is problematic and it does not occur if the students cannot employ sufficient text comprehension, metacognitive skills and internal experience to see individual anxiety-management behavioral patterns.

The second research project affirmed that the students' lapse to learn about theoretical viewpoints is the main problem that might occlude them from enhancement of their reflective behavioral competencies and skills. In these instances the students, or ordinary clients with rumination and especially latent and mild anxiety-related behavioral deficits, are not frequently motivated or competent to work with their emotional problems by finding practical and workable novel and contextually reflected behavioral solutions. The students' limited, self-focused and despaired reflection on their emotional meanings does not extend or propagate towards thinking of the conjoined and constrained powers of their real and latently determinate social and other living conditions. In contemporary CBT-conceptualizations this dualist self-reflection is the core behavioral feature that gives rise to anxiety-related problems, such as worry and rumination.

Worry and rumination are frequently dominating behavioral features in individuals with generalized anxiety disorders and behavioral problems. These maladaptive behaviors manifest and have their expression in an individual's broken and disjointed daily

behavioral activities, and they also have special characteristic features in an individual's psychological functions, such as limited observation and attention of one's behaviors and its determinants, hasty and premature conclusions regarding one's extreme alternative behavioral plans in real living conditions, dysfunctional beliefs and appraisal reframes to the need to worry, and lapses into safety-seeking behaviors in confronting stress and its symptoms. For example, if thought suppression as a mode of performing safety-seeking behavior is a dominant tendency or strategy, it poses a difficult problem to re-address it by any teaching means. There could be biases in cognitive encoding of information (see for example, MacLeod & Rutherford, 2004). Thought suppression as a continuous, active and unsuccessful activity to confront and define the real determinants of one's behavior can cause flaws in selective encoding, which maintains the despairing self-reflection or depressive rumination, as Wenzlaff and Luxton (2003) empirically researched for two non-clinical adult samples. Thought suppression is a problematic and key behavioral issue in this report, but it is a hard obstacle to address or remodel by any educational or even by any psychotherapeutic means.

However, in creating means for worrying and ruminating clients it is not clear if teamwork or peer tutoring techniques would be effective when learning is not formal learning and requires individual metacognitive behavioral recourses. In these vocational studies on nursing there are no options for recruiting extra educational resources by managerial allocations for the implementation of interactive consultation and teamwork, although the additional teaching resources would greatly support the students' identity development into adulthood and within a middle-range time span these managerial recourses would be an advantage to the educational organization. In addition, these managerial allocations might not be practically workable because these technical educational methods and procedures would not become stabilized and tailored to the students' learning as already has happened all along in the organization. Instead, the outcome of going along with the re-vitalized individual behavioral realm in scaffolding the students' learning via behavior monitoring designs together with intensive coaching of a student's real learning might provide options for intensive use of software technologies as means to real-time feedback of individual real learning behaviors and behavioral chains.

Therefore a general functional behavioral analysis was performed in the form of the practitioner's assessment of the students' divergent learning skills and their deficiencies in reflective behavioral competencies to define the students' target behaviors in their real life conditions. The general CBT notion of an individual's target behaviors is seen as a descriptive concept or, if successfully defined, as a real and key behavioral objective of a client's, or a student's, seeking of alleviation of individual behavioral deficiencies through specific practical teaching and therapeutic endeavors. The students' target behaviors are their behavioral goals that the practitioner aims and targets via his scaffolding CBT means, such as psychoeducation, coaching and supervision. With regard to the identified three separate subgroups of the students the target behaviors require definition at least implicitly in the practitioner's work plans. When the students really act and learn with varying behavioral competencies and skills then, in the mindfulness behavioral reframe, their behaviors, their interpretative and evaluative objectives and three separate contradictory behavioral modality perspectives will be employed as designed in this

research project: (1) cognitive problem-solving behavioral activities; (2) safety-seeking behaviors, appraised as negative or positive; and (3) worrying and ruminative behavioral activities, appraised as positive or negative.

The aim of the importation of behavior modalities into the students' behavior monitoring recording is that the students with latent anxiety-related behavioral deficits (rumination and worry) frequently take use of their subjective and idealistic evaluative criteria as mind sediments of their subjective and frequently dysfunctional core beliefs regarding their real behaviors and its objectives. The latently worrying students exhibit a high tendency to self-focused reflection on their emotions, and they display stress symptoms along with anxiety and depression-related emotional difficulties. All these facts justify the importation of self-recording and monitoring methods into the students' learning activities and activity chains, as is elaborated in the next section.

In particular, the incorporation of specific cognitive behavioral treatment interventions into home records is thought to be adequate for the students with vastly divergent learning and self-monitoring skills and competencies (compared with the other treatment options and their combinations). Theoretically, in cognitive behavioral and self-regulated psychological terms, CBT treatment protocols guide a student to identify, revalidate and, if noticed as adequate, to revise and remodel her recent behavioral activities and activity chains into more functional ones. As was already observed in the two previous research projects the students' anxiety-related behaviors, such as sudden despaired and anxiety feelings, manifest in their dysfunctional or even maladaptive behavioral chains to spontaneously or even compulsively initiated safety-seeking behaviors, such as rumination, over-positive thinking, thought suppression and so on. The psychological notion of individual behavioral chains is related to earlier formulations of self-regulative behavioral activity chains. In that approach the concept of behavioral chain is metaphorical or toy to rich and mutually conjoined behavioral mind-activities at work in behaviors as is the dialectical critical realist position to modalities in the human mind. In psychological science these elaborations have been richly outlined as individual goal attainment and its behavioral management activities in managing with one's many contradictory and mutually conjoined living tasks and objectives as is Bhaskar's philosophical delineation of social rhythmics (see, for example Markus & Wurf, 1987; Karoly, 1993; Carver & Scheier, 1981). In this research project the designed and implemented behavioral recording and training protocols encompassed all of a student's daily behaviors in which their specific learning activities also have their place (daily rhythmics), these treatment and training protocols do not empirically and theoretically investigate self-regulated basic mechanisms as, for example, Teasdale and Barnard (1993) accomplished with regard to depressive thinking.

1.5.4 Behavioral chains as an individual's behavioral validating tasks

The ways an individual (a student) in her behavior management in her mindfulness or mindlessness activities deals with her divergent and specific mental activities becomes more specifically described as the idea of behavioral modalities and internal activity chains. As various constructivist stances (not elaborated here) to human mind and mindfulness purport, these behavioral chains and cycles must not be defined in explicit terms,

thus the delineation of the students' and the practitioner's general mental frames is descriptive and broad, it is not derived theoretically. In fact, human mindfulness connotes to an individual's mental meta-activities that are at work in the identification and reconstruction of one's internal and all other functional and dysfunctional behavioral modes in one's course of daily rhythmics. Thus mindfulness itself is a rich behavioral realm of individual activities: it is not only a quantity or a formal entity, but a set of different and conjoined human activities that manifest and become identified by the individual qualitatively in disjointed and contradictory behavioral tendencies at work in behavior management. Behavioral activities, as observable by an individual herself and being by her tacitly evaluated as behavioral chains and cycles (a type of continuum), are both obstacles and sustaining factors in human problem-solving behaviors and in behavior control. Flavell's (1979) theoretical stance supports the deployed metacognitive behavior monitoring stance and the importation of the CBT behavioral exercises into the students' daily learning.

It is elucidated here that theoretic derivations and conceptualizations do not inform the application of behavior monitoring designs for the students' learning and therefore the only sound basis is the practitioner's critical-realist behavior assessment position into individual behavior modalities as used in CBT-clinical psychotherapeutic practices. From a theoretical psychological perspective, perhaps the most notorious and general conceptualizations are based on human self-regulation and particularly the notion of behavioral chains in individual goal-orientated behaviors (Markus & Wurf, 1987; Karoly, 1993). However, these conceptualizations neither entail nor lay grounds in this research projects' tentative idea of contradictory behavioral tendencies at work behind individual behaviors and their concurrent management. The critical realist philosophical idea of contradictory mental forces is the starting point for the guidance and practical utilization of the behavior monitoring exercises. These behavioral chains are connected with the entire, individual, metacognitive control activities, and the metacognitive behavior activity itself is the realm where mental activities follow and control how an individual attempts to maintain consistency in her behavioral acts and activities in her daily life under the forces of her ontological world things. For example, goal-directed behavior is a contextual behavioral activity realm that stands for individual perceptions, interpretations, evaluations and meta-evaluations of all her behaviors. These internal activities, for example evaluations of a current behavioral situation(s), their constrained forces and real behavior activities, enable and enforce an individual to act and non-action is not possible because not acting is also a human action under constrained world things. The initial, dialectical, critical realist position to reflective mindfulness psychologies does not only inform dualist, psychologically elaborated theoretical conceptualization because mindfulness means to reflect something ontologically existing which is other than one's mental thought contents, and that reflection is not initiated by concepts, but also the real things themselves as they come into an individual's referential detachment knowing.

In CBT elaborations there have been presentations and delineations of numerous broad and specific psychological models, these models are theory driven or derived from clinical practice approaches, for example Teasdale and Barnard's (1993) model of depression (The Interacting Cognitive Subsystems framework, ICS) or Wells and Matthews'

(1994, 1996) S-REF model (Self-Regulatory Executive Function) on worry and rumination. These models although not basically theories of human actions and functions but broad delineations do justify for example the applied specific importation of treatment protocols, such as specific behavior monitoring exercises in four internally and dynamically conjoined modes behind individual behavior management. At least these theoretic models enable, and do not occlude, the practitioner's thought that individual human behavior as multilayered and internally contradictory emerges as individual creative and 'out of the blue' activities, in the form of discursive human intellect activities. This critical realist position informs and justifies the practitioner's deployment of behavior-monitoring training means for educational and psychoeducational purposes.

These four modes of behavior control establish the constructivist stance of contradictory and conjoined dynamic psychological constructs, existing under mindfulness or under metacognitive behavior activities (see Figure 1 on page 245). The individual herself transcendentally views intentional behavior within internal and external objects the same way, such as ontological, material, psychological and social world and their multilayered mechanisms. This broad stance towards mindfulness is not a goal of the research here – it is a philosophical issue. However, the philosophically conceptualized understanding that an individual can act mindfully in her spontaneous right action, which is what this human intentionality is, emerges from dialectical critical realism. However, because the intentionality in addressing the entire daily rhythmics and its constraints might or might not occur, there is the need for metacognitive controlling and monitoring of contradictory behavioral forces, or tendencies to act. This stance enriches and deepens – as the recent, enriched and intensive empirical CBT research on mental activities demonstrates – the initial behavior monitoring stance on an individual's monitoring and appraisal of her behaviors as behavior modalities, or as divergent behavioral forces. Therefore, the mindfulness stance will be substantial and real and it is not an epistemic or theoretical one, along with the issue of monitoring and redirecting behavioral activities as behavioral chains in mindfulness behaviors, thus also mindlessness activities. Enhancing the metacognitive monitoring in individual behavior by increasing its validity (for example, external and internal real determinants of behavior are appraised in accordance with adequate, perceived and received positive feedback on individual efficacy of her behavior management) could also increase the tolerance of uncertainty and uncertainties in individual reflections. According to Ladouceur et al. (2000) the tolerance of uncertainty in behaving, along with individual world-lines in daily management, seems to be weak in worrying persons.

With regard to self-regulated learning activities as text comprehension, when learning as continuous means-ends analysis (Lan, 1998) collapses continuously, learning does not occur in a deep learning sense in attentions, interpretations, evaluations and primarily in meta-evaluations, as the concept of deep learning connotes. This is tantamount to avoidant behavior, or this behavioral management interface gives rise to avoidant behaviors, which Dugas et al. (2005) delineate as intolerance to uncertainty of selective processing. These specific metabeliefs, regarding concurrent behavioral determinants, in their turn also affect the ways a person perceives, interprets and responds to uncertain situations on a cognitive, emotional and behavioral level (ibid., p. 58). Metacognitions are dysfunction-

al either in themselves as rigid metabeliefs and dysfunctional schemata, see for example Wells' (1995, 2000) model of pathologic worry, and/or being revised by other flexible mindfulness metacognitions; this issue is not feasible for psychological elaborations, being mainly a philosophical issue in its deep ontological, epistemic, and in other delineations and elucidations. Nevertheless, behavior monitoring methodology could provide a student with means to evaluate her metacognitions by introducing them to her own scrutiny by the incorporation of a flexible and evaluative metacognitive template via behavioral modalities.

It is necessary to address these philosophical roots in individual metacognitively managed behaviors in order to provide a student with behavioral means to enter her reflections beyond dualist internal and external ontological things, and it thus opens the real option for the emergence of the human intentional mind across the individual and all world lines. If ontology is taken as directly present in individual lay consciousness without metacognitive activity, this indicates tacit recourse to a given modality, or realm of human reflection, be it limited, despaired and despairing self-reflection, or theoretically derived dysfunctional metacognitions, or idealist derivations of mind activities. Nevertheless, the students' learning as self-regulated processes are disrupted due to the students' weak volitional control over their current behaviors and dialectical thoughts, when restricted control over one's actions and uncertainties turns out to be an overtly dominant self-reflection. In this teaching and learning program, there are no possibilities to apply the teacher's instructions to guide the students' progress into their strategic content learning skills (Butler, 1998). If metacognitive managed behavior is not a learning and developmental objective in the improvement of students' self-regulated multilayered mental activities in adult studies, then instructive teaching would be sufficient in education, which is not the case in these academic studies.

This relatively cyclic idea of human reflectivity and openness is a general description of individual metacognitions; it remains only as a theoretical description and a general framework. However, it does not provide options and means to enhance metacognitive competencies: the ways a human being attempts to compensate, rectify, make up, and take 'out of the blue' actions. Such a theoretical approach or elaboration does not have any practical application unless other empirical elaborations exist: the ways human behavior manages its uncertainties (which are the real things in the real world and not only mental representations or conceptions, according to a general empiricist's false tendency to see or to understand these behavioral and emotional problems). The empiricist false line on human behavior leads nowhere, for example in cases of applying psychotherapy to clients with anxiety disorders and anxiety behavioral problems. The theoretic realm in cognitive psychotherapies is innovative; as Clark (1999) elaborates, it is the current main line of understanding anxiety disorders in human behavior. It is advanced from Rachman's (1976) first excellent, but tentative, idea of human behavioral chains (safety seeking) towards general theoretic rich practical models of specific anxiety disorders, which also lay grounds and practical objectives for psychotherapeutic work with clients with anxiety disorders.

Thus, individual behavior can be concurrently both the dysfunctional behavior of avoidant behaviors at many and divergent levels, as well as functional in other activities.

This gives rise to individual metacognitive or metacritical activities as Bhaskar (1993) has elaborated in philosophical terms. The metacognitive beyond cognitions transcending critical activity and processing could also support the individual to abstain from activities which she has identified as dysfunctional behavioral activities (either mental or overt activities), thus providing space for open spontaneous activities in one's behavior and problem solving.

Self-regulated activities in the maintenance of an individual's contextual behaviors signify a confrontation of subjective uncertainties in thoughts as determinants of one's contextual behaviors whether the reflected ontological things are real or not real but empirical or actual experiences of things. In this critical realist position it is easy to see how an individual's tacit fall into reflecting only on despaired moods can have its place in one's safety-seeking behaviors. Salkovskis (1996) has introduced and especially applied this approach to client practices and Clark (1999) has provided a conclusive description of safety-seeking behavioral dynamics. He shows how a client can behave in ways that either increase or prolong her anxiety feelings and can cause cumulated dysfunctional behavioral activities. As has been shown in depressive, ruminative and obsessive behavioral patterns, the ritualistic behavior first requires an abolishment via refraining from the safety-seeking behaviors and concurrently via taking in the new behavioral activities. This behavioral remodeling of one's behaviors can mean concurrent strengthening of one's acceptance of, commitment to, and practical use of, exposure techniques to one's aversive and intrusive despairs and anxiety feelings initiated by one's mental contents or environmental things.

Because self-regulating behavioral chains are at work in many behavioral realms in one's daily rhythmics it is impossible for a practitioner or for the individual herself to select one behavioral chain as the only or the most crucial one that must be monitored, evaluated, reversed or re-modified. As Thwaites and Freeston (2005) elaborate, it is problematic to define safety-seeking conceptualization of behavioral chains in general terms, or to objectively determine how strong an exertion an individual places on her contextually arisen adaptive and maladaptive behaviors. However this theorizing is not the issue here, but these broad conceptualizations of an individual's internal contradictory and multilayered forces could provide a student or a client with means for taking a direct interpretative and evaluative position to her individual perceptive, interpretative and all behaviors by herself through, and by, behavior monitoring means. Behavior monitoring designs that would be applicable to an individual's own self-monitoring and evaluation via behavior modalities are presented next, after that the designed and constructed behavior monitoring records are delineated in the next chapter's sub-section 3.4.

2. CONSTRUCTION OF TAILORED BEHAVIOR MONITORING EXERCISES FOR CHALLENGING ANXIETY-RELATED BEHAVIORS

This section outlines the entire CBT reframe of behavior monitoring including its design and the implementations of practical behavior monitoring, both as additional

constructed scaffolding and as the research setting of investigating the feasibility of the scaffolding. The scaffolding through behavior monitoring means is totally novel both in its behavior modality position and in its incorporation of specific CBT treatment protocols. This section begins with a deliberation of the adequacy of the students' behavior recording means. Because of the students' divergent behavior it is argued in 2.1 that behavior monitoring means must be based on a broad mindfulness stance where it is possible to theoretically elaborate how a student's metacognitive behavior monitoring is a key behavioral realm in her real behavior management. Sub-section 2.2 delineates the introduction of a pie chart methodology of validating and evaluating individual contextual behavioral modalities in behavior monitoring exercises. Sub-section 2.3 outlines how the scaffolds in behavior monitoring, if being workable in lay teaching practice, provide rich data for the practitioner of the students' daily learning behaviors for more tailored classroom coaching and software-managed supervision of a student. In sub-section 2.4 it is elaborated how psychoeducation of a student's learning and learning tasks in behavior recording by software technologies play an essential role in guiding her in re-focused application of recording techniques. Sub-section 2.5 briefly presents the whole package of the intertwined and gradually deepening recording and behavior training techniques, as informed by common CBT practice and its research. Finally, sub-section 2.6 delineates how behavior monitoring protocols are incorporated in the whole teaching structures and procedures, and in the scaffolding of the practitioner-teacher's teaching and the students' learning of psychology, as depicted in Figure 2 on page 267. The student's learning template as a scaffold emerges as a dynamic, diverse and constrained learning environment.

2.1 Mindfulness modality reframe in constructing behavior monitoring exercises

The new tentative, broad reframe for the construction and execution of the behavior monitoring exercises for the students' recording of their behavioral learning processes is elaborated next.

Human individuals in their metacognitive behavior in the multilayered and constrained world under its continuous change are partially aware of their behaviors when they also strive to adapt their behaviors to their internal or external criteria. These mental processes at work behind metacognitive behavior monitoring emerge as forces and powers, or in psychological terms as volitions, intentions and activity patterns. Regarding the powers of these behavioral tendencies at work they can sometimes emerge for the individual as contradictory behavioral modalities or, if not, at least as forces that are delineable for her in that way when living under one's daily rhythmics. By the introduction of appropriate behavior monitoring protocols one's most dominant forces at work in one's contextual behaviors can be identified and apt to be revised by one's appropriate new daily behavioral management activities. This perspective is the general reframe to introduce the students to specific recording and training protocols to monitor, to evaluate and, if seen as adequate, to revise their recent regular behavioral patterns.

The mindfulness reframe informs the construction of the new self-recoding methods for the students' re-evaluations and invigoration of their spontaneous self-monitoring of

current contextually arisen behaviors. A student can spontaneously become aware of her cognitive processes and her overt behavioral chains. A student's primary focus and following of her anxiety-related peaks and feelings might inform and guide her to identify the initiation of her safety-seeking behaviors that impair her concurrent on-task performance and mindfulness reflections. CBT research has delineated that activity chains emerge as functional and contextual problem-solving acts and activities, as chains of individual activity patterns in the management of uncertainties and despaired thoughts and emotions. Research has also affirmed that activity patterns can be special behavioral endeavors to alleviate one's despaired feelings that might initiate new safety-seeking behaviors. Safety-seeking behavior is a behavior with numerous conjoined psychological operations: for a discussion about them as specific behavioral forms with specific activities see, for example Thwaites and Freeston (2005). In this research, safety-seeking dysfunctional behavioral patterns, as individual behavioral dispositions, provide criteria to a student's evaluation of how she appraises and behaves under her anxiety peaks and aroused despairs. In CBT therapies, a general and widely accepted approach to treating clients with anxiety disorders is to encourage and supervise them to increase their awareness of their dysfunctional safety-seeking behaviors by consequently refraining from this behavior and by taking instead functional behavioral activities.

At first, only two-dimensional behavior monitoring protocols that identify and evaluate two contradictory behavioral forces through on-task performance and safety-seeking behaviors via recording means and executed via psychoeducation might be sufficient to re-activate a student's on-task performance and daily cognitive problem solving when she only has mild anxiety behavioral problems and her on-task performance activities are sufficient to provide her positive reinforcement on her self-efficacy. This position has also been the guiding line in some client practices and in the use of software technologies (see Whitfield & Williams, 2004; Whitfield et al., 2006) (for educational applications in adolescents and adults in the software technology reframe, see Bernstein, 2002; Bernstein & Wert, 2004; Azevedo, 2005; Quintana et al., 2005). This is the approach taken in software-managed psychoeducation that offers options to the practitioner to integrate specific CBT monitoring methods and learning protocols into the students' learning. As delineated above, the practitioner's aim is that the students might improve their broader reflection in demanding problem-solving situations by concurrently decreasing their limited and despairing self-reflection as their safety-seeking behaviors. The students' training by behavior monitoring means would sustain and increase their acceptance-commitment stance in their daily behavior management, if recording techniques are workable and repeatedly performed in a self-validating, open and re-validating honest stance to one's responsibility for one's behaviors. If a student's broad monitoring becomes intensified by her contextually arisen fresh evaluations it indicates her mindfulness monitoring.

However, if the students' despaired and despair-initiating reflection is strong, then restricted monitoring might sustain their deficient behavior patterns when they only validate the students' limited and weak on-task performance behaviors as functional without engaging in more truthful re-validation of their recent behaviors. The students might not be encouraged to broaden their monitoring into mindfulness perspectives in

spite of psychoeducational stepwise guides to perform the recordings. However, the introduced broad reframe is justified as a student's guidance because the opposite strategy of concentrating on situational emotional load and its specific problematic perceived behaviors could be extremely limited and initiate in her only new safety-seeking behavioral activities. The broad reframe in behavior monitoring supports a student's abstinence from monitoring of her emotional and symptomatic behaviors that have been disconnected from her real contexts, as conceptualized by Teasdale and Barnard (1993); limited self-reflection of emotions could decrease a student's dysfunctional implicational processing. If the students are instructed to focus only on their potentially symptomatic behavior, then it cannot be expected theoretically or practically that their dysfunctional behaviors and stress would decrease with the lack of positive reinforcement of their concurrent on-task performance activity in their daily life and learning. Rather, in some student subgroups with weaker behavior competencies, this limited monitoring would exacerbate their worrying and divert them from empirical and collaborative validation towards theory-informed management of the dysfunctional behavior, and in the short term it would decrease their learning and other daily, management intensive, problem-solving activities. This kind of research is not the critical realist-informed stance towards collaborative work with clients and it does not preserve the idea of 'out of the blue' action as the real intentional activity. This latter activity requires a student to continuously monitor, restructure and modify her behavior activities. If this gradually strengthens a student's studying process, then it might divert her from rumination and worrying while simultaneously her strengthened mindfulness monitoring in acceptance and commitment towards her daily behavioral activities has more space in her daily behaviors. The applied strategic starting point towards a broad mindfulness stance for introducing monitoring diaries to the students' learning is crucial here in order not to reinforce their limited despairing reflection, the dysfunctionality of which for example Ciesla and Roberts (2002) have stated.

The teaching program in teaching of psychology on metacognitive behavior monitoring (not only despaired but also on-task performance, see Appendices IIa and IIb) of a student's traversing from her present to her recent learning behaviors and anxiety management is an activity scheduling and time management approach (for their various formulas see for example Barlow et al., 1992, p. 555; Barlow, 1993, pp. 165–166 and pp. 252–253). First, it does not directly aim at relaxation training because the students are divergent in their problem-solving competencies, and the introduction of general relaxation formulas might contradict the revalidating and active problem-solving approach in these exercises. The constructed monitoring exercises are primarily targeted at confronting individual worrying (directed primarily toward an anticipated threat or future danger, Borkovec et al., 1983; Beck, 1987; Papageorgiou & Wells, 2003, pp. 6–7) and rumination (themes of past personal loss or failure, Beck, 1967, 1976; Papageorgiou & Wells, 2003, pp. 6–7). These behavioral monitoring exercises are presented as specific CBT treatment protocols in a student's scrutinizing, and are initially derived from CBT procedures (see Barlow, 1993, pp. 252–253; Fennell, 1999, pp. 188–192). However, from the monitoring of one's daily symptomatic behaviors they are broadened into individual monitoring of one's internal, various behavioral processes through introduced tentative modality

schemes, aimed to alleviate intensive 'despaired self-reflection', which in anxiety disorders and behavioral problems can be an individual's problem and the target in treatments. That is because problematic behaviors can increase during intensified and restricted monitoring episodes or because safety-seeking behavior in the maintenance of anxiety-related behaviors and disconnected from one's on-task performance alone is not an appropriate treatment objective. One special goal for instructing the students in the behavior monitoring exercises is to challenge and confront suppression because it seems to promote other safety-seeking behavioral activities in the students; for instance Borkovec et al. (1983, 2004) have elaborated that thought suppression is a main behavioral impairment in the maintenance of anxiety and its specific fears.

Worrying and various other kinds of avoidant behaviors might not be dominant when a student's behavior is passive in all behavioral realms, a procrastinating student herself might not appraise her behavior as negative. It is hoped that these students would also be motivated to persistent behavior monitoring in order to utilize the practitioner's software supervision. By contrast, the practitioner's validating feedback to the students who demonstrate strong reflective monitoring competencies in their behavior monitoring exercises would be motivated and it would provide them with incentives to progress to the more intensive learning activities in their daily behaviors. Regarding the students' three subgroups, the importation of the broad behavioral monitoring stance in the mindfulness–mindlessness recorded training template is justified and might be workable for all the students on condition that the practitioner's written psychoeducation via software, as well through the classroom, is targeted at a student's re-evaluation of her recent real behaviors and of her behavioral objectives and learning outcomes. This is consistent with Borkovec et al.'s (2004) conception of avoidant behaviors and its informed practical approach in which an individual's disjointed and even contradictory individual behavioral tendencies are re-challenged and can be viewed in a new light by the individual by her relating these contextual behaviors to the feasibility of on-task performance and problem-solving behavior via pie-chart methods.

The deployed and practical approach to scaffolding a student's learning via behavior monitoring protocols and CBT treatment means has become broadened from Wells and Papageoriou's (2004, pp. 264–267) attention training treatments to all her daily behavioral activities. The applied behavior monitoring recording technique as a stepwise training protocol is suitable as an additional device for one's behavior monitoring and one's identification of safety-seeking behavior activities in relation to the on-task performance activities (see Appendixes IIa and IIb). It is consistent with mindfulness psychology and it informs individuals in behaving open-mindedly, seeking acceptance and taking responsibility for one's current behaviors.

Wells (1994, 1995, 1997, 2000; Wells & Matthews, 1996) has paid specific attention to metacognitively induced worrying during his research for intensive CBT treatment means for many anxiety problems, such as generalized anxiety disorders and pathologic worry. It is not specifically theorized in this project whether second stage worrying or worrying of one's worrying, coheres with schema theoretic perspectives (Young et al., 2003) or not. However, Lyubomirsky et al. (2003) have affirmed that these metacognitively managed behavioral patterns in restricted and biased interpretations and other mala-

daptive metacognitive activities prevent or impair a student's reflective problem solving and academic studying. From this perspective a student's concentration could be focused on managing her despaired reflections that would weaken and restrict her attention and all cognitive and metacognitive activities. Negative interpretations, due to conditions and to dysfunctional schematic behavioral activities, weaken concentration (ibid., pp. 310–311), even when rumination is mild or dysphoria is moderate (ibid., p. 326). In dialectical critical realist conceptions there might be a total gap in an individual's reflections the outcome of which is that the individual does not reflect on real environmental things at all in his despaired emotional processing. From that critical realist approach Lyubomirsky and Nolen-Hoeksema's (1995) dualist position to anxiety behavioral problems and their assertion that an individual's rumination is connected with poor interpersonal problem solving seems to miss the point: how, by a practitioner's practical psychoeducative programs, to bring back a student's own scrutiny of her real ontologically existing behavioral determinants outside of, and related to, her real mind constructs and emotionally driven self-reflections.

The above theorized dualist research stance concerning the nature and (dys)functionality in rumination is consistent with Joormann et al.'s (2006) elaborations. They apparently see how this instructive stance to treat rumination is practically problematic because there are no means to predetermine theoretically, or guide a client to differentiate, and to take adequate behavioral activities to her aroused worries and arousals regarding these activities' functionality and dysfunctionality. It justifies the behavior monitoring line deployed here via recordings and their psychoeducatively managed stepwise behavioral exercises: the students need to become enabled to validate the contextual nature of their ruminative and reflective pondering. However, as Joormann et al. (2006) empirically affirmed, the students with dysphoric mood and rumination do not demonstrate awareness in their self-reported ratings of their negative rumination that potentially impairs their concentration in learning tasks. In the practical approach to behavior monitoring here it indicates that the students with despaired rumination might not access revalidation of their dysphoria and reflective pondering by mere recording of their symptomatic ruminating behaviors, but they are in need to record all of their daily behaviors as being initiated and generated by their real constrained social life.

Contemporary psychotherapy research in treating mild rumination is scarce, but the research apparently suggests that the introduced monitoring technique might not be effective in supporting the students to address and resolve their rumination and worry embedded in reflective problem solving. By contrast, a critical realist non-dual position to one's internal multilayered forces behind human behavior informs that metacognitions can be released from flawed and dysfunctional activities by addressing one's internal forces by modality-informed behavior monitoring and scrutinizing means in one's real social life. Arguably the only practical method in the educational setting to teach (introduce, suggest and guide) the students to become aware of their internal forces and powers, accept them and to commit to their modification is metacognitive behavior monitoring via CBT treatment means. Theoretically the aim is to introduce the students to their cognitions and support them to shed their analytical or intellectual over-processing, and to strengthen experiential processing of one's present experiences, as Watkins and Teas-

dale (2004) theoretically delineate as feasible. Therefore this interventional approach of introducing monitoring diaries into a student's home studies seems to instruct her to challenge her strategies for perceiving, interpreting, evaluating and meta-evaluating her behaviors. This interventional line of behavior monitoring adheres to Riskind's (2005) assertion of the requirement to clinically clear all underlying cognitive factors that maintain GAD disorder. However, he does not specify whether this is a workable approach at all levels of worrying and rumination. He does not see that a worrying individual is committed to mind–body dualist thinking and confined to her internal forces and therefore she would not have any resources to retain her mental powers intact. In Riskind's therapeutic reframe from the students' latent and not pathologic worrying there is no practical step for alleviating their worry although common sense sees it occurring all the time in real life.

2.2 Behavior assessment-informed construction of behavior recording methodologies

The critical realist-informed psychotherapeutic stance with specifically invented and performed CBT recording methodologies is consistent with mindfulness psychologies. Theoretically it diverges in the beginning from theory-informed monitoring, which is also Zimmerman's (2000, pp. 14–16) approach. This latter stance excludes the practitioner's understanding of the ways that mindfulness and spontaneous human problem-solving behavior emerges in the core of human metacognitive problem solving in real pre-existing and constrained life. This research project aims to avoid such flaws. It seeks to retain metacritical and metacognitive problem solving in the students' daily life and metacognitive learning. The practitioner's purpose is to concentrate not only on classroom teaching and learning but also on students' daily behaviors where their special learning activities have their place. There are theoretical metacognitive approaches that come close to the daily learning approach, such as in Sternberg (1990) and Carver and Scheier (2000). The latter researchers' theoretical position to individual multilayered human agency is diffuse, because it remains unclear from where specific feedback loops are generated and originated. They thus seem to be stuck to modern monolithic notions of human agency and they do not have a notion to a discursive intellect as it emerges in an open polyvalent transformative world which latter position in explicit terms is not excluded in Sternberg's (2000) elucidations to human mind and to its metacognitive recourses.

In any case, these theoretic conceptualizations do not inform or pave the way towards the practitioner's deployment and implementation of specific behavior-monitoring training protocols as the practitioner's aim is here. Obviously in contemporary psychological research Zimmerman's (2000) abstract elaborations about the necessity to retain an individual's spontaneous metacognitive thinking activity in the real constrained social world in the enhancement of individual self-regulated daily learning are not taken literally. Kuhl's (1984, 1985) position on psychological conceptualizations of human self-regulation and behavior regulation are descriptive which albeit being similar to general CBT conceptualizations of human daily behaviors are, at the end of these elaborations, strongly stuck

with dualist mind–body psychologies and the polyvalent world as the originating basis to human metacognitive behaviors becomes lost.

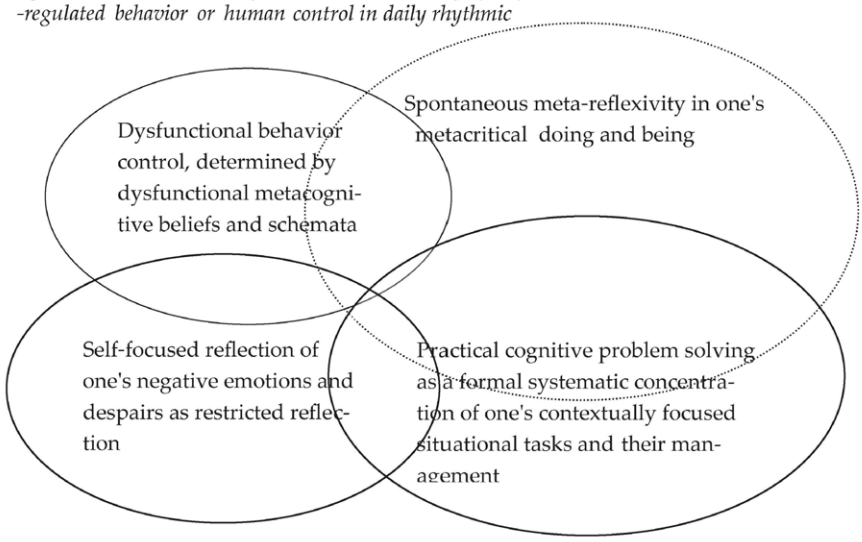
Here, in the first research project, the applied approach to deployment of behavior monitoring records and activity scheduling through one's becoming aware of one's individual behavioral modalities at work behind human daily behavior management becomes hugely enriched and refined via CBT-theoretic conceptualizations of individual behavioral anxiety management. In the first research project the proposed behavior training protocols were diffuse and did not take into account a student's differentiation of her contradictory behavioral tendencies in her anxiety and uncertainty management. In the second project, all specific behavior monitoring training protocols were only generally described in the practitioner's psychoeducative learning materials. In this third research project behavior training protocols were enhanced through the introduced behavior modality approach, the protocols offered options to a student's differentiation of specific anxiety and worries potentially embedded in her contextual arisen on-task performance behaviors. In this research project the behavior-monitoring recording and training protocols were introduced to the students for their ongoing and voluntary practicing. It was assumed that the ongoing practice combined with the teacher's internet supervision might encourage the students to observe changes in their recording. In that way the students would intuit the objective to improve their real contextual behavior management. Recordings can be ambiguous or fragmented lines and curves or pinpointed special marks, nevertheless the training protocols in a student's daily use would encourage her to take an individually chosen stance and responsibility for her real behaviors. If a student takes an open and scrutinizing stance to her real behavior validation she could benefit from these recordings by having more specific and stepwise training means from the proposed CBT treatment protocols. In a student's concurrent learning the introduced recording and training protocols could encourage her to improve her behavior management in her identified problematic and difficult living and learning conditions by her continuous daily practice. By weekly practice a student might be able to implement tailored CBT treatment tools in her later vocational studies as well to introduce and invent these treatment means in her professional work in nursing.

The practitioner's idea to a student's daily behavior management is practical in behavior monitoring means by recording of her daily behaviors, but it has its philosophical basis in the dialectical, critical realist philosophical notion of referential detachment. An actor in her rich, negating mind activities by getting her real emergence as a human being distances herself from real ontological things, and one's 'out of the blue' being can give rise to one's metacognitive reflections and metacritical thoughts. Behavior monitoring means could invigorate and accelerate these reflective activities in one's real knowing and all activities without initial theoretic concepts. The practitioner's psychoeducational supervision of the students' training could support the students to take an active stance to identifying and confronting their safety-seeking and other behaviors. Moreover a student's increased and broadened metacognitive thinking could improve her perception, interpretation and evaluation of her behavioral activities, for example a student might identify partial increased accuracy of her learning and problem-solving behaviors in spite of her concurrently aroused anxiety and uncertainty feelings and thoughts.

Figure 1 presents the designed general and tentatively introduced, behavior-monitoring recording approach with its four specific modalities where the modalities have empirical and practical evidence in contemporary CBT client practices. The modalities are not individual monolithic monads that someone would presuppose wrongly to reside in human mind; instead they are an individual's appraising and evaluative perspectives to her current behaviors. These specific viewpoints provide metacognitive and metacritical evaluative tools to a student's identification and evaluation of her recent behavioral actions and inactions. Modality perspective and modality monitoring perspective comprise the following four divergent modalities, which get their initiation in relation to the other modalities in one's contextual being and its concurrent evaluation by introduced pie-chart techniques: (1) Despairing modality, self-focused reflection of one's despaired moods and despairing thoughts and emotions. This behavior pattern and its inherent monitoring have become established in rich, psychological theoretic research especially in CBT research where limited self-reflection is the main therapeutic objective, and in critical realist philosophy it has been delineated as a problem in human well-being, for example by Adorno (1966). In that behavior and its reflecting, an individual restricts and is being confined to reflecting on her negative and despair-initiating emotions with concurrent minimal and flawed reality testing, as in the case of depression, rumination and worry, specific fears, borderline personality problems, PTSD and so on. (2) Practical problem solving or on-task performance or cognitive problem solving in the realm of working with one's real behavioral options and managing one's real behavioral restrictions in one's contextual real life is seen and taken either more as monolithic and dual or as rhythmic living environment. (3) Dysfunctional metacognitive schemata and beliefs and behavioral acts to putting one's beliefs into one's behavioral acts; as dysfunctional and maladaptive metacognitive and relatively stable structures and dominant tacit re-orientations to one's behavioral challenges and the ways of evaluating and managing the tacitly taken challenges (it is generally inferred in a number of anxiety disorders as dysfunctional beliefs and in schema therapies, e.g. Young et al., 2003; and metacognitive therapies e.g. Wells, 1995, 2000). (4) Mindfulness modality, spontaneous metareflexivity, as one's spontaneous actions in one's metacritically conceived evaluations in one's contextual working on, and reasoning of, daily rhythmics, somewhat delineated in the psychology of wisdoms (e.g. Sternberg, 1990; Baer, 2003).

Figure 1 provides a broad description of all mindfulness and mindlessness activities as behavioral monitoring modalities with their functions in one's contextual behavior management. These modalities are individual categories for one's contextual behavior monitoring in this practitioner's position to data acquirement and assessment of a student's behavioral competencies. Each of these modalities also entail partial empirical and theoretical evidence as important viewpoints to individual behaviors, but here in the practitioner's reflections they become integrated into their vital and contradictory mediations. As an expanded assessment approach to a student's daily learning behaviors the modalities become as her vital and contradictory mediations of her social and all life. Thus the introduced behavior modalities do not form a specific psychological theory, but they are logically deducted and manifest from the practitioner's completed functional behavior analysis and all his practical ventures in teaching projects and specifically of the

Figure 1. The directionality and relative intensity of self -regulated behavior or human control in daily rhythmic



second research project's empirical outcomes of the students' psychological explanative classifications to three separate subgroups regarding their behavioral competencies. From a student's perspective, and in her daily behavioral realm, the introduced broad recording stance is metatheoretic and addresses her metacognitive capabilities directly as contextual or 'out of the blue' actions. Thus it sustains the dialectical critical realist perspective to human structured agency and it is consistent with Hayes et al.'s (2004) and Baer's (2003) mindfulness approach.

A student's behavior monitoring is a contextual issue and therefore the introduced behavior modalities must be revised to provide her with practice tools, and therefore practical protocols are designed along CBT practical lines and the whole tentative design in Figure 1 does not belong directly to a student's understanding in her psychology studies. The introduced behavior monitoring protocols via the practitioner's psychoeducation, coaching and supervision of the students are practical tools primarily for a student to shed off and abstain from her tacit lapses to monitoring and recording only her symptoms and specific emotional problems, conceived as forms without content and relations. In dialectical critical terms, human mindfulness means reflecting or mindful behavior in one's open real life (Bhaskar, 1993) and it is open to one's recording. When behavioral competencies are conceived as behavioral tendencies, dispositions and styles, but not as abilities (Sternberg and Grigorenko, 1997; Sternberg, 2000), they are not measured by empirical and theoretically derived categories, but directly in the subject's own contextual evaluations which is the initial stance also in the CBT questionnaires deployed in this research.

Kabat-Zinn's (1982) idea of increasing one's spontaneous awareness, when putting it in Bhaskar's (2000) terms, is a spontaneous act of 'letting go' activity, but the former practitioner's idea does not elaborate when to act and when to 'let go' in one's intentional

activities and behaviors. Also Langer (1989) in her mindless and mindfulness psychology takes this initial stance on human behavior – mindless behavior is not openness towards real things in one's behavior, and it is weak in attention, but again its idea is diffuse when to act and when to let it go. Shapiro and Schwartz (2000) in their systemic stance on self-regulation are not able to resolve philosophically or in psychological terms how both of these mindful and mindless activities take place (as it was demonstrated here, it requires a sound scientist-practitioner's stance and practical position to broad behavioral modalities, if possible), because the researchers take the social world as closed, otherwise their systemic stance on self-regulation would not be delineable at all. Therefore they omit a structured mind with various forces under continuous restructuring, as for example Jackson et al. (2000) in diffucing metacognitions to abstract identity formulation commit. When expressing it in critical realist philosophical terms (Bhaskar, 1993), their error lies in taking the social world as a closed and monolithic entity without differentiations of ontological and epistemic things. Therefore all the aforementioned researchers do not see the possibility of a deployed practical, behavior monitoring stance into an individual's behavior. Behavior monitoring in this project, in Bhaskar's terms, is:

> To grasp totality by breaking with our ordinary notion of identity, causality, space and time…It is to see things existentially constituted, and permeated, by their relations with others; and to see our ordinary notion of identity as an abstraction not only from their existentially constitutive processes of formation (geo-histories), but also from their existentially constitutive inter-activity (internal relatedness) (Bhaskar, 1993, p. 125).

Metacognitive behavior monitoring sustains, at least in principle, the possibility in one's reflections and free floating reflectivity in human metacritical thinking and therefore human intentional problem solving which is not possible, if based on Shapiro and Schwartz's (2000) model. In their model there is no metacognitive and metacritical thinking as a mind level and connected to other levels. Here it is maintained by deployed behavior monitoring devices which, it is argued here, is the core of spontaneous meta-activity or mindfulness enhancement; Bhaskar (2000) elaborates mindfulness human behavior in his derivation of the philosophical notion of dispositional realism, of one's becoming a true self ("the development from egocentricity to Self-consciousness", ibid., p. 27) without its splits and dualisms.

2.3 Importation of CBT treatment tools in fighting back despairing self-reflection

The next section elucidates both theoretically and practically how the importation of CBT treatment methods into behavior monitoring exercises, primarily used in clinical psychotherapeutic settings, would be grounded and workable for guiding the students to identify, validate and revise their potentially worrying behaviors.

2.3.1 Delineation of behavior monitoring records in addressing a student's avoidant behaviors

The students' proneness to worry and rumination and other avoidant safety-seeking behaviors, as one modality aspect in the practitioner's definition of the students' target behaviors, is the practical objective that needs to be challenged via their behavior monitoring recording. Specific designed and implemented CBT treatment tools in this teaching practice become loosely delineated, such as coaching, real-time feedback to a student's learning and training exercises, software teaching and learning template, psychoeducation, and supervision. However, the following short description of the practitioner's importation of the CBT therapeutic stance to his teaching might help the reader to understand the imperative of the students' validation and search of their real behaviors, as it was initially designed to be under the existing behavioral and social educational conditions.

The behavior monitoring protocols on recording of one's contextual behavioral modalities by using a pie-chart method entails many advantages in the practitioner's intentions to invent accurate and functional monitoring methods for the students' daily living and learning. The whole stepwise treatment package in contemporary, CBT treatment means is presented in sub-section 2.5.2. (1) These methods are important for the students' shedding off of their potential anxiety-related problematic behaviors such as their excessive attention on their tacitly interpreted fears and dysfunctional thoughts. A student's abstinence from her safety-seeking behaviors might be manageable for her if her on-task performance activities, such as envisioning of the divergent activity plans to future activity steps in the maintenance of her positive self-efficacy, are intensive enough. She might deal functionally with her automatic negative thoughts as contextually arisen or her real behavioral determinants being wrongly interpreted as dangerous and threatening. (2) The introduction of a specific monitoring and appraising criteria for differentiating positive and negative safety-seeking and worries in one's contextual behavior recording could revalidate the student's initial and latently rather strong behavioral orientation towards behavioral acceptance and commitment of the current and next challenges. (3) Seeing the important role of one's metacognitive and metacritical activities via specific theoretic routes it is conceivable that a student's performed new revalidations of her real behavioral patterns would expand her perspectives to her daily behaviors and by that means increase her mindfulness and strengthen her metacognitive problem-solving behaviors. Concurrently, the revalidated recording in literary activities of one's real daily activities could decrease her limited self-reflection and flawed overgeneralizations of the dysfunctionality of negative feelings and despairs. Despairs that initiate mind contents might then become assessed as one's contextual on-task performance, functional, as acceptance and commitment therapies have delineated. (4) While ruminating and tacitly and compulsively initiated maladaptive behavioral chains of relying on one's safety-seeking and compulsive activities can be identified, the student might be motivated to abstain from her individual safety-seeking behavioral habits, which has been demonstrated as necessary by CBT conceptualizations and practical research on treating patients with anxiety disorders. Although the students' psychoeducation and coaching is targeted

at strengthening their on-task performance orientation along the lines of CBT exposure-related behavioral training methods, it might also initiate the students' acceptance commitment and exposure-related behaviors in their facing of real challenges in their daily problem solving. (5) The student's problem-solving behaviors might become validly attributed by her, which supports her understanding of her behavioral capacities and tacit shortcomings in individual problem solving and that is tantamount to an increase in her mindfulness behaviors and of her improved behavior monitoring.

As seen, the entire package by behavior modalities-informed behavior monitoring training protocols has been tailored to address all the students' 'needs' to enhance their reflective behavioral competencies with their disparate and both functional as well as dysfunctional behavioral competencies. The behavior training protocols could enhance a competent student's efficient problem solving because she is able to verify her existing good self-regulation skills in core competencies more accurately. From the gradually deepening exercises a student obtains broad metacognitive criteria for perceiving and attributing the strength of her worrying and rumination in relation to her on-task performance and commitment-directed behavioral activities, as well as for her choosing of the most adequate recording means from the provided training package for re-modifying her behavioral activities.

2.3.2 The practitioner's refined behavior assessment of the students' despaired reflection

The constructed behavior monitoring methodology, as a procedural CBT treatment package, is general and comprehensive in its eight progressive phases for targeting a student's deeper contextually arisen many behavioral cycles. It does not guide the students to go along with one treatment exercise and CBT treatment protocol, but informs them to start by monitoring their daily behaviors and then to use specific CBT treatment protocols which would support their understanding of their daily behavioral problems and stressful moments, and then to deploy specific techniques for realizing the real challenges from the falsely interpreted and evaluated ones. Initially, the treatment protocols are widely used in CBT practices in treating clients with anxiety behavioral problems who have a behavioral tendency to irreal and inductive generalizations and who thus have difficulties to reflect on their contextual behaviors. Therefore a large subgroup of the students with moderate general and social skills and with a tendency towards general instructive learning might not benefit from any specific scaffolding of these kinds. From the students' perspective they are keen to seek accurate instruction on the ways to learn and therefore this kind of scaffolding to their learning could become appraised as new instructions, even more demanding than the ordinary and most common ones. However, an outcome of the scaffolding of their learning could be that these students become generally and educationally aware of their divergent behavioral competencies in daily management and learning.

The students' different interests in taking these recording means subjectively also cause conflicts in and outside the classroom, and they increase insecurities in the students' lay discourses. However, this change in mutual discourses to more diverse ones might also provide them with new initiatives for improving trustworthy communication pat-

terns, and their superficial emotivist driven discourses would become more rare and latent if the educational administration permits this kind of teaching practice at all. Nevertheless, the rise of irrelevant controversies between traditional dualistic psychologies and constructivist-metacognitive psychologies vis-à-vis the optimal teaching practice could become settled while the practitioner's real-time recording of the students' real present learning activities provides him with focused options, both for classroom coaching and for the students' virtualia-software executed supervision of their actual learning activities. At least real options for the practitioner's fostering of each student's individual learning behaviors increases in a similar way to, and along the lines of, the first and the second research projects.

The move from instruction to supervision could be a problem for the students with deficient learning competencies; the only possibility is to support the students to view and accept the natural differentiation of their divergent behavioral aims at work behind their behaviors in their management of their contextual learning behaviors. In ordinary instructive teaching of the student groups, this individual perspective to one's real learning becomes abolished because under abstract generalized communicative discourses all students try to be equal to each other, and thus they can easily loose their authentic identity and real criteria for basing their evaluations of their real and more efficient learning activities. It is worth noting that even the students with adequate competencies in basic reflective problem solving do not encounter rich learning environments for improving their deep learning to which learning they latently might have had inclinations. As was observed in the second research project, only a few students have good behavioral skills and competencies in dealing with their uncertainties and the enhancement of their skills and competencies is the goal of this research project. The previous project verified that the students with competencies in stress management did not improve their real learning behaviors. It indicates that these students' basic competencies in assertive behavior and strong stress management are not sufficient for taking initiative in innovative studying and in co-operative teamwork with classmates for deepening individual knowledge in learning issues.

Practical reasons for a broad scaffolding of a student's learning about human nature

General and broad scaffolding of behavior monitoring records is warranted for a number of reasons because it becomes possible in teaching practice via the importation of behavior modalities in the teacher's assessment of the students' divergent learning habits and behavioral tendencies. First, this scaffolding of psychology studies could cause additional stress to the students because it is new and requires a student's individual behavioral competencies in accepting her own responsibility over her daily learning. This importation is a new one and the practitioner does not have strong expectations of its workability in this teaching practice at all. It was not known beforehand if it would even be partially executable in the educational practices where all the teachers' objectives are to develop and manage daily education via specific teaching methods. Second, the students could perceive the broad scaffolding as an interesting practical approach because with a deepening package of recording techniques it provides them with a practitioner's real-time feedback on their gradual progress or regress in learning activities. Third, the

broad scaffolding is the only means of demonstrating to the students the need to learn psychology continuously in these studies, approximately on a daily basis, and to try to benefit from the practitioner's on-line feedback and supervision to individual progress in these exercises for ones' improving of daily deep learning activities in all studies. Fourth, although the practitioner's instruction and tutoring has been minimized because of the dangers of supporting the students' surface learning, the designed broad package in scaffolding enables him to broaden the teaching template to his supervision of a student to promoting her validation of her real recent behavioral and learning activities and activity patterns. Fifth, the broad behavior recording with divergent modality reframes and the deployment of the CBT techniques in anxiety management in the records enables the practitioner to increase his own understanding (as an accurate expanded behavioral assessment) of the students' diversity in their behavioral competencies and deficiencies, and of the practical workability of the methodology in guiding the students' daily learning and social practices.

CBT-informed theoretical reasons for the broad scaffolding

The broad scaffolding and incorporation of the CBT treatments in the students' recording is warranted in contemporary CBT elaborations and practical psychotherapeutic perspectives, especially in treating mild depression and non-pathologic generalized anxiety disorders in clinical settings. They have established that individual reflection can be flawed or directed to specific realms (as dialectical critical philosophy delineates). Empiricist psychologies, with their exclusion of object–subject dualisms (in an ontological sense), while remaining in their theoretically pre-established stances, omit mindfulness behavior, at least as a real emergence in human problem solving. For example, Demetriou (2000) seems to commit this monism that evidently leads him to dualist positions, as if human beings were constantly able to retain a broad mindfulness reflection. This is not the case in CBT conceptualizations and practices, as has been discovered in treating clients with anxiety disorders. Avoidant behaviors can be dominant; it is a challenging task for a client to abstain from, or shed off, her limited reflection while concurrently retaining it as an essential part in reflection and progressing to broader reflection of all internal and external things of the real world. If mindfulness behavior occurs, it allows reflections to perceive, interpret, evaluate and meta-evaluate all internal and external things simultaneously. Demetriou's delineations of self-regulative processes at the minimal level do not explain, via the theoretical models of self-oriented and environment-oriented systems (for his conceptualizations, see ibid., pp. 211–213), how individual self-awareness of being functional is related to an individual's social problem-solving behaviors under her constantly changing real and social constrained living conditions.

In the elaborations of the CBT treatment of anxiety disorders, Wells (1997) emphasizes that this broad issue is essential for interrupting and dispelling persistent and strong self-focused processing cycles. Although he introduces specific attention-training procedures (Wells, 1990) in particular, his practical designs to a client's training can be extended to the behavioral monitoring recording introduced here: "On-line activity should be managed in a way that does not merely lead to the deactivation of belief but facilitates the modification of existing dysfunctional belief." In practical terms this indicates, "that the

degree of affective arousal, rumination, and belief activation should be regulated" (Wells, 1997, p. 270). This is exactly the purpose of the invocation and incorporation of the constructed behavioral monitoring exercises for a student's real contextual learning. The behavioral cyclic conceptualization of behavior control must be incorporated into monitoring exercises; it can invigorate mindfulness monitoring of openness along multiple paths. Due to limited space, this position will not be theorized only the practical approach will be outlined. Wells' (2000) elaboration of divergent and three levels control (his S-REF model) and behavior operations (as the total range of processing operations, ibid., p. 16) and their monitoring in metacognitions is a broad mindfulness stance. It explains that a self-regulation and control system among three subsystems can contribute to, or diverge from, psychological dysfunctional paths if restricted monitoring is dominant in behavior regulation. The theory's aim is to explain that different modes cannot be adequately executed. The concept 'mode', referred to here, according to Wells "to the perspective the individual has with respect to his/her thoughts and beliefs" (ibid., p. 16) does not inform behavior modalities introduced to the students' behavior monitoring designs. Wells' conception is only a perspective but not necessarily a real behavior modality in the underlying management of an individual's behaviors. Therefore modalities introduced to a student's behavior monitoring in her real life are not merely and necessarily only viewpoints or modes but real things behind, and at work, in individual behaviors. This is consistent with Bhaskar's (1993) philosophical notions of open totality and its philosophical transcendental detachment and modality conceptions (ibid. p. 271); a human individual can also know of real things without perspectives or concepts because perspectives in an individual's 'out of the blue' activities are real ontological things.

The applied behavior monitoring methodology diverges from Wells' S-REF model because the introduced monitoring stance comprises and incorporates contextual on-task performance reflection by encompassing an individual's broad reflection of her daily rhythmics in her mindfulness monitoring. The monitoring can be delineated as a human activity, which preserves one's dialectical and transcendental thoughts of real ontological things in and of the real world. In critical realist philosophical delineations it maintains the existence of the human being the primacy of ontology before epistemologies and that, in principle, the world is open, transfactual and it exists under continuous transformation. The devised behavior monitoring methodology attempts to support directly the students' mindfulness and on-task performance monitoring and evaluation. Thus it diverges from Wells' attention treatment approaches although it shares the basic objectives in individual creative knowing acts. Wells outlines that "the aim in attention-based treatment strategies is to counteract heightened self-focused attention, provide means of increasing the executive control over processing and increase the flow of new information into processing to facilitate belief change" (Wells, 2000, p. 138).

The introduction of four behavior monitoring modes to a student's scrutiny of her real behaviors in the management of her spontaneous metacognitive control could promote her validation of her current to different directions, and of engagement in new behavior initiatives that enable changes in her real behavior. However, this package might be too difficult to implement in behavior monitoring for an extensively worrying student or for students who are, or perceive that they are, under intense environmental stress. Crucial

behavior changes in refraining from the dysfunctional monitoring and its behavior could be too difficult and not executable when along Wells' (2000) delineations on mindfulness a student recourses back to the self-knowledge realms in her behaviors by trying to alleviate her pathologic worry. In the tacitly worrying students this limited dysfunctional and reduced concreteness and worrying stance need not be alleviated at first. Therefore, for the practitioner, it is necessary to introduce to the students' reflection other behavioral modes and modalities that promote their maintenance of a subjective real hope which is noticing one's least successful behavioral activities. Wells' theory does not explain or introduce mindfulness behavioral thoughts as dialectical, contradictory concurrent thinking operations that are orientated to divergent paths and internally mediated activities. There is no need to conceptually elaborate on these meditations in one's dialectical thoughts here, either philosophically (Bhaskar, 1993, 1994) or psychologically (e.g. Buss, 1979; Basseches, 1984; Pascual-Leone, 1987) in order to warrant a practitioner's behavior monitoring stance introduced here along the lines of Flavell's (1979) initial notion of metacognitive monitoring.

In this project the approach to human control is smooth and extremely broad but directly contextual. It suggests that human action and its control of introducing changes in individual behaviors is under one's continuous self-monitoring and referential detachment evaluations for the search and revision of individual stable psychological regularities, and in the maintenance of one's daily behaviors. Changes in these individual competencies have their place in an individual's daily life if at all but can be apt to practical scrutinizing via specific treatment and its training methods. For example Wells and Matthews' (1996) S-REF model delineates and guides the practitioner's endeavors to construct specific practical behavioral interventions to a client's broadening of her reflective activities. Here, the applied modality stance is broader than self-reflection or self-focused attention (SFA) in Ingram (1990). The spontaneous meta-reflectivity in mindfulness problem solving happens only in the real social world outside and beyond perceptions and interpretations, although these mental activities are an essential part of the mindfulness reflectivity in one's mind processes.

This broad individual reflection is the issue in Matthews et al.'s (2000) discussion on self-regulation, but their conceptual elaboration fails for a variety of critical realist philosophical reasons not elucidated here. In CBT practices, the critical realist monitoring stance is the real issue to human being, and it is pivotal to have practical recording methods or other collaborative means to an individual's search for psychological other regularities in the maintenance of her real behaviors. In clinical practice, behavioral tools and treatment interventions for enhancing self-regulated problem solving must be both broad and tailored at the behavioral level of each client. Simultaneously these treatments need to comprise pronounced self-attention, which Sloan (2005) affirms to be in positive correlation to alleviated depressive symptoms. The treatment protocols need to comprise individual confrontations to many behavioral and mental activities and their multilayered and conjoined behavioral chains. Also, Broderick's (2005) specific idea to invigorate an individual's distraction is refined here as mindfulness training exercises through specific metacritical evaluations of one's reasoning.

In this project, the practitioner-teacher's task is to broaden behavior monitoring from the clinical settings to address not only monitoring behavioral deficiencies and symptomatic behaviors but all behaviors which arise in individual reflections in dispositional realism, as Bhaskar (2000) delineates in his four main benchmarks of human creativity, love and freedom (ibid., p. 7). The starting point in this practical teaching is that the students in learning about human nature and problem solving gradually construct and intensify records to monitor their individual daily rhythmics. The practical position was verified as a feasible strategy in the first research project, and in the second research project the research moved onto individual real learning domains via the gradual, deepened, CBT behavior assessment of the students' behaviors. To attain these successful practical accomplishments for supporting individual learning, the practitioner had to invent and introduce new ways and educational tools for tailored self-monitoring methods in individual classroom and all daily learning. In the practical execution of this teaching the practitioner's CBT-informed psychoeducation of the students' learning about their and all human behaviors plays an essential role as becomes elaborated later on. It is important to see that this kind of practitioner's psychoeducation in ordinary instructive and illustrative teaching–learning dualist discourses would not be possible because there is no initial basis for a collaborative trustworthy practice.

2.4 Psychoeducational application of the CBT-informed behavior exercises

2.4.1 Practical position to CBT-driven psychoeducation

As was demonstrated in the first two research projects, the students require validation of their potential avoidant behaviors in order to manage effective reflective problem solving and their on-task performance behaviors. For the practitioner these projects showed that one's contextual learning is the pivotal learning issue in these studies on psychology because the students were unaccustomed to the practitioner's rather strong coaching as his pivotal teaching method. But coaching was not often practically manageable and that meant that other stronger collaborative means were needed that were practically possible to set up and implement as a software teaching and learning template (which had recently been constructed for the management of nursing studies). For the practitioner, the software template opened up means for literary-managed student's psychoeducation via a construction of literary guides for the students as incentives and guides for their performing and completing of home-exercises in the software template by implementing specific CBT methods and stepwise protocols in their behavior monitoring recording.

Due to the lack of space, the performed psychoeducative practices are not delineated here in detail. It was extremely similar to CBT treatments in which a client becomes motivated and applies initial tools that have been learned in the previous classroom session for homework. The CBT-informed treatment methods were presented to a student as the practitioner's objective to improve her management of daily life, and were similar to the specific CBT techniques commonly and widely used in treating clients with mild depression and generalized anxiety disorders. The CBT mode of psychoeducation is one of the key cornerstones in CBT psychotherapy with clinical patients. It addresses a student's

real behaviors through deep, empirical verification, collaborative discourses as well through demonstrating divergent functional and dysfunctional behavior management in a client's central daily activity patterns. This report is primarily focused on delineating the pivotal role of metacognitive behavior monitoring in innovating new individually tailored learning scaffolds and in teaching psychology on reflective and not only formal problem solving to pre-adult and adult students.

The construction of psychoeducative learning materials presented via a software template required a lot of preparatory literary work from the practitioner because in the teaching there is not much room to use many specific and sophisticated collaborative discourses, such as assertive and motivational interviewing techniques, that influence the efficiency of client psychotherapy work. The literary guides encompassed for example, instructions and stepwise behavior protocols to empirically verify the adaptive and maladaptive aspects of a student's contextual daily (learning) behaviors and to improve their stress management and metacognitive self-directed learning. In the psychoeducation there was not much space to underscore to the students how crucial it was to improve and acquire many relatively specific learning skills in academic studies because of the widely spread lack of all basic self-regulated or deep learning skills in the vast majority of the students. Divergent modalities at work behind one's tacit needs and forces were described in general terms via psychoeducation without providing formal accurate recording techniques. It was also highlighted in this psychoeducative material, to doing behavior monitoring recording, that rumination and worry could increase avoidant behaviors and safety-seeking behavior which keeps a student busy and under constant stress symptoms and despairs which might impair her learning activities and daily management. In gradually deepening behavior monitoring records and in their stepwise practice it was stressed that individual behavior patterns might be contrary to the individual's own purposes. A student could, by written practice and assessment of her completion of the written recording, verify the mutually related behavioral tendencies at work in on-task performance and safety-seeking behaviors of her real recorded behaviors and by this means gradually benefit from the exercises in all her daily studies.

Contemporary, CBT therapeutic research and practice has demonstrated that individual ruminating safety-seeking behaviors might be positively perceived and appraised as necessary albeit rumination impairs individual problem solving. Research shows that one's ruminating and worrying behavior is not simple to validate and reappraise, partly because of the reduced concreteness (Stöber, 1998; Stöber & Borkovec, 2002) in one's behavior management. In this project this problematic behavior management was addressed by a strong, contextual, activity scheduling means for various recording options. The students were guided to choose between the recording and training protocols, at first in identifying the special and most diffuse of problematic daily behavioral moments and, if somewhat successfully completed, then to validate and seek revision of these behaviors by performing described specific CBT exercises. The need for daily practice and use of evaluative schedules of the workability and feasibility of the exercises in taking account both positive as well as negative aspects of the practice was highlighted to the students. It was highlighted that in learning on one's own by individual strategy management initiatives the issue is to be aware of, and validate, one's behavioral core competencies and the

specific metacognitively managed skills, as for example one's strengthened concentration on daily tasks or increased motivation to engage in daily behavioral exercising could indicate improvement in one's functional behavioral competencies.

The introduced behavior monitoring methods along with the CBT treatment tools and protocols emerge as contradictory learning objectives to the students' ordinary studies. The training protocols are not workable or feasible if instructive teaching practices are very dominating, but if many students deployed them it indicates that paths could emerge towards their transforming into more collaborative ones. In any case, instructive teaching and its tutoring and illustrative presentation of learning issues in its emotional processing do not support the strengthening of a student's implicational processing in behavior control. As Teasdale and Barnard (1993) explicate, if individual tendency to emotional processing is high, then it could indicate an increase in depressive thinking. Scaffolding of the students' learning is thus highly grounded and it could provide incentives and requirements for their implicational, non-epistemic reasoning; in Bhaskar's (1993) philosophical delineations this implicational reasoning is dialectical thinking, where facts are internally integrated (sometimes being the very facts and not only values) and internalized with concurrent overt on-task performance activities. Theoretical research and derivation of the emotional, implicational, and metacognitive monitoring and evaluation and its broad reflection (or mindfulness spontaneous awareness of all real internal and external things of one's world) is not the issue here. The task is to bring this entire cognitive processing to a student's contextual behavioral scrutiny and empirical validation through her behavior monitoring. Via the employment of the behavior monitoring package and gradually presented and attuned to the students' psychology studies the students are educationally guided to investigate their learning and emerging activities, and by accounting their behavioral chains to validate and to re-modify their overt and covert behaviors. In large teaching groups, the students are guided through coaching and psychoeducation by written introductions and stepwise guides on behavior monitoring that are integrated into the students' learning processes of their psychology studies where human behavior and human nature is the learning objective. Combined with the practitioner's intensive coaching this psychoeducation indicates diversions in teaching discourses from the traditional instructions and tutoring and it thus might strengthen a student's learning of human matters without taking them as theories and norms.

This practical introduction encounters a number of practical problems in particular because the students primarily demonstrate and express a strong behavioral preference to attend to, and to apply, the practitioner's direct and formal instructions. Teaching by lecturing maintains the ordinary lecturing in its illustrative and superficial learning patterns and it leaves scarce room for any psychoeducation. Instructive teaching of specific learning issues is to educate students generally and not psychoeducate them to critical evaluation of the significance of educational objectives to their contextual learning behaviors. Improvement of the practitioner's instruction for the use of specific and theory-informed methodologies and consultations would not have any positive impact on the students' real self-regulated learning. It would only support the students' increased tacit expectation of receiving norms and distinct guides to their learning. Therefore in this project the aim is to gradually abolish it in order to bring back their intrinsic motivation

management and inclination to learn by using the practitioner's psychoeducative guides. Because of the students' tendency to tacit worrying during their learning activities, worry and rumination become the practitioner's main work objectives in psychoeducation, classroom coaching and software-managed supervision.

2.4.2 The virtualia template in psychoeducation and supervision of the students' learning

The aim in teaching psychology is to progress first from instructive teaching to coaching; however, as shown in the second research project, this transition in teaching structures and discourses remained incomplete by an implementation of insufficiently managed scaffolds to teaching but not to a student's daily learning. That is one reason why accurate psychoeducation for strengthening a student's behavior monitoring in recording might provide an adequate template for the practitioner's successful coaching. The other reason is that the students frequently seem to engage in biased cognitive activities in avoidant and worrying behaviors, and the practitioner's coaching could cause dysfunctional emotional reasoning if the students do not have reasonable behavioral grounds for this kind of learning of one's actual learning. Psychoeducation would provide options to the practitioner's collaborative supervision of the students' learning behaviors and not only to supervision of their attainment of theoretic formal skills or of professionally relevant normative knowledge. In addition, psychoeducation provides behavioral options, and encourages the students to reappraise their divergent learning patterns, and to make behavioral changes via the imported CBT treatment tools and psychoeducational guides to perform behavior recordings and other behavior training protocols.

The psychoeducation for encouraging the students to exercise a functional control over their potentially maladaptive behaviors by behavior monitoring in their daily learning requires the importation of additional behavioral criteria and categories for behavior monitoring. It was introduced conceptually from behavior modality perspectives as a shift from self-regulated theories to CBT behavioral constructs (models of rumination, reflecting despaired mood, cognitive problem solving, or on-task-performance reflection). It was demonstrated that safety-seeking behaviors as a specific behavioral issue and realm is common in anxiety behavioral problems and an individual can become aware of her covert behaviors if she notices internal changes in her anxiety feelings and suddenly arisen anxiety peaks. It was highlighted that every human being continuously seeks remodifications while behaving and an individual validates her real behaviors as adequate or inadequate regarding real behavioral options and behavioral requirements, and this validation requires honest and courageous practicing on a literary basis at first and then more spontaneously and on a daily basis. It was reasoned that the transition from lecturing and its teaching to coaching, which was performed in the first two research projects, would lay grounds for effective psychoeducation and supervision of each student's learning. Thus, the practitioner's teaching objective through the parallel implementation of both coaching and psychoeducation was to intensify their mutual positive reinforcing impact on the students' self-regulated learning.

The psychoeducation was performed similar to psychotherapeutic clinical client work in its general practical lines but was more literary managed than in general psychothera-

py practice. First, the problem of worrying and rumination as embedded in, and contaminating, a student's goal-orientated behaviors was defined as crucial and noteworthy in learning and daily activities that required from a student a detailed search of her daily actual behaviors. Then it was delineated in broad and concrete terms in all exercises that dysfunctional behavioral patterns (as weak monitoring and scheduling of daily activities, dysfunctional schemata and metabeliefs, negative and intrusive automatic thoughts, interpretative biases, despaired thinking, weak cognitive restructuring etc.) could impair a student's contextual behavior and concurrently give rise to her tacit safety-seeking behaviors. It was highlighted that deployed literary recording methods are common means and methods in CBT practices, based on scientific research and a theoretical basis, and they can often be feasible training protocols for validating and re-modifying real behaviors. The students were instructed that the home-exercises were thoroughly voluntary but their completion would help a student to gradually differentiate between her various anxieties and worries, and thus in the long term to foster her functional and dynamic problem-solving behaviors and her advanced deep learning. Although the specific exercises were challenging for the students to understand and undertake by daily practicing through the stepwise guides it was stressed that to benefit from these exercises continuous practice, by trial and error practicing and by assessing workability and feasibility of the practicing, was crucial. In the psychoeducative instructions it was affirmed that daily continuous behavior monitoring through recording and behavioral exercises in learning the psychology course could strengthen a student's functional behavioral patterns and 'out-of-the-blue' mindfulness activities, as well as her self-regulated learning in academic vocational studies.

Because most of the essential psychoeducation was performed with the use of written guides with succinct instructions and was aimed at gradually improving home-exercises, promising options to invigorate the students' scarce and impaired home studies started to emerge. The students were encouraged and guided to perform gradually deepening exercises, with a few separate options presented, and the students were encouraged to continuously apply and revise their behavior recording and their exercises. It was also highlighted that the students should seek the practitioner's feedback and advice for learning and exercises. Exercises were presented as training methods, utilized by the student's own initiatives and choosing, they were not compulsory in basic psychology studies. It was noted that the students who actively performed behavior monitoring were more often able to study psychology efficiently. The students were told repeatedly that the only basis for a grade on their learning outcomes in the course were four preset home tasks, without any other evaluative criteria to their grades. The compulsory home tasks were targeted at the measurement of the students' superficial knowledge or evaluation as well as searches for application of the acquired psychological knowledge in five nodal phases of the psychology studies. It was also stressed at the beginning of the course, and in the second research project, that the practitioner's individual feedback to a student was designed to support each student's further learning at her own chosen knowledge levels from the three main grade options referred to above.

The main research objective was to discover a combination of various specific behavioral interventions, which in a student's use and with the practitioner's supervision of

her daily learning patterns and their revision might support her individual development in her spontaneous self-monitoring and generate self-regulated learning behaviors as specific academic self-regulated behavioral activities (text comprehension, literary expression, keeping notes in classroom coaching, etc.) in the introductory psychology course. When the students with diffuse self-conceptions and dominant surface-learning behavioral activities are so divergent in behavioral orientations and competencies, the practitioner's empirical attempts to invigorate their self-regulated learning at home was necessary. Although the students' are not accustomed to focus on their real recent behavioral patterns and the practitioner's coaching remained insufficiently executed in the second research project, this project is primarily an empirical research on how the behavior monitoring means open a way to more intensive supervision of a student's learning. The practitioner can now have more accurate data of the students' real learning activities and of their real safety-seeking and other behavioral patterns, and the practitioner can see what deep learning activities are totally absent in a student's learning, and through his support for a student's empirical verification and motivational interviewing strategies can pinpoint to her novel ways to learn. The practitioner can guide a student to learn via routes and patterns which save time and energy and which are manageable to her learning competencies without the student sticking rigidly to attaining maximal learning outcomes to which she has not demonstrated any intensive learning activities or potentialities at all. Of course the practitioner's supervision of a student's learning behaviors only becomes possible if the students become engaged in the behavior monitoring exercises. It is hoped that intensive supervision, the software template and the practitioner's coaching of the students in their performance of their psychology studies would also transform teaching discourses to a more collaboratively managed supervision pattern. In this report is not delineated specifically how in this educational environment the practitioner's practical knowledge of the students' gradual progressing and surpassing of specific deep psychological issues opens the way to non-dual understanding of individual human behaviors.

2.5 Stepwise procedure to self-recording and behavior scrutiny

Due to the limited space in this work, the CBT methods in treating rumination and depression are not delineated here, and only the behavior monitoring procedure is described in general terms in which the implemented CBT treatment means are also incorporated. This is followed by a detailed elucidation of the progress of mutually interconnected monitoring methods, how the exercises gradually may support a student's accurate evaluation of her behavioural shortcomings and re-modifying of her diffuse or somewhat problematic behaviors. Next the general nature and work objective in each stepwise training protocol is broadly described. The main thing is that if a student gets positive outcomes in its successful practicing for the first exercises, then it may open up for her workable exercises in the next steps when a student intuits how pivotal is her own initiate choice and targeting of the exercises at her own behavioral pitfalls in daily rhythmic and its satisfactory management.

2.5.1 The incorporation of the CBT methods into the students' recording exercises

Next, the entire self-recording stepwise procedure and the package starts from the broader monitoring of daily rhythmic, the basis of which was laid down in the first research project as an adequate strategy to support a student's contextual learning because it maintains a broad mindfulness reframe in metacognitive behavior monitoring. Second, another principle is to construe a behavioral monitoring package which is adequate to the students' divergent competency levels, either tacitly worrying or strong in on-task behavior management. A third guiding principle was to address and confront a student's potential latent worry and rumination, which would require new validations and behavioral changes in her reappraisals and overt behaviors. The entire package of the gradually deepening exercises is presented as a gradual training procedure in Appendix IVa, and the three specific behavior monitoring exercises are presented in Appendixes I, IIa, IIb, and IIc.

The entire self-recording stepwise procedure and the package of exercises and records are described only in general terms and have their roots in CBT treatment methods and practices as delineated in the previous subchapters. The stepwise procedure was especially targeted at validating the students' worrying behaviors and seeking their acceptance and commitment to their daily behavioral obstacles in their daily management. With the four introduced behavioral modes and guides for spontaneous controlling of their divergent inherent forces it provided tools for the students to refrain from real safety-seeking behaviors (whether internal or external activities) and to focus on noticing and improving their disrupted and weak learning activities in real social life.

To meet the needs of the students with strong functional metacognitive learning competencies the behavior monitoring exercises must be broad and flexible, and provide options for their own choosing. Exercises must provide specific strategies for a student's revalidation of her recent actual behaviors and for her behavioral changes in her daily behavioral moments. It is important that the exercises support validations of the students with more advanced skills and competencies in behavior monitoring and its management. This latter point is worth stressing because the general educational instructive and the surface teaching practices seem to extinguish deep learning even in the more competent students at least in the short term. Therefore these moderately aimed formal educational objectives might coerce and become propagated down to moderate educational objectives. However, those students that manifest worrying and safety-seeking behavioral patterns might not take up the free choice to engage in behavioral exercises to initiate their own selection and performance of the exercises and their training. It was hoped that the practitioner's supervision would become efficiently utilized by these students to support their targeting of exercises to their own behavioral needs as informed by current CBT clinical practice.

Therefore, the main objective in constructing the behavioral monitoring package is its broadness, which would support the students' understanding of the requirement to develop collaborative teaching and learning discourses, as well as to exhibit more initiatives to individually managed learning and to receive the practitioner's real-time feedback on their actual learning behaviors. The requirement for the package to support a student's

own identification of her main behavioral deficits, of their new remodeling and of taking more accurate activity steps in her real learning behavior is of secondary importance. But due to the practitioner's presupposed limited supervision of the students' performance of the behavior monitoring exercises the scaffolding template would not enhance deep learning in the students with more crucial deficiencies in self-regulated learning activities. It is worth noting that the practitioner-teacher had no previous knowledge of the workability and feasibility of his introduction of this vast and deepening package of monitoring exercises and of how the students would react to them. In the practitioner's precalculations it was possible that the students would deny them and ignore this type of teaching and the package would break down even in their initial learning to perform their ordinary studies in psychology. Obviously this had to be avoided in psychology studies because the organizational structures to resolve these kinds of clashes pointed to solving them by going back to traditional formal teaching practices. Instead it was self-evident for the practitioner that without basic scaffolding being accomplished in the first and the second research projects this additional scaffolding in monitoring exercises would not be executable in these educative practices at all.

2.5.2 The gradually specifying behavior recording and training package

To address the students' divergent behavioral competencies a tailored behavior monitoring and recording package comprising the gradually deepening metacognitive behavioral monitoring records was introduced. First, its purpose was to support a student's identification of the nature of her daily behavioral activities and then secondly if possible to validate the adequacy more accurately of her recent learning activities and patterns in the psychology course. Lastly, by introducing and integrating specific CBT treatment methods to the behavior monitoring recording protocols the third objective was to support the students' initiative in choosing the most accurate CBT treatment protocol to re-countering and re-modifying some of her shortcomings (such as avoidances) in her recent daily behaviors. These exercises would decrease her thought suppressive and other safety-seeking activities and thus provide more room for reflective deep learning activities in her learning of psychology. For all the students the practitioner's primary educational task was to assist the students' text comprehension in reading, listening and writing psychological and emotionally laden text, and for them to benefit from the practitioner's and classmates' feedback.

The first step in behavior monitoring and training protocols began from a student's monitoring her daily activities in an activity scheduling perspective and her recording the nature (behavioral mode and modality) of her appraised daily situational and contextually arisen loads, as was already found out to be a workable starting point for the students here in the two earlier empirical projects (see Appendix I). However, this self-monitoring of one's recent real behaviors turned out to be weak and moved into dualist positions, such as recording of one's despaired emotions. Many students' dualist recording broke down as their continuous monitoring of their behavioral activity cycles and therefore a more elaborated recording protocol from the behavioral modality perspective was introduced in order to encounter their dualist recording either of their specific despaired emotions or of their fixed and isolated emotionally appraised problems. The monitoring

frameworks into recording different disjointed and potentially contradictory behavioral modalities by pie-chart technology (Appendix IIa) were broadened to provide incentives for the students to go beyond dualist reasoning, as theoretically elucidated in the previous sub-sections. This recording encompasses all behavioral modalities presented to the student (see behavioral modalities p. 183). First, the recording reframe comprises both acceptance-commitment modalities as on-task performance activities and dysfunctional worrying and safety-seeking modalities. The students were encouraged to take a close and honest look at their contextual real daily behaviors without abstract and worry-inducing generalizations. The students might often differentiate between the scope and relative strength of their worrying and on-task performance behaviors in their reflective and behavioral traversing in their recent daily situations.

Related to the attained results in the daily behavior recording (Appendices I and II), the students were guided (particularly by means of coaching and psychoeducation) to validate and challenge their anxiety and despaired peak experiences, which they could identify in their recording of daily procrastinating and other anxiety and avoidance-inducing behavioral situations and activities. The students were introduced to view and challenge their negative and other intrusive automatic thoughts. This recording and its exercising was introduced to the students for encouragement of their understanding of the metacognitive and spontaneous nature of human contextual behaviors. According to Weems et al. (2003) an individual's decreased control over anxiety-related external events and internal reactions would be negatively correlated with self-reported anxiety. It was discovered, in the practitioner's assessments of the students' daily behaviors, that the students demonstrate a relatively high tendency to thought-action fusions in their tacit thinking patterns. In such a mode one's negative thoughts become appraised as a negative and real state of human (ontological) affairs that must be directly avoided by turning to safety-seeking behaviors, such as thought suppression.

The recording technique was not actively encouraged for each student's overenthusiastic practice because in active worrying this treatment method is not always feasible for clients: it could increase the individual's despaired depressive thinking if she cannot receive additional psychoeducation and supervision on these deep behavioral issues in real daily practice. The deployed recording method was based on Kendall et al.'s (1989) The Automatic Thoughts Questionnaire and their stepwise identification and re-questioning; it was adequate. A pivotal part in the recording was to demonstrate to the students how functional or dysfunctional one's individual tacit automatic thoughts are, for example, they could increase flawed generalizations and dysfunctional beliefs in appraising and attributing individual behavior. In general, as was expected, in their suppressive and safety-seeking thoughts, with an exception of a third of all the students, they were not motivated to identify or take as self-evident the fact that they had tacit negative automatic thoughts which would be feasible to record and re-challenge.

In the second phase in the implementation of behavior monitoring training protocols the students were encouraged and supervised to monitor and revalidate their recent learning behavior as divergent modalities in their recent actual home studying by applying a pie-chart method (Appendix IIb). Because the students were mostly not performing the required rich self-regulated study of psychological learning materials' preparatory activi-

ties before each classroom session they were guided to take a specific look at their real learning activities at home. As seen already in the two previous projects a large number of the students were not studying at home in a deep learning manner and they would not be able to execute this recording with great accuracy, if executing it at all. Obviously this method would not initiate efficient home learning in all the students at once, but it might strengthen their continuous mindfulness behavior monitoring in daily learning activities and provide psychoeducational understanding of its pivotal sense for their well-being and daily living. The deployed pie-chart technology of simultaneously assessing one's vitality and degree of both avoidant and on-task performance activities in relation to each other would be very useful. Its workability would not be diminished by any practical reasons, such as insufficient and broken execution by the students. It was also expected that the students would exhibit various specific problems in the recording of their modality features in their recent behaviors. Therefore their revalidation of their actual and real learning behaviors would remain unfinished when they are not metacognitively orientated to follow their anxiety peaks and arousals as the cornerstone of effective problem solving. They commonly would underestimate the strength of their actual on-task performance and they would not be motivated to view their safety-seeking behaviors as maladaptive at all. The students would experience problems in taking monitoring initiatives and, as was expected, specifically, they would have difficulties in viewing their behavior resulting from their own disjointed contradictory internal forces and therefore their continuous daily practice would be crucial.

The pie-chart recording technology for monitoring one's divergent behavioral modalities was adequate for the students in their verification of the real difficulties in reading psychological texts. However, strong text comprehension is not simple to invigorate in the students' learning because their ordinary conception of this individual comprehension consisted predominantly of a tacit orientation to pick up general formulas of human behavior without their inherent sense making to general forms and concepts in learning materials. Therefore, through the practitioner's coaching and psychoeducation, it was important to underscore to the students the importance of gradually improving their self-regulated learning skills and competencies by letting go of traditional ideal conceptions for their move into rich and real self-regulated innovative learning activities. This individual understanding was also the learning issue in psychology studies in the second phase, how to innovate: subjective conceptualizations and understanding of human arousal in one's contextual realms, an individual's cognitive recourses, subjective motivational matters, behavior regulation and control, personality psychologies.

In the third phase the two previous separate recordings and training exercises, along with divergent and mutually conjoined behavior modalities for invoking a student's behavior monitoring, served as the templates to accurately revalidate her perceived and observed daily problems in her daily learning activities from the previously introduced safety-seeking perspectives. In this training phase the students would perform their daily activity scheduling, recording daily loads by pie-chart technology, identify and challenge their automatic thoughts and record their daily behavior management with the intention of strengthening their on-task performance in some daily moments. Perhaps they would even perform behavioral experiments and exposure-related exercises (without any de-

tailed written stepwise psychoeducation and the practitioner's classroom coaching), as well as engage in stepwise problem solving via the introduced literary guides. In this phase, the students were guided to a daily continuous practice to improve their learning and daily management via the applied CBT behavior-management methods. It was supposed that these exercises would initiate and broaden their frequent rigid psychological viewpoints and belief structures and enrich their contextualized conceptualization of their behaviors and problem solving, and that these reflective individual activities would then expand to behavioral conceptualizations in wide individual and social contexts.

Simultaneous individual thinking through mediations and forms together with concurrent evaluation of internal and divergent powers and forces in the maintenance of one's daily behaviors and actions is a demanding task for the students. Therefore it is conceivable that they would not frequently succeed in these validations with an increased accuracy as has already been noticed in the acceptance-commitment-based therapeutic practices. It is self evident that a number of the students would fail in self-regulated learning in the psychology course because they were not performing the exercises and recordings or, if they did perform them, they would take them as rigid and theoretic protocols without taking a keen and true look at individual real behavioral problems. Nevertheless, as Hayes (2004a) states, an individual's behavioral task of gradually developing an accurate view of one's avoidant behaviors is required. Thus, as informed by the practitioner's assessment of the students' behavior, the students were instructed to assess their daily mental and situational problems by using all the adequate monitoring exercises, learned in the two first phases, with deployment of specific CBT treatment protocols and more specifically if they became sufficiently completed to embark on behavioral experimenting and exposure-related exercising. It had been already established in the two earlier projects that with an almost complete lack of psychoeducation in this teaching, the students experienced difficulties in metacognitively evaluating their own interpretations of their contextual behaviors. As seen in this project, at least in problematic situations, the students seemed to appraise and evaluate frequently and spontaneously all uncertainties and thoughts as negative; they minimized their evaluations of the efficacy and adequacy of their recent problem-solving activities, and did not effortlessly succeed in evaluating the strength in divergent behavioral modalities in relation to activities, the total of which total in a certain context is 100 percent, and not the 60 or 150 percent they frequently recorded.

In the fourth phase the devised monitoring exercises were introduced to the students to embark on their more specific training means that were introduced in the three earlier learning steps in behavior monitoring exercises. The practitioner's intention was to see if options would emerge for his individually tailored, collaborative supervision and feedback of the students' learning behaviors via the software-virtualia learning template. If the students completed the behavior monitoring exercises from their subjectively evaluated incentives they could gradually identify their positive successes in their appraisals and real behaviors in recently performed contextual learning behaviors on their own and/or from the support of the practitioner's coaching and of his real-time software feedback. In particular, the students seemed to exhibit additional worries regarding their difficulties in their concentration in contextual learning activities (e.g. text comprehension)

and in concentration on, and in, attending to their classroom learning. Therefore, from the viewpoint of mindfulness psychologies, the students were guided to monitor their thought flow in reading psychological texts along the lines informed by Wells' and Papageorgiou's (2004) metacognitive behavior therapy and their attention training method. In this recording the students were guided to monitor their thought flow in losing, maintaining, and in succeeding to restore thoughts to the learning issues at hand in their concurrent reading activities of psychological learning texts (Appendix IIc). It was obvious to the practitioner from the beginning that only a few competent students would be able to accomplish the recording because the students' worrying-related thinking modes were often dominant in learning, and this recording technique would cause additional stress and disruptions to their concentration. It was highlighted to the students that disruptions in attention and concentration are an essential part of every individual's efficient learning behaviors and one's becoming aware of it supports one's subjective understanding of the learning objectives.

In this project the students frequently omitted these exercises and in classroom coaching commented on a number of crucial shortcomings in the performed recordings and these learning problems were particularly addressed in the following classroom sessions. For example, one's recurrent practicing on recording one's concentration and other behavioral things in concurrently attended classroom sessions did not produce positive results for all the students, but the benefit from this practice was evident because they started to become aware of their tacit problems in attention and concentration. However, many other students performed these tasks spontaneously and validated their learning behavioral patterns and became somewhat aware of, and accepting of, disruptions in their attention and concentration in their learning. Suggestions to move towards more individualistic psychological conceptualizations and applications were given to these students, for example, to deploy these earlier behavior monitoring and training protocols in their daily living and work practices.

Based on the practitioner's discoveries of the students' behaviors it seemed reasonable to provide means to the students' confrontation and re-challenging of their behavioral management strategies in doing specific learning tasks as text comprehension. The introduced monitoring protocol was to guide a student to monitor subjective thought flows as thought contents and its tacit control endeavors or as other thinking strategies, for example engaging in thought suppression. Salkovskis and Campbell (1994) discovered a higher rate of intrusive thoughts for participants who tried to suppress the thoughts than for those participants who simply monitored them. The practitioner has already found out that there often were indications of the students' tacit falling into thought-action fusions, as are general features for example in obsessive or depressive thinking patterns. However, here the objective is not to research thought suppression but the enhancement of a student's cognitive mindfulness monitoring of her behaviors.

In the fifth phase on various divergent, optional monitoring exercises posed to the students the emphasis in their recording was placed on cognitive restructurings and more dialogic discussions on developmental and nursing issues in a contextual developmental stance. As established in the previous research projects, the students' inherent (meta)beliefs and their schematic conceptions seemed to be stable and even rigid, therefore it

was not simple to foster their individual empirical validations of their metabeliefs directly. However, the students' were persistently encouraged to generate a dynamic and constructive view on human development and problems that must be managed without receiving supervision from the practitioner to deal with one's metabeliefs. The students could continue with their entrenched rather rigid learning patterns in studying psychology and some others would learn effectively in a self-regulated manner, but many students would try to achieve good results regardless of their largely fragmented and parsimonious learning activities because they were accustomed to set their learning goals in that idealist way in their many concurrent courses. Some of the students seemed to almost totally skip these psychology studies, as their largely unperformed records demonstrated. The practitioner's observation was that these students could not frequently decide whether to study or not in a given behavioral moment as manifested by their superficial learning.

The main exercise in behavior monitoring consisted of exploration of the developmental issues raised by the learning materials. A tacitly presented fundamental issue was to search for their potential thought suppressive-related behavioral and thinking activities. Thought suppression frequently seemed, at least partially and tacitly, to emerge while the students were attending lessons, and it disrupted their interpretation and evaluation of positive feedback on their learning behaviors. According to Kabat-Zinn (1982), and other CBT practitioner-researchers in mindfulness psychology, it is important to improve one's spontaneous awareness and smooth acceptance of one's thought flows without taking them as harmful and in need of being avoided. Therefore, the students were guided to perform a monitoring of their thought flow (Appendix IIc) more frequently by records; monitoring of one's thought flow was designed to guide the monitoring of one's behavioral concentration and continuous disruptions (e.g. thought suppression, worrying, over-positive thinking, or other distraction thinking strategies) in real-time during concurrent learning activities. However, only a few students, evidently those with strong text comprehension skills, were motivated to do the specific monitoring on focusing their divergent thought operations (as concentrating on the learning issue, traversing into sudden intrusive thoughts, bringing back thoughts to the learning issues). Therefore the practitioner's supervision of the students, evidently in more urgent need for these exercises, was thus not possible at all.

Van der Does (2005) affirms Wenzlaff and Luxton's (2003) empirical discovery in laboratory settings that thought suppression in dealing with threatening thoughts could be a short-term solution to despaired moods and thoughts, and simultaneously it can hinder problem solving when cognitive capacity is reduced (ibid., p. 11). Noticing one's spontaneous awareness and its disruptions and effortless returning of one's thoughts towards a learning issue at hand was thought to be a monitoring technique which provides the students with means for validating their potential and hazardous predisposition to the active use of thought suppression, as already elaborated in the fourth phase above. A student's metacognitive spontaneous worrying can be strong, and not initiated by specific and very strong internal stimuli but rather might be her learned behavioral style becoming reinforced by superficial and dualist communicative teaching discourses.

In any case, a student's reflective (dialectical and transcendental thinking, etc.) activities are the learning objective in behavior monitoring training here, where her key behavioral objective is to monitor her concurrent behaviors because thought suppression might interfere with her learning and sustain it as superficial. In mild anxiety initiating and worry-related thoughts, a student could normalize all her divergent aroused and anxiety-related thoughts as positive indications to her impaired mental operations and this appraisal would contradict her efficient deep-learning activities. However the functionality or dysfunctionality in problem solving is a difficult research issue and not solved theoretically or empirically here. A number of researchers (Purdon & Clark, 2001; Wegner, 1994; Wenzlaff & Wegner, 2000, etc.) performed empirical research on the maladaptive thinking strategy of active thought suppression in problem solving and the research indicates that thought suppression can decrease concentration and metacognitive activities and increase worrying activities, at least in empirical laboratory research settings. In the students' learning contexts any forced and instructed techniques of replacing worrying by some other specific behavioral operations would accelerate some students' anxiety-related behavior and stress when they try to more persistently and non-adaptively control their mental operations. The students' dysfunctional meta-worries would get stronger as has been found to happen in chronic depression (see, for example, Segal, et al., 2002; Papageorgiou & Wells, 2004).

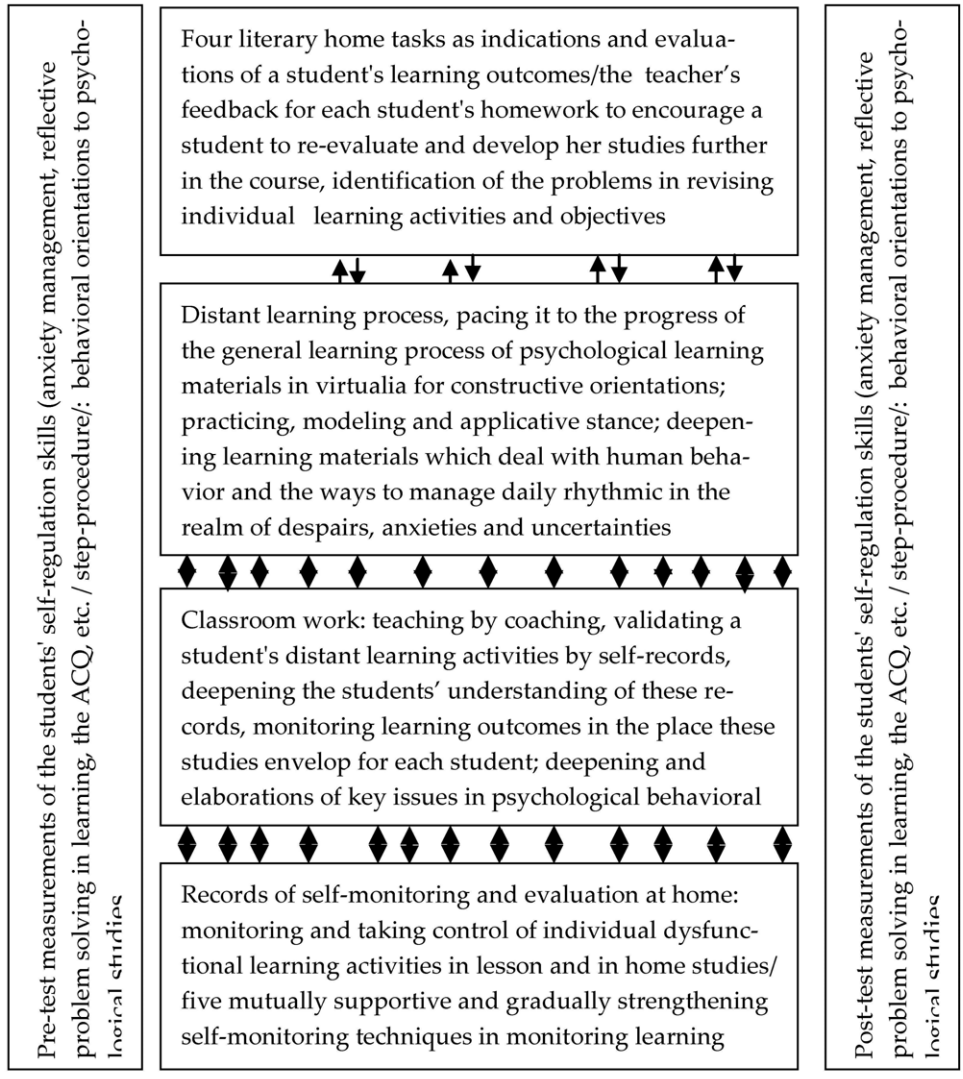
2.6 Addressing a student's worrying by scaffolding her learning

The constructed behavior-monitoring recording means suggest a behavioral stance for a validation of, and improvement of, individual daily learning behaviors. In the CBT reframe, learning behaviors are to be considered as multiple, multilayered and contradictory behavioral activities in an individual's perceptions, interpretations, thoughts, meta-critical thoughts and evaluations in her management of her daily rhythmics by concurrent overt activities. As empirically verified throughout, in a number of specific recent conceptualizations and research of these inherent behavioral tendencies, anxiety and emotional behavioral problems indicate flawed and biased cognitive dualist activities such as dysfunctional thoughts, dealing specifically with one's intrusions, metacognitive beliefs and schemata. In order to go forward to invigorate an individual's metacognitive or reflective behavioral competencies these behaviors require empirical testing in one's real social rhythmics. To this purpose, the monitoring recording reframe with its four behavior modalities, designed for the enhancement of individual reflective problem-solving behaviors by re-challenging individual worries and their related avoidant behaviors, was presented in a rather tailored manner, as was outlined.

The issue here is not that all the students shall complete records successfully and effectively, they can also only perform their ordinary learning patterns to which learning the basic teaching template in learning materials and other basic structures provided practical options. Above that basic line to learn, specific scaffolds were introduced and implemented to invigorate the students' impaired deep learning both in their homework and at classroom sessions through coaching and supervision, and concurrently to carry out an empirical research on its workability and feasibility on the students' basic behavioral competencies. The execution was a demanding challenge for the practitioner under the

deep confinements to dualist and instructive surface learning practices, but it became possible because the preliminary scaffolds in the two previous projects paved the way towards their enrichment in this project. Next, the main research issue is to produce an empirical research on the workability of this additional scaffolding by deploying and integrating CBT-informed therapeutic tools and treatment methods in treating clients with anxiety and stress disorders.

Figure 2. The third teaching project: the general teaching and learning process in psychology



As Figure 2 presents, the scaffolding is massive and for the students it sets up a dialectical learning environment in the curriculum-based teaching structure. From a student it requires her continuous decision making and particularly her strive to find a suitable balance among: learning psychological issues via learning materials, attending and learning in classroom sessions, doing behavior monitoring software exercises to validate and (if needed) to improve learning behavior, as well as the total strategic management of all the special learning activities. From the practitioner the management of the teaching practice requires his preliminary designs and practical construction of the scaffolds. This means constant management of the virtualia template in the students' core learning process, and continuous recording of each student's learning activities so that the practitioner can have accurate conceptions of how to coach the students' learning and what kinds of learning obstacles they generally encounter and how to solve them. The practitioner's supervision of a student via software was not his basic objective because at first it was pivotal to provide rich means to scaffolding of a student's learning of psychology in order to have new options for collaborative supervision in the following teaching projects.

In sum: the goal of all the arranged scaffolds for student learning is broad; it comprises validations of a student's actual learning in an acceptance and commitment perspective and it supports a student's refraining activities from safety-seeking behaviors as well as her re-validation of her current daily and learning behaviors.

3. RESEARCH ON THE FEASIBILITY OF THE BEHAVIOR-MONITORING CBT TOOLS IN THE ENHANCEMENT OF STUDENTS' LEARNING COMPETENCIES

Next, the research setting is elaborated: the attempt to discover empirically whether the behavior scaffolding of the students' behaviors and learning could be a sufficient and feasible methodology for an invigoration of their self-regulated learning and the strengthening of their core functional behavioral competencies. Sub-section 3.1 contains a description of the teaching: it provides real and mainly observational data of the students' behaviors and learning. The following sub-sections delineate the entire research configuration for the practical steps in an empirical research.

3.1 Practical execution of enriched teaching interventions

There is not space here to describe and report in detail the practitioner's execution of the constructed comprehensive and novel program in practical teaching. Therefore the many crucial practical work realms in managing the deepening teaching project, its learning materials in classroom coaching, and the rich and tailored use of a virtualia-software template for providing feedback to each student in supervision of a student's learning are only described briefly. The issue in this report is to delineate and research the workability of the practical scaffolding of the students' learning behaviors in real teaching practice with 34 female nursing students. The practical execution is roughly similar to CBT-informed group therapies. The teaching began from the delineation of the teaching program and with the information of its continuous empirical research and the execution of

the research questionnaires. The first session also familiarized the students with the deep, dynamic and stable teaching and learning process, which required a student's own integrated management of her home studies and classroom learning and her active utilizing of the practitioner's special means to support her daily learning.

Learning in a large group setting was thus individually managed in search for the shedding off of superficial diffusely targeted communicative teacher–student discourses which are familiar in instructive teaching. A curriculum-based learning program was set by the educational management in carrying out a basic teaching program in introductory psychology which lasted nearly two months with one or two classroom sessions per week. Classroom teaching by coaching was tailored to motivate and guide each student in her present learning activities where three basic work objectives were to familiarize the students with the execution of their psychology studies, to guide them in the use of behavior monitoring protocols in their search of their actual recent learning activities and to do learning in this course on the educational objectives. Each group session of 90 minutes, 14 in total, was highly structured and collaboratively managed. The main classroom work issues were the students' real execution of home studies (such as behavioral exercises), their cognitive re-structuring and re-modeling of the learning issues on human nature, and their orientation to the entire management of the next learning issues and home studies. Each student decided by herself to what extent she would concentrate on her behavior monitoring and ways to learn basic learning matters in psychology. The practitioner's work objective for designing learning scaffolds to guide a student by behavior monitoring means to search for behavioral regularities in her recent behaviors and to identify and re-modify her learning behaviors was the main issue under discussion in each classroom session. The general psychoeducative stance was to guide a student to validate her real daily learning and behavior by monitoring her potential worrying and rumination and thus to apply common CBT treatment tools to improve her problem-solving activities

3.2 Research problems

Two divergent dimensions were under empirical investigation: the first was the students' behavioral patterns regarding their real learning activities, and the other was to measure behavioral core competencies and their concurrent deficiencies in these core competencies, as they came up in the students' scoring in the applied CBT questionnaires, as well as in the practitioner's other empirical data of the students' behaviors. The initial purpose was to enhance the students' self-regulated learning activities, as they might emerge in the students' behavioral competencies. The entire scaffolding package, both the practitioner's teaching the students in their self-regulated learning of psychology and providing CBT means for enhancing their reflective mindfulness learning, was a new and stressful learning situation for a student on the issues of individual anxiety management and its enhancement. Therefore the practitioner's work objective was not to attain immediate improvements in the students' learning patterns and their behavioral core competencies, but to find out if this kind of setting up of an innovative learning environment to the students' lay learning would be practically possible and adequate from moving from instructive dualist teacher–student discourses to more collaborative and non-dual ones.

The main research problem was to research the feasibility of the constructed scaffolding, as a teaching template in transition from instructive teaching to coaching and collaborative supervision of the students' learning. The research questions represented a sufficient basis in the assessment of the feasibility of the introduced scaffolds in the students' psychology studies:

1. Are the constructed and performed learning scaffolds and teaching interventions workable in that the majority of the students can perform their studies in psychology in a more intensive manner than was the common traditional practice and the initial starting point before these psychology studies? Are the pre-test/post-test measurements (selected CBT questionnaires) reliable in measuring the workability of the teaching program and its scaffolding?

2. If scaffolds are workable in practical teaching, and the CBT measurement tools are reliable, do they indicate that positive changes towards mindfulness behaviors have taken place in the students' learning behaviors and in their underlying behavioral core competencies?

The research objective to investigate the students' core behavioral competencies by taking the researched variables as the same without their theoretic derivation but from a non-dual reflective position to human individual social life and behaviors diverges from the traditional theoretical stance to do research on human skills and abilities or on other individual internal matters. Thus there are no specific methodological difficulties in empirical measurements of behavioral competencies because the CBT-reframe behavioral competencies and their deficits are directly accessible to each student, as they manifest in her behaviors of which behaviors she performs her scoring in the introduced CBT questionnaires, as already discovered in the second research project. In addition, the deployed CBT elaborations both to individual functional and to dysfunctional competencies in vital relations to each others provide the scientist-practitioner with a logical classification for the researched behavioral constructs in a student's anxiety-management behavioral competencies.

Domain 1: The students' learning styles and their pre-test/post-test stability (deep and surface learning).

Domain 2: Pre-test/post-test changes in the students' core behavioral competencies and in their concurrent behavioral deficiencies in anxiety management.

Domain 3: Vitality of the students' reflective problem solving competencies.

Domain 4: Nature of the students' end-state divergence in their behavioral core competencies and deficiencies.

3.3 Measurements and their internal consistencies

The imported CBT measurements directly standing for the empirical variables are delineated first, and then the main results of their reliability in their internal consistencies are shown. Finally, how sufficient reliabilities in the most crucial points to the research problems provide justified options for an empirical research of the workability and feasibility of the implemented scaffolds to the students' mindfulness metacognitive daily learning is described.

3.3.1 Grounds for choosing standardized CBT questionnaires

Table 1 presents the research setting in its theoretic and empirical measured constructs, and variables in the executed pre-test/post-test context. Next, the research setting is discussed, in particular the CBT questionnaires targeted at each of the three specific research problems.

Table 1. Behavioral constructs, their empirical variables along with their questionnaires

Behavioral dispositions and competencies in learning and daily living (reflective problem solving and its deficiencies)	Behavioral constructs to be empirically measured by student's evaluations	Measurements for measuring competencies and their potential changes in pre-test and post-test conditions	Measures and their analysis for assessing the feasibility of potential changes in the students' behavior competencies
Self-regulated learning competencies and deficiencies as the domains of anxiety-related behavioral problems	-behavioral learning style (surface-deep learning) -anxiety control (weak- strong) -styles of reflection: rumination and reflection -stepwise problem solving recording competency	1. R-SPQ-2F (Biggs et al., 2001) 2. ACQ (Rapee et al., 1996) 3. RRS (Treynor et al., 2003) 4. A stepwise written problem-solving procedure	-Behavior observation, analysis of learning outcomes -Results of the students' execution rate and the success of the monitoring exercises -Contingency analyses and multivariate analyses of the implemented CBT questionnaires

The need to deploy internationally standardized questionnaires in addressing behavioral competencies is crucial in maintaining a scientist-practitioner's research stance if that working position in psychology teaching is to be grounded. Worth recalling is that research on investigating empirically the workability and feasibility of concurrently performed practical teaching has not been found in contemporary, international psychological research. Here it was argued that in the open totality perspective to transformative social life, from the arising modality position to individual behaviors and to their underlying behavioral tendencies, the students' behavior assessment is possible and it is an adequate starting point to practical scaffolding of the students' daily learning behavior via CBT treatment means. Fortunately, some pivotal and adequate anxiety-related CBT questionnaires are to be found as standardized research means to do empirical research on the abovementioned individual behavioral domains, which are not theoretically de-

rived but from the practitioner's practical position and are reasoned as the keystones to individual behavioral resources to live within constrained polyvalent transformative life. The CBT questionnaires do not measure or verify individual psychological constructs and underlying forces behind human behavior as such, but they indicate how at least two contradictory mental forces are at work behind an individual's behaviors. In empirical research the questionnaires address multidimensional or at least two-dimensional individual forces the dimensions of which emerge in an individual's real behaviors. The questionnaires are validational data for the practitioner's research and practical teaching endeavors. All the practitioner's endeavors require many research tools: his assessment of the students' behaviors; his keen, persistent and largely elaborated searches for adequate psychological explanations of the research objectives; as well as his direct designs to empirical research pre- and post-test settings and his practical execution of the specific empirical research itself in analyzing the empirical outcomes and in validation of the attained outcomes.

The pre-test/post-test measurement setting restricted the flexible application of the CBT questionnaires and targeted the questionnaires at the core issues in human anxiety management. The main dominance of the measured behavioral dimensions required empirical identification and focused on both the students' real learning patterns and on the core behavioral competencies in uncertainty and anxiety management. In anxiety management, the main underlying, empirically researched, theoretical criterion was the level, either on which intensity the students focus on their self-reflection, behavioral symptoms and problems or on their behavioral capability for on-task performance and management of daily rhythmics in their daily problem-solving behaviors. From the second research projects' measurements the CBT questionnaires focus was thus redirected towards the establishment of adequate empirical criteria in measuring changes in basic core behavioral competencies. Therefore the research objective was not primarily to research the students' potential and specific anxiety problems and disorders.

An empirical investigation of the potential pre- and post-test changes on the students' behavioral competencies was pivotal in order to discover and gain validating empirical data on whether the implemented scaffolds in behavior monitoring means and exercises, together with other surfaced options to support the students' reflective and metacognitive learning, would be feasible. Because of the students' vast divergence in their core behavioral competencies the practical problem of how to choose CBT questionnaires primarily used with clinical people as well with non-clinical people was encountered. It was thought that the use of the ACQ questionnaire and the RRS questionnaire to simultaneously address many individual behavioral dimensions such as depression, anxiety, stress and rumination, as well as metacognitive uncertainty management would be the optimal solution. The individual behavioral realm to individual uncertainty management was a key behavioral issue because the psychology course covered a new psychological position to human metacognitive-mindfulness behaviors. The chosen CBT questionnaires were standardized, and internationally validated measurement tools were used; the questionnaires' items directly addressed individual behavioral competencies in the management of individual daily rhythmics that did not require specific theoretic derivative constructions from the practitioner. They enabled the student, as well as the practitioner in

analyzing the students' scores, to view individually appraised behavioral quantitative features in anxiety management as an individual's behavioral competencies. The selected questionnaires were related directly to the teaching objectives in the enhancement of the students' basic reflective behavioral competencies. Measuring individual behavioral changes at a core behavioral competency level is a demanding tack to address (for example, measuring the students' basic personality characteristics and abilities was not feasible, because the teaching program was not tailored for that dualist behavioral realm). It was addressed satisfactorily, as discussed below.

If the chosen CBT questionnaires would be reliable the problem remains how to simultaneously address and cover a student's many and multilevel safety-seeking behavioral activities similar to distraction and thought suppression strategies. For these reasons it was concluded here that empirical indexes on maladaptive ways of managing one's despaired and anxiety-related moods and intrusive thoughts might be low but anyway the indexes when consistent with the practitioner's other data of the students' real behaviors indicate the real features of their behavioral competencies. It is expected that rumination and worry in their avoidant thinking modes would result in a student's middle scores in her avoidance to face and to appraise disjointed world lines in her evaluations. In those despaired individual evaluations, an individual might commit bad compromises regarding the incommensurate and constrained world lines as criteria of her assessing. It could manifest as the acquiescence problem that is not completely avoidable in the students' scorings although many items have been reversed in order to avoid social desirability effects. Also the students evidently could avoid taking extreme positions therefore also relatively small means in a given behavioral dimension would indicate real things if the dimension is internally consistent.

This reliability and validity problem cannot be solved entirely in all the chosen CBT questionnaires, but other research positions would be not valid, for example theories inferred and technically conceptualized constructs of measuring the students' problematic tendencies and dispositions are therefore omitted. Also measurements of the students' self-concepts and their other identity constructs are not relevant because they are dualist positions and here the practitioner's attempt is to introduce positive changes in the students' real behavior, which comprises an individual's interpretations and evaluations of the nature of her behavior management, as her concurrent real behaviors.

In single-case analyses individual pre-test/post-test changes on the measured CBT questionnaires dimensions would occur in both directions although their improvement in functional direction is the goal. Also a student's functional competencies would decrease when the new demanding reflective and contextual psychology could cause her internal conflicts in understanding human nature and behavior. Validation of these individually varying outcomes regarding the research objectives requires a strong CBT-informed practitioner's position to client psychotherapy practices where the practitioner's interpretations and evaluations of the empirical individual outcomes somewhat depart from common interpretations and evaluations used in clinical psychotherapeutic settings. For example, if a student's scores in sub-dimensional means are low in the RRS scale on reflective pondering, and active rumination and depression subscales' means are relatively high or at least higher than in reflective pondering, it indicates a student's weak reflective

metacognitive activity in these academic problem-solving real practices. Contrary to the clinical settings, such outcomes would indicate (if all other required clinical data indicate the same direction) that a client does not have strong behavioral impairments.

3.3.2 The CBT questionnaires' internal consistency

Within a 40 minutes' group session, the students' scoring enabled the practitioner's deployment of the three different CBT questionnaires, and these are described next. The practitioner's special construction for a design to measure the students' crucial interruptions and break points in her problem solving, such as in her moving onto evaluations of the divergent and rather contradictory action plans and to conclusions about the options to their practical execution in her real life, is then presented. This special stepwise written problem-solving protocol was targeted at investigating if the students' reflective problem-solving thought activities would become stronger during the teaching program's execution. The three standardized CBT questionnaires were the following.

The Two-Factor Study Process Questionnaire (R-SPQ-2F, Biggs et al., 2001) The 20-item scale is adequate as a general index of the students' generally performed daily learning behaviors because it indicates an adult student's main behavioral styles and habits in her studies, and not her abilities. If the measure is reliable it is a stable criterion to assess the feasibility of the CBT-informed scaffolding of the students' learning across all separate research projects to measure if the students' metacognitive learning has become stronger during the psychology course's execution. As discovered in the second research project, its reliability in measuring the changes in the students' learning habits is insufficient because of social desirability: it favors a student's inclinations towards deep learning activities although they might be rather weak in this instructive teaching and educational practice. At least after this psychology course and its additional scaffolding the students understand learning activities more deeply and so their pre-test and post-test means in their four learning patterns are not commensurate with themselves. Therefore the questionnaire is not reliable in directly measuring the significance of the potential changes that occurred between pre-test/post-test scorings in relation to a student's deep and surface learning. However, when the practitioner has observational and other data of the students' real learning behaviors and behavioral patterns the students' means in their learning styles can be evaluated. The questionnaire is reliable in delineating the general feature of the students' contingent learning activities across a wide spectrum of optional learning activities. As a measurement of the students' attained end state in their learning dispositions it is reliable, and therefore in this project it provides data to prove that further scaffolding could be grounded and possible.

Compared to the second research project here the questionnaire's internal consistency was higher in the post-test measures. The reason might be that in this project the students were probably faced with new and more really manageable learning obstacles in their psychology studies, due to many reasons (e.g. the practitioner's more succinct psychoeducative rationales for guiding the students' studies at the first session compared to the second research project). In this project the outcomes in the two-factor study style questionnaire demonstrated that the students were not able to take a strategic and individually chosen stance to their specific preferred learning styles. Specific analyses in the stu-

dents' learning profiles, for example in factor analyses (not presented here), indicated that the students seemed to confront difficulties in appraising their strong tendency to surface learning, as their actual preference to their learning. It seemed that many students saw here strong confinements that prevented them from engaging in deep learning activities.

Cronbach's alpha in the four subscales in the students' group of 23 students (C-group) varied greatly. The deep motivational and strategic learning styles were not internally consistent in post-tests, although they were reliable in the pre-test (respectively 0,70 and 0,65), the entire deep learning scale was reliable in both measures (alpha 0,78 and 0,69). The total surface learning style was not internally consistent either in pre-test or in post-test (alpha was respectively 0,47 and 0,66), and both the surface learning sub-dimensions (motivational and strategic) were especially unreliable in Cronbach's alpha (in all four measures it was below 0,63, and even 0,24). These outcomes are taken here as valid and they indicate that the students' learning strategy has become somewhat stabilized at the end in more specific learning patterns. The outcomes indicate only a slight and insufficient improvement in some students' deep learning but the students' strategies to their learning could have become more stable but entirely divergent across all the students. However, although the students noticed the obligatory need to perform surface learning in the other studies, they did not indicate this learning as their preferred learning pattern although they were confined to this learning pattern. When internal consistency was low in some of the four sub-dimensions, and when the analytical steps to attain reliable combinations of items in each specific sub-dimension was not possible, the pre- and post-test outcomes in these learning dimensions showed that the students' learning styles in four behavioral modes in general were somewhat diffuse.

The Anxiety Control Questionnaire (ACQ, Rapee et al., 1996) is a general measure of assessing an individual's perceived control over anxiety-related events and it comprises 15 items. It was reasoned that this measure would be adequate because it would possess sufficient discriminative ability in measuring potential pre-test and post-test changes in the individual's tacit anxiety perceptions and tacit management of anxiety experiences, and it was reliable in the second research project. The practitioner has clinical experience in the application of this measure in psychotherapeutic work, and there it seems to be a valid measurement tool to measure both for individual behavioral competencies and for deficient behavioral patterns. In the practitioner's assessment of the students' behaviors it demonstrates if a student appraises her anxiety feelings so that she moves to safety-seeking behaviors in her attempts to directly alleviate subjective anxiety feelings. The measure's reliability might not be very high if clients have clinical anxiety problems and many stress symptoms. The measure with relatively high means (for example 3 or above, the range in means is from 0 to 5) here in a mindfulness reframe generally indicates a student's advanced behavioral competencies in anxiety management.

The measure with 15 items indicates the ways an individual appraises her perceived control over her anxious thoughts and emotions (Rapee et al., 1996). If an individual does not try to manage primarily with her anxieties specifically and separately from her on-task performance she behaves more mindfully and its essential part is to manage all uncertainties in the maintenance of one's real daily behaviors.

The factor analytic studies, performed with normal and clinical populations (Brown et al., 2004), have demonstrated that the scale comprises of three sub-dimensions of behavioral control aspects (stress control, threat control and emotional control). All three of the subscales were not reliable in their internal consistencies here, although they seemed to emerge consistently in a similar way to Brown et al.'s (2004) investigation both on clinical and non-clinical adult people. In particular, the emotion control subscale did not have the required internal consistency for test-retest analyses. Compared to the students' higher means in threat and stress control they frequently experienced more difficulties in their emotion control, as already observed in the second research project. Methodological attempts to achieve higher internal consistencies by omitting the items with low correlations did not improve the questionnaires' internal consistency in any of the three subdomains. Therefore the original item combination was maintained in this research.

Generally, the students' moderate abilities and competencies in their behavioral on-task performance management control in controlling their emotions could be due to the students' pre-adulthood developmental phase when their self-conceptions could be diffuse and low in self-esteem and in which behavioral problems manifest similar to dissociative maladaptive behaviors. More important here for the research purposes to enhance the students' general functional anxiety-management behavioral competencies is that the whole index is reliable in the pre-test and post-test measurements: Cronbach's alpha in the first measures was 0,80 and in the second measures 0,84. In this scale, some items were reversed so that its reliability, concerning the items' potential social desirability impact, would not diminish its reliability. The 15 items were presented in a Likert's scale, from 0 = strongly disagree to 5 = strongly agree. High scores indicate that the individual views and appraises her anxiety feelings quite adaptively without paying extensive attention to her aroused feelings and thoughts in her concurrent on-task performance. A student's low means indicate that the student pays special attention and engages in special activities for alleviation of her despaired thoughts directly which restrict her behavioral on-task performance activities.

The Ruminative Responses Scale (RRS, Treynor et al., 2003) was selected because it would target specific features in a student's rumination and worrying. It has been standardized to comprise three sub-domains in relation to anxiety and uncertainty behavioral issues that are reflection, rumination and depressive thinking. The practitioner's main purpose in the utilization of the RRS-scale was to find means that would differentiate behavioral patterns and orientation to manage with individual daily matters and problems either by using confrontational strategies, similar to exposure training approaches, or by moving to broken reasoning of all discrepant and anxiety-initiating mental contents. It was expected that it would be reliable and valid and it would have the required sufficient discriminative ability to identify the students' three aforementioned specific anxiety management patterns. It turned out to be reliable in assessing the students' despairing and worrying tendencies. Here it is a general descriptive indicator of the students' behavioral loads in dealing with anxieties and subjective living problems (Cronbach's alpha was around 0,80 in the pre-test and post-test). However, its discriminative validity specifically in the reflective pondering sub-dimension is too weak, and the dimension is too distorted for further application to identify whether there might emerge pre- and post-

test changes in the students' reflective pondering as their mindfulness behaviors. The reason evidently is that the students' main individual daily activity patterns are weak in relation to the strong mindfulness competencies and in the management of their daily stress through performance of specific refreshing and detaching activities. The RRS's internal consistency in its three specific sub-constructs is too weak in the post-test measurements which fact is to be considered a partial indication that this program is too inefficient to address the students' uncertainty behavioral issues.

It can be seen that the practitioner's grounds for the deployment of this measure was based on his unwarranted optimism for attaining positive results in the students' improved reflective metacognitive behaviors The measure was not reliable for single-case analyses, because it did not address divergent behavioral matters common specifically to generalized anxiety behaviors, depressive behaviors, and mindfulness behaviors. Regarding these three divergent behavioral underlying mechanisms in these anxiety-related behavioral patterns the students' scores in the three behavioral dimensions brought conflated and also negative outcomes which were not possible to evaluate in single-case analyses and means in the students' group. As the practitioner's ex-post facto reasoning it is understandable that the students, at this starting phase of their studies with no specific psychological education to human development and to self-regulated learning and their metacognitive mindfulness competencies, are confined to and enmeshed with their inductive emotivist reasoning similar to depressive behaviors manifesting in their daily rushes, procrastination in all specific safety-seeking behavioral patterns and actions.

Stepwise written problem-solving procedure

The scaffolding program was targeted at the enhancement of a student's reflective thinking, that is, mindfulness and broad reflecting, of her transcendent or underlying social and all mechanisms. In dialectical critical terms this is the template to individual true being and to discursive intellect activities in one's daily rhythmics and for acquiring empirical data of individual problem-solving activities, and it was constructed as a stepwise written problem-solving procedure. For the practitioner it might provide demonstrational data of how the students behave in their real world constraints and what the most crucial pitfalls of their reflective problem-solving procedures are, and whether positive changes due to the program's execution might emerge in the pre- and post-test measures.

An individual's reflective activities to discern all different action lines of one's daily rhythmic in one's creative courageous thinking are essential for noticing and conceiving problem solving in dialectical critical realist terms. It signifies that the human ontological world is multilayered, contradictory and it is all just coming into being as to what line in the current state of affairs might occur in principle, and needs to be taken into account in one's daily behavioral activity programs. In worrying and generalized anxiety problems, human problem solving is broken and restricted to one's pondering on actual and superficial issues and falls into flawed compromises in daily activity plans. It indicates an individual's indifferent orientation to what activity plans must be executed and how to gradually put them into real daily practice. An individual might not be able to discern her real incommensurate and contradictory living forces, or to perform activity planning in disjointed and disparate optional activity realms. She might not be able to see the essential

positive and negative outcomes of each of the activity plans if the outcomes contradict her more pivotal goals.

In crucial aspects the devised technique of the main procedures is similar to Nezu et al.'s (2003) delineations as well as to Andrews et al.'s (2003), who devised a structured problem-solving technique (ibid., pp. 451–457). The focus is on one's seeing the opposite living plans in a broad reframe in regards to the transformative world, which at least in principle is open and multilayered and exists under continuous change. In an individual's daily living programs it is not manageable for her by her undertaking of sporadic activities, rather it becomes individually seen through one's activities as forming up, or consisting of, the specific strategic options in one's daily life and its individual actions. The practitioner's attempt is to observe in what steps the students experience essential difficulties in reflective problem solving that start to take place when they embark on persistent and multiple and conjoined daily activities in their real, constrained social living circumstances.

Psychological research has been focused on delineating that an individual's state orientation in behavior can make her prone to emotional stress and the stress diminishes her capabilities to see and evaluate stimuli which would be relevant feedback for her actions, and needed in the maintenance of her self-efficacy (see, for example, Bandura, 1977). The practitioner's aim is to strengthen an individual's on-process focused behaviors or the behaviors of her programming living conditions and problems that are actionable in her daily behaviors. As a written exercise, it stands for (a) recognizing various divergent and distinct living strategies in real life problem solving, and (b) for attaining a preferred feasible strategy for managing the present constrained living conditions. In the rumination-prone students, thinking causes difficulties in emotional regulation, and these behavioral problems are more frequent among females than males, according to the research by Thayer et al. (2003). Worrying impairs an individual's ability to see the alternate and mutually exclusive options of the ways to manage the stressful living problems behaviorally. The six-step, problem-solving task is a procedure, aimed at reaching at (c) workable and actionable solutions for the preferred strategy of living in an individual's constrained living conditions. The students were instructed to perform within twenty minutes the following steps in written recording:

1. List living and daily problems and challenges.
2. Evaluate the stress of the classified challenges by using a pie-chart method.
3. Develop two mutually exclusive plans for managing your one or two living problems causing stress in your daily life.
4. Devise mutually exclusive actionable plans to deal with, or to solve, your daily living problems you identified above.
5. Use plus-minus method for the assessment of the two optional and most feasible action and strategy plans to manage your daily problems that you identified above.
6. Calculate and add minuses and plusses in four columns in order to attain a conclusion of what would be the most optimal action plan, as the most feasible for being executed in your real life.

The stepwise recording design in an individual's real daily management stance is also an estimator of the feasible impacts that the teaching program might produce on the students' metacognitive problem-solving competencies, and it deepens and realizes the practitioner's assessments of the students' behavioral competencies in managing their uncertainties. This recording as a single contextual pre-test and post-test execution gives demonstrative data, but it does not enable theoretic analyses of the reasons of the students' pitfalls in their stepwise problem-solving protocols. The protocol mainly delineates the specific steps in individual procedures to systemic problem solving in which a student experiences difficulties and flawed displacements in thoughts in her goal management within disjointed and contradictory world lines.

3.4 Analysis methods

The basic issue is to research the students' self-regulated or reflective behavioral competencies in their uncertainty and anxiety-management realms' activities where the student's pre-test/post-test changes in their competencies would enable the practitioner's validation if his conclusions of the workability and feasibility of the teaching programs were optimal regarding the real social educational life of nursing studies. In that practitioner's critical evaluation the implemented CBT questionnaires would provide validating data which would also through statistical group, subgroup and single-case analyses show if the practitioner's conclusions are empirically valid and justified regarding the programs adequacy.

Empirical outcomes might show progress in the students' functional behavioral competencies and improved self-regulated learning, but regression of these competencies might also take place either in the whole student group level or at least in single-case analyses. For these instances, statistical analyses and contingency analyses are adequate and relevant, when multiple relations between the researched behavior constructs and their indicators of the students' real learning activities are mainly qualitative and generally rather non-linear; for example each CBT questionnaire's item comprised a target at the two opposite behavioral poles in one's daily management of one's daily activities and in its rhythmics. The research objective is primarily two-dimensional in its nature, and the students' scoring between the two extreme behavioral poles of functional or dysfunctional anxiety management was delineated within the on-task performance and safety-seeking behavioral theoretic categorizations.

In order to research the students' pre- and post-test changes in their behavioral competencies (similar to the second research project) effect size was used as an estimate (Chambless & Gillis, 1993) because that would make it easier to evaluate the potential impact of the scaffolding on the students' behavioral competencies. The relevance of statistical analyses are not discussed in this research project regarding the workability and feasibility of the interventional teaching program, however, a very flexible use of various and multiple analyses would be the starting point. Multivariate statistical analyses between theorized behavioral and psychological constructs are not feasible and specific statistical analyses are not possible if the attained empirical outcomes are to be used to enable generalizations to other educational contexts.

For the practitioner it was difficult to elaborate accurately beforehand which of the CBT questionnaires would be workable and the most important for each of the student subgroups with divergent self-regulated problem-solving skills. The scale and scope of potentially occurring changes which the CBT questionnaires might pinpoint was not known beforehand, and the practitioner's knowledge and practical expertise to evaluate divergent processes of the educational organization as to how the students would deal with the new more demanding changes in these studies and what managerial mechanisms would have the potential to disrupt basic ordinary teaching practices would emerge. Therefore, the practitioner did not calculate exactly beforehand the ways he would analyze and integrate all the empirical data to reach basic conclusions of the program's feasibility of scaffolding the students' learning behaviors. Instead it was clear that this non-dual psychological position to the teaching of introductory psychology, which of course also entails understanding and taking as self-evident many students' learning in dual manners, that the educational objectives put to psychology studies would be very satisfactorily attained in basic, adult higher vocational studies in nursing. Because the teaching and learning were kept separate from the empirical research, as it was stressed to the students during the course, data from the students' specific learning activities were not analyzed for research purposes in this project but it had validating status to the practitioner's evaluations of the workability and feasibility of the teaching program. The other data, mostly from an on-line basis and through observation from the students' real learning activities, was available and of course it influenced the practitioner's concurrent revision of the scaffolds and its further executions in his coaching, psychoeducation, and collaboration during the course.

The other data on the students' real learning and daily living encouraged the practitioner to continue with his original research objective. First, the research concentrated on the workability of the scaffolding and secondly, on the options to enhance, at least in one or two student subgroups (the students with weak/average/latently strong), the students' behavioral competencies. This research goal, if achieved, would both refine and verify the practitioner's assessment of the nature of the students' behavioral deficiencies and the adequacy of the executed scaffolding. It was assumed that the students' worrying and safety-seeking behaviors could occasionally have deeper developmental origins that were not feasible to address specifically and individually by the performed group program.

The research problems covered many separate practical objectives such as to find out if the program would cause negative consequences to some students' behaviors. Therefore single-case analyses (see, for example, Sharpley, 1997) as well as exploratory data analyses (see, Leinhardt & Leinhardt, 1997) were performed in order to discover why the outcomes were of that specific kind. Multivariate factor analytic method was adequate in assessing the optimality of the executed rich scaffolding for the students' reflective learning and the strengthening of their functional behavioral competencies. In the intensive implementation of the rich behavior monitoring exercises with the intensive use of the software learning template and integrated with classroom coaching the practitioner had real-time data of the students' learning behaviors and of their shortcomings and that data deepened his assessments of the students' learning and all behaviors. That backstage data

supports the practitioner's summing up of the main outcomes to the research problems in this report.

3.5 Empirical outcomes in the students' core behavioral competencies

The main domains of reflective behaviors in the second research project were also applied in this research; the three separate domains of self-regulated behavioral competencies were learning styles, competencies in anxiety management and the vitality of individual competencies in anxiety management. The empirical outcomes address at least one or two dimensions regarding a student's behavioral functional or dysfunctional tendencies to behave and to act in her daily uncertainty management. Behavioral competencies, as human intrinsic dispositional tendencies, are under an individual's constant monitoring and evaluation in her daily behaviors, the outcomes in the pre-test/post-test CBT questionnaires indicate and represent the changes in the researched competencies on which the empirical programming and its execution might have an effect. The practitioner's research stance of maintaining a student's individual learning behaviors also required single-case analyses. Because of the students' vast divergence in their competencies there might emerge either positive or negative changes in the students' behavioral competencies that require more specific evaluation by relating the outcomes to the practitioner's other data of their real behaviors.

3.5.1 Domain: the students' learning styles and their pre-test and post-test stability

The Two-Factor Study Process Questionnaire was not reliable in its internal consistency in the post-test in the two surface learning sub-dimensions or in the total surface-learning sub-dimension (motivational and strategic surface learning patterns together). This indicates an increased stress in a student's studies before the end of the semester (acute studies to be managed with, no time for strategic learning) as manifested in their labile evaluation and appraisals of their learning styles. The questionnaire's 20 items are related to the specific activity patterns to manage with many learning activities and to specific features in an individual's daily activity patterns in learning and all daily tasks. An added item explained whether a student assessed her present learning styles in her entire studies, or specifically in her studying in psychology, or not. It was clear that all the students assessed their entire learning styles, and not only their psychology learning behaviors: it shows that the students viewed the role of psychology studies as moderate or even nugatory. As Table 2a demonstrates, the students' general and dominant learning styles had not changed from pre-tests to post-tests. Thus the students' learning styles were stable although very fragmented in self-regulated learning activities. In the performed factor analysis the outcomes (not presented in this report) showed that the students' learning patterns were not stabilized or became more systemic as is conceivable due to the students' stress problems and the dominant and fragmented surface learning activities in their education.

When reliability (Cronbach's alpha) in the sub-dimensions was low, specifically in the surface learning sub-dimension(s), it did not warrant accurate analyses of the potential changes in all the four sub-dimensions in the learning styles. However, with the other

data on specific and ongoing learning activities via virtualia and the practitioner's registers of each student's learning activities, it was possible to come up with conclusions. In the self-regulated idea the students' learning patterns in the large subgroup remained indiscriminate and fragmented which impaired their deep learning. The other half of the students studied persistently, but without incentives to improve their deep learning. On all the students, or in general or on the specific student subgroups in self-regulated learning, the psychology course did not have any specific negative or positive generalized impacts on the students' self-regulated or deep learning activities, but the program's successful execution guaranteed that this teaching did not return to dualist instructive teaching of epistemic psychological knowledge. Regardless of the fact that at least half of the students worked persistently in their psychology studies their learning patterns remained fragmented and superficial with an unexpected exception of five students. In the practitioner's observations, the students' learning stayed weak and passive as also shown in their scores in the Two-Factor study questionnaire and the outcomes indicate the students' weak and diffuse self-regulated learning skills and competencies. In classroom sessions some of the students also argued for their expectations of their needs for having real templates for their deep learning but to no avail. Especially, at the end of the course, the students accurately viewed their insufficient recourses and reinforcements to efficiently perform deep learning frequently in the dominant surface teaching and learning practices. However, as shown by the high means (when taking into account the students' acquiescence toward their favoring all learning options, whether reasonable or not), the students' surface learning did not increase during the course, the students found them-

Table 2a: Learning styles and their stability; means (standard deviations), N=25

Deep learning style			**Surface learning style**		
pre-test	**post-test**	**effect size**	**pre-test**	**post-test**	**effect size***
3,11 (0,51)	2,91 (0,50)	-0,40	2,46 (0,35)	2,09 (0,43)	

* Surface learning subscale was not reliable in Cronbach's alpha

Table 2b: Persistence of deep learning styles, means

		in the end					
		below* 2,49	**2.5-3,49**	**3.5 or more**	**altogether**	**the change's direction**	
in the beginning	below 2,49*	6	1	0	7	lower	7
	2,50-3,49	4	10	1	15	**stable**	16
	3,5 or more	0	3	0	3	*higher*	2
	total	10	14	1	25	total	25

* the students' mean were scored as changed if the means differed 0,30 or more in either direction; if the change was below 0,30 it was scored as the same

selves in diffuse learning conditions in their studies. These findings and conclusions supported the practitioner's initial reasoning on the regularities at work in the maintenance of social educational practice which were already made in the first research project: the students lacking self-regulated competencies in managing their worries and safety-seeking procrastinating behaviors might not have regarded the real options for deep learning when their curriculum was tight and it obliged them and reinforced them to

perform all surface studying activities, such as in team work with pre-formalized and strictly put learning tasks.

It is important to note that the empirical outcomes in the students' learning styles did not indicate the students' general and strong tendencies towards strategic and persistent surface or deep learning, which makes it more difficult to conduct research on their learning patterns. However, when accounting for the students' apparent tendency to social desirability and acquiescence to the item's assertions, it can be seen that the students' divergence in their learning patterns remained high all along during the course's execution. It was not possible to predict from this research how their self-regulated reflective problem-solving competencies would evolve in the future.

The changes in the students' learning styles between pre-test and post-tests were important to analyze in single-case analyses. These analyses indicated, see Table 2b, that the completed scaffolding was successful in its attempt to invigorate the students' self-regulated home studying and it strengthened their learning in general, but more intensive and more embedded scaffolds in the educational programs would have been required for carrying out more permanent changes in their deep learning. Table 2b demonstrated that the students' learning styles remained stable with regard to the self-regulated behavioral reframe: some students studied in surface learning and the other students in deep learning modes which were easy to identify by the practitioner via these scaffolds, although their learning 'modes' were quite loose and fragmented. In fact, the students' surface-learning styles remained strong in the second part because at the end of the measurement seven students' learning styles turned to a surface learning direction whereas the other students' learning styles stayed more often at the same original surface level with the exceptions of two students. This crystallization towards surface learning was partially due to the fact that in the post-test scoring the students were more capable to evaluate what an individual's self-regulated learning requires and stands for after having gained a deepened individual comprehension in the execution of the teaching program. It is worth recalling that some of the students developed specific and fragmented self-regulated learning skills, which do not bring out strong deep learning, as observed in the classroom teaching. Therefore the new practical execution of the teaching did not seem to impair the students' learning even in their surface learning patterns. Some of the students seemed to experience difficulties in the newly arisen living conditions, such as living on their own and doing their studies in which they met new, disjointed and contradictory educational tasks, as the students' dropouts (five students) showed. When the students tried to perform their lectured studying protocols they faced insurmountable difficulties in managing reflectively, by one's own choices, their daily learning problems. The general problem seemed to be that the students did not possess options or incentives to construct their current learning strategy for their entire studies which originates and becomes managed by their own choices as their management of all daily rhythmic allows and demands.

All the students seemed to face problems in adapting to the educational conditions in their studies and learning. They faced diffuse and conflicting educational options and demands which they, by turning to dualist learning orientation, resolved by lapsing into surface learning, at least passively and tacitly. They encountered the educational and

tacitly deep surface-orientated objectives and lay teaching practices as disjointed and coercive when they restricted their learning to meet the objectives placed on them through formal evaluative exams of a student's theoretic knowledge, and through the teachers' normative instructions and evaluations of the normative learning outcomes.

3.5.2 Domain: pre-test and post-test changes in core behavioral competencies and in their concurrent deficiencies

As demonstrated above, the Anxiety Control Questionnaire's internal consistency in the three sub-dimensions is sufficient only in combination of threat and emotion control (pre-test 0,80; post-test 0,84) and as the total score in ACQ. In Table 3 the students' aver-

Table 3. The stability of the students' anxiety control in the Anxiety Control Questionnaire as a total scale, means and (standard deviations), N=20

total score			scores in emotion and threat subscale		
pre-test	post-test	effect size	pre-test	post-test	effect size
2,99 (1,06)	2,99 (1,01)	0,0	3,03 (1,06)	3,30 (1,03)	0,25

age total scores as a group mean indicated no improvement or decrease in the students' anxiety control competencies whereas in the combination of the threat and emotion subscales there was a moderate increase in functional anxiety competencies. The differences in the students' real stress conditions and their apparent difficulties in managing their increased stress before completing the semester's educational tasks diminishes the moderate positive impact of the program, as it emerged between pre-test and post-test means in the emotion and threat combination scale. However, the positive outcomes in higher means might not have been persistent even in a half-year's time span, as Tables 4a and 4b demonstrate. In higher educational objectives it is possible that the students' behavioral

Table 4a. Pre-test and post-test changes in anxiety control (combination of threat and emotion control, 11 ACQ-items out of 15), N=17

pre-test		**follow up***		
mean	**s.d.**	**mean**	**s.d.**	**effect size**
3,00	0,88	2,89	0,95	-0,12

* follow up after six months

Table 4b. Changes in total (emotion, threat and stress control; 15 items) anxiety control in group C, the students' frequencies, N=20

		pre-test					
		weak	**moderate**	**good**	**total**	**the change's direction****	
post test	weak	2	1	0	3	lower	8
	moderate	1	3	3	7	stable	3
	good	1	2	7	10	higher	9
	total	4	6	10	20		20

* scoring: weak anxiety control = the students' mean below 2,50; moderate anxiety control = the students' mean 2,50-3,00; good anxiety control = the students' mean 3,01 or more

** the change and its direction; stable if the difference in means between pre-test and post-tests is 0,30 or lower; if not, either lower or higher

competencies would decrease in a longer time span when their stress in adulthood and vocational life gets stronger without receiving special coaching and other therapeutic support to face their challenges. Nevertheless, the students' vitality in core behavioral competencies seemed to remain weak in a number of the students, and the divergence in their competencies seemed even to increase. It demonstrates that the educational programs were inefficient in supporting the growth of all the students' reflective behavioral competencies in all three divergent competency levels and realms.

From this scaffolding and the practitioner's CBT practical position it was conceivable that the students did not find space for their individual personal development and they got stressed in their quite coercive surface learning activities in this educational practice. It indicated that the students' studies were theoretic and normative, which triggered the students' non-reflective, mindlessness activities; especially, it threatened their personal development in basic reflective competencies to handle emotions as tacit, subconscious automatic thoughts by reflecting metacognitively on them. The main outcome depended not only on the situational and environmental contingencies: generally these kinds of behavioral core competencies in managing one's anxiety lay matters are relatively stable as the practitioner has noticed in psychotherapeutic practice with clients with anxiety problems. In this questionnaire a client with anxiety disorders in quite various symptomatic behavioral manifestations often gets mean scores below three, and when she has somewhat recovered then her means are generally above three. This was not the case among a half of the students.

In this project, the students' means in the anxiety control were used as an index of evaluating pre-test/post-test changes, because behavior control is relatively stable in non-clinical populations, and it can be interpreted as an indicator of improvement or decrease in the basic individual competency to perceive spontaneous control over one's daily behaviors and its challenges. It was safe to conclude here that standard deviations at approximately 0,60 indicated real changes in a student's anxiety-control competencies if pre- and post-test changes are 0,30 or more in either direction. Along with this interpretative vein, it could be said that changes occurred in both directions, although 60% of the students with both pre-test and post-test measures demonstrated no changes in anxiety control. The conclusion was that the students had fairly large divergences in their basic self-regulated behavioral skills and competencies were persistent at an initial level, for which this program (as all other concurrent educative programs) had no effect in either direction. Decreases in the students' anxiety control (and at their initial high competency level) were expected because the students' evaluation in the pre-test was frequently less reliable than when they, in this learning program, became more consciously aware of more individual contexts in all kinds of emergences of their discursive intellect. The students evidently were working with their idealist, undifferentiated and other features in their self-conceptions and conceptions to all human behaviors to which deep learning matters they encountered for the first time in this program's behavior monitoring position. Decreases in anxiety control might have indicated an improved realistic conception of one's intrinsic metacognitive skills and would be conceived as a positive sign of the project's positive impact, regardless of the slight decrease in means in the students' functional behavioral competencies.

The following conclusions were made regarding the changes in the students' anxiety-control competencies. Firstly, the research program would only have positive outcomes, if the program were positively correlated with the positive changes in the students' basic competencies in anxiety control. However, this relation was not linear due to large individual varieties. Secondly, a student's understanding of her perceived control competencies obtained a more valid basis at the end of the project because when starting their studies all the students did not have an individual understanding and comprehension of the deep uncertainty and anxiety behavioral issues. There emerged results in the student's deepened understanding of uncertainty psychologies, as well as a slight improvement in the students' competencies in anxiety control, but these contradictory outcomes annulled each other too. Therefore the conclusion regarding the impact of the psychology program could not be deduced directly from the group level correlation and it was not possible to evaluate which of these contradictory impacts was the most important. Rather it seemed that both these outcomes (either slight decrease or rather stable pre- and post-test means in anxiety-management competencies) had the same positive meaning or effect from the program's positive impact on the students' anxiety-control skills and competencies.

As shown in Tables 4a and 4b, there were no significant and regular tendentious changes between the two measurements. Generally, and based on the practitioner's personal experience in psychotherapeutic clinical work, it was possible to estimate and conclude that moderate or weak means in the total scores of anxiety control demonstrate an individual's insufficient behavioral competencies to manage reflectively with dynamic and academic educational and all daily social challenges. The moderate or weak anxiety control of a great number of the students indicated that disruptions and threats in their reflectively managed anxiety control caused stress and avoidant behaviors in the students, and disruptions in the daily educational practices needing managerial attention and special ventures which impaired the rise of a more free reflective educational life. It is worth noticing that five students did not actively participate in the teaching program and it indicated the students' deficient skills in managing uncertainties and anxieties in their new living and educational tasks that they had just started to encounter. Weak skills and competencies in anxiety control indicated a limited focus on one's attentions and impoverished interpretations, evaluations and rigid schematic behavioral orientations becoming exemplified as one's avoidant behavioral patterns in managing one's experienced uncertainties under changing living conditions. It seemed that a student's reflectivity to manage uncertainties in real constrained and changing social life did not increase, with a few exceptions, as is evident this behavioral capacity cannot develop spontaneously without adequate self-practicing, and the practicing requires adequate learning conditions and incentives. Therefore, the third laboratory research work was not yet completed but must be revised in the next teaching projects. Although it was successful in its practical fulfillments for initiating the students' active self-regulated learning at home, this did not occur frequently in all the students for a variety of reasons. To address these problems here it is necessary to turn next to more elaborated case and subgroup analyses.

The students with poor or weak anxiety control at the beginning of the course did not benefit from the course in the metacognitive competence frameworks. At the beginning

the students who had, and demonstrated, developed skills possessed the same competency levels at the end of the course. However, this interventional program was completely successful either in sustaining or in strengthening their functional behavioral competencies in all the three student subgroups. The students' competencies either remained the same, or at least the individual competencies were seen more realistically at the end of the course. It indicated that this program was workable for all the students' studies. Nevertheless, as their divergent and in some subgroups weak completion of home-exercises indicated, this program was not taken seriously by all of the students, as was conceivable in the dominant instructive educational practices.

As there are psychological multilayered and contradictory mechanisms at work in human self-regulation, the generative mechanisms at work could transform themselves into dysfunctional directions. Evidently, the empirical research work on anxiety problems and emotional disorders is a crucial basis for delineating human individual control and behavior in psychological conceptions, along with the philosophical line of synchronic, emergent powers materialism.

3.5.3 Domain: the vitality of the students' reflective problem-solving competencies

Within the research setting, there was no extensive empirical data to be gained for a demonstration of the strength of the students' reflective behavioral competencies to which the concept of vitality refers to how an individual in her concrete singularity moves on reflecting all of the behavioral determinants of her polyvalent constrained life, such as the critical realist conception of dialectical universalizability via a multiple quadruplicity of concrete singularity (Bhaskar, 1993, p. 209) exemplifies. There are other measures, useful for that purpose, for example, the Toronto Mindfulness scale (Lau et al., 2006), which is short and thus it would be within the students' capacities to complete in the constructed pre-test/post-test settings. Unfortunately, it was not yet available and its reliability might be low in the educational practices contrary to true psychotherapeutic practices due to its apparent social desirability problems. Here, when the students' mindfulness spontaneous reflectivity is often weak, it would not be reliable for the pre-and post-test measurement purposes. It was reasoned that the RRS questionnaire could be optimal for measuring the student's functional and dysfunctional behavioral tendencies but as already affirmed above this was not the case.

The stable condition of the students' modalities to reflecting The Ruminative Responses Scale (RRS) was deployed for potential pre-test/post-test changes in the students' behavioral patterns, with regard to their reflection and its divergent behavioral modalities. It could identify the students' moderate competencies in reflective pondering and demonstrate the students' tacit potential behavioral tendencies to depressive reflection and ruminative reflection. However, the measure was not adequate in depicting the students' significant individual differences in the changes of the three modalities, because rumination and reflective pondering subscales were not reliable in the pre-test measurement. Only the depressive subscale was reliable and internally consistent, both in pre-test and post-tests as was the total RRS-scale but this latter fact was because of the scale's largely distorted distributions across all the items. Regarding the stability of these competencies,

it seemed that the students saw their inherent behavioral tendencies more clearly in managing their intrinsic emotions after completing this learning course but the measurement had weak discriminative ability even in the post-test measures for single-case analytic purposes.

The main conclusion from Table 5 states that the students' reflective pondering was weak at the end of the program, as was evidently the case at the beginning of the course. Although the students factually did not ruminate manifestly but rather moved tacitly into other safety-seeking activities in managing their rumination and worrying behaviors, their behavioral patterns were both stable and fragmented behavioral chains in goal-oriented behaviors. These kinds of behavioral moments are reinforced by instructive teaching practices that seem to keep the behavioral learning conditions stable and prevented the students from further development of reflective pondering or broad reflection. The students in their pre-adulthood with low and diffuse self-conceptions and encountering the emotivistically driven, normative teaching discourses and other practices were not in a position to enhance their assertive behavioral and metacognitively managed, dynamic behavioral patterns. With minimal risk taking in their studies they continued with their surface learning styles and therefore at least latently and unintentionally they reinforced the existing surface learning and teaching practices. It was not feasible to draw deeper conclusions regarding the psychological mechanisms, maintaining the students' general, distinct and passive behavioral patterns, and weak vitality in reflective mindfulness activities.

Table 5. The stability of the reflective pondering domain (five items in the RRS-questionnaire), N=23

	mean	s.d.		mean	s.d.	effect size
pre-test	1.78	0,73	post-test	1.81	0,65	0,04

The measure has proved to be valid and stable in clinical clients (Bagby et al., 2004); however, it did not possess the required power for differentiating the students in rumination and reflection, with these two separate behavioral and mental constructs. For example, it was not simple to assess even in a single-case analysis, why reflective pondering noticeably decreased in two students, whereas it improved only in one student. These results are not presented here; one aspect would apparently require more research into flawed and abstract generalizations that might have drifted into the classroom teaching discourses.

The stepwise written protocol to reflective problem solving was devised from divergent cognitive-behavioral procedures to instruct clients to improve practical problem solving in one's daily management of one's real daily rhythmics. One's rumination and worrying disrupts and impairs one's problem solving not to speak of reflective problem solving as is the focus here and has been determined in countless empirical studies. The constructed record could demonstrate a student's social conditions and her behavioral competencies in the design of her daily behaviors under contradictory forces and world lines. It was thought that the record would indicate and demonstrate the students' abilities to reflect and to draw adequate conclusions about the impacts and consequences from their divergent behavioral programs under changing social conditions. In real life, there is no fixed

and general subjective or objective formula to manage real contradictory and opposing forces and powers of the polyvalent changing world. The individual can continuously find herself in a situation that requires her to take an individual strategic and behavioral and actionable approach to her living conditions. This measurement does not initially indicate any theoretical problem-solving ability. Its purpose was to form a conception about the strength and flexibility of a student's behavioral control in her metacognitive thinking in her management of the real constrained living conditions, inner desires and constrained intrinsic plans of the ways to act. In that reflective problem-solving behavioral realm, individual living is not a passive adaptation, but it emerges as one's somewhat impaired and broken activity plans for planning and building mutually exclusive plans and activity programs for their fulfillment.

The empirical results in Table 6 show that a third of the students in group C were not able to pass the crucial task of creating actionable plans in the post-test as was a successful solution in step 4 for a current living problem within the time limit of 20 minutes. The students' heterogeneity in reflective problem-solving abilities in real life was enormous, and its divergence remained constant in the subgroup of the students' with moderate initial competencies.

Table 6. The students' success in solving the written six-step reflective problem-solving procedure; the percentage of the successful solutions (yes/no) in learning group C (percent of students, N=25)

	1. labeling of one's daily hardships	2. utilized pie chart method in evaluation of the stressfulness of one's daily hardships	3. successful invention of main living strategies in managing one's hardship(s)	4. consistency of one's living strategies in managing one's hardship(s)	5. plus-minus evaluation of the most actionable behavioral strategy in managing one's daily hardship(s)	5. plus-minus evaluation of the most actionable behavioral strategy in managing one's daily hardship(s)
pre-test	100	100	83,0	50,0	20,8	8,3
post-test	100	100	95,8	66,7	62,5	62,5

For example, a third of the students in this group did not reach any conclusion of the most preferable and adequate activity programs in this design. It indicated the students' moderate action-state orientation and strong state orientation to their behaviors under these contradictory living situations and it was conceivable and understandable from the practitioner's perspective because the students' seemed to fail to manage with, and integrate with, their inherent objectives and external educational social demands in their daily behaviors.

The main result was that the students generally strongly consolidated their reflective behavioral competencies as was the ethical educational aim and practical stance in this course. The students improved their problem-solving abilities and skills significantly in viewing their broad and constrained living conditions as contradictory and requiring metacognitive evaluations and action plans that must be practically managed in one's real life. Thus the students developed basic skills in reflective problem solving, but they did not necessarily possess possibilities for functional and dynamic management of liv-

ing problems while living in ambiguous and contradictory social situations. In summary, all the students' functional competencies seemed to increase significantly during the course, but there was still much to be done before reaching dynamic and innovative learning and doing in at least one third of the students with more weaknesses in their daily behavior management. These students obvious adaptability in their daily management and behaviors often indicated their passive behavioral patterns that were exemplified as their broken problem-solving activities in some nodal points and as their difficulties to maintain internal consistency and coherence across disparate daily actions and activity programs.

3.5.4 Domain: the nature of the students' end-state divergence in behavioral core competencies

From the researched behavioral constructs by means of the students' scores of the CBT questionnaires a factor analysis was performed and it affirmed the vast divergence in the students' behavioral competencies (Table 7). Although the deployed CBT questionnaires were not totally similar to the questionnaires in the second research project the factor structures brought out three subcategories regarding the students' behavioral competencies thus giving deep psychological explanation of why the practitioner's task to enhance the students' deep learning activities was practically so arduous or even impossible to manage. First of all, the relatively low scores of at least half of the students in the ACQ questionnaire indicated that these students tacitly lapsed into their despaired limited self-reflection. It is a pivotal deficiency in these students' behavioral patterns that impairs their managing their behavioral uncertainties in their concurrent and intensive on-task performance activities.

Some of the students seemed to persevere with ruminating and worrying behavioral patterns, without engagement in strategic learning but they performed some learning activities as instructed by the teachers (factor 1), whereas other students performed deep learning in their broad reflection in managing these dominant diffuse and fragmented learning environments (factor 2). The third subgroup of the students lapsed into diffuse and surface learning, which meant no patterned persistent learning, but tacit and rich armories to specific safety-seeking behavioral activities (factor 3). It is important to note that the ACQ and the RRS indicated no improvement in the students' basic reflective competencies, not even with the students with intensive and flexible self-regulated learning activities because total ACQ and deep learning belonged to divergent factors. As seen in factor 1, reflective doing seemed to be conflated with, and undermined by, the students' worrying and limited self-reflective behavioral patterns. Thus, it was logical and functional from the students' points of view that their learning did not emerge as more manifest learning styles of any kinds under the dominance of superficial and normative teaching discourses.

The student's seemed to be too divergent in their specific and mutually disparate behavioral competencies to gain essential improvement in their deep learning activities to manage many products and processes in their daily life. It was already discovered in the

Table 7. Factor analysis of the applied CBT questionnaires at the end of the teaching program in group C, N=24 (Varimax solution)

	Factor 1	Factor 2	Factor 3	communalities
ACQtot	-0,70	0,07	-0,01	0,498
deprRRS	0,82	0,07	-0,23	0,740
ruminatRRS	0,77	0,24	0,09	0,654
reflectRRS	0,48	0,45	0,12	0,454
deeptotal	0,01	1,22	-0,15	1,505
surfacetotal	-0,02	-0,04	0,73	0,541
eigenvalues	2,33	1,44	0,62	
variance explained by factors	53,1	86,0	100	
percent of total variance explained	38,9	62,9	73,2	

Factor 1: Despaired and conflated reflection with weak and diffuse learning behavior
Factor 2: Tacit strong self-regulated behavior and self-regulated learning orientation
Factor 3: Diffuse behavior management and strong safety-seeking avoidant patterns
Measured constructs: ACQtot= total score in the ACQ; deprRRS= Depression construct in the RRS; ruminatRRS= Rumination construct in the RRS; reflectRRS=Reflection construct in the RRS; deeptotal= deep learning dimension in the Two study process questionnaire; surfacetotal= surface learning dimension in the Two Study Process Questionnaire

second research project but in this research project it became elaborated in the real teaching practice by means of scaffolding of their daily learning behaviors. A large number of the students lapsed into worrying and rumination such that it was necessary to take into account the learning objectives of the students' studies about vocational psychology. A tacitly worrying lapsing student is not capable to work through her own reflective behavioral activities but leans on learning of theories as an outsider. She superficially sees what is happening but is unable to take a stronger behavioral stance in doing personally something related to the problem situation at hand. Primarily this kind of surface learning was exemplified by the students' reading of psychological texts in which they selected disjointed knowledge or conceptual fragments. It is necessary to note that a number of the students with weak learning activities in surface learning primarily concentrated on their entire daily management in their private life under stressful living conditions, as discovered from the student's written home tasks and from the other recorded data. These students and the students with insufficient social and other living competencies did not engage regularly in any specific and intensive compensative recreational activities or possessed no recourses to acquire them actively.

3.6 Conclusions: successful implementation with insufficient outcomes

The procedure of integrating various CBT treatment protocols into a student's homework and self-monitoring by recording means was successfully implemented and it changed the teaching discourses to more collaborative kinds with basic trust. The program in scaffolding a student's learning was applicable for all the students in their concurrent studying of their vocational psychology and it did not further weaken their studies, as was slightly the case with some students in the second research project. It was important not to cause additional stress, which might have led to a student's despaired thinking and rumination and which might have impaired their reflective problem solving.

That is why home exercises in CBT treatment means and all learning activities were voluntary, such as attending lessons or taking the questionnaires. When the students were not concurrently and continuously instructed to take their behavioral learning acts they encountered a somewhat more stressful learning situation in their psychology studies. Here, the practitioner's instructions were succinct and primarily literary not oral the philosophical core of which was: "One's learning is problematic, when we worry in our daily behaviors, we may behave in ways that bring out behaviors which may turn out to be discrepant, opposite or unbeneficial in relation to our initial goals and objectives to do learning and daily living. By doing some behavioral activities I could be the most crucial and challenging opponent to enhancing my functional behaviors". The students were told on various occasions that these records can help them to develop their learning styles and problem-solving behaviors and learning under real life conditions. The teaching program might support the student to create an active commitment to, and an acceptance of, difficult learning issues and the course could provide a student with means and tools to manage with her daily load and stress.

Compared to the instructive teaching and to finding means to have co-operative discourses during lessons the scaffolding was practically executable in directing the practitioner's flexible management and implementation of specific endeavors in his daily teaching to the most important tasks. For the practitioner it provided CBT-informed scaffolds in tailoring the program to promote a student's real daily learning and no negative impacts of the teaching program's execution on the students' learning emerged.

However, the students' safety-seeking behaviors in their partial and tacit forms were not a simple task to challenge adequately, when the young students lacked social skills for assertive behaviors (there is not much assertiveness training for nurses in nursing studies: nurses are mainly pacing their behaviors to the modes of each client, while supporting the client's behavioral modes). As seen from the results (see the summary in Figure 4, p. 377), only half of all the students frequently and persistently performed their home-records. It seemed that safety-seeking behaviors were either deeply rooted, or strongly reinforced by the instructive teaching practices (or both) in the students' daily stress-management strategies. When there was not a consolidated practice to provide each student with targeted feedback in her search of the ways to behave, a large number of the students continued with their safety-seeking behaviors as before. However, the main task of the teaching interventions in this study was to find out whether the designed CBT methods were workable to become incorporated into the teaching procedure. The result was positive; the treatment tools of the students' self-monitoring of their learning and daily behaviors were beneficial to all the students. They were beneficial even to those students who experienced difficulties in pacing their active learning activities to the general learning process, as required in the open and dynamic teaching procedure in psychology studies.

4. VALIDATION OF GROUNDS FOR A FURTHER SCAFFOLDING OF THE STUDENTS' LEARNING

4.1 Cbt monitoring records validate a student's real behavioral learning patterns

An extraordinarily broad stance in behavior monitoring exercises as well in the practitioner's expanded behavior assessments of the students' divergent daily (learning) behaviors seemed practically to be an optimal work objective in teaching the students with divergent problem-solving competencies. The scaffolds provided a theoretically sound psychological explanatory reframe to practical scaffolding of the students' learning in an attempt to enhance the students' metacognitive competencies. It was verified that two student subgroups (the actively worrying students on the one hand and on the other hand the students with lagging identity development and generalized avoidance with weak on-performance activities) had behavioral deficiencies in managing anxieties by turning to rumination and worrying behavioral patterns. A student's behavioral deficiencies were tacitly initiated and were generated in any dynamic learning environments that required a student's own strong action orientation in her contextual learning. Teasdale and Barnard's (1993) theory elaborates the stance of one's proneness towards depression, to which Matthew and Well's (2004) S-REF theory on rumination, depression and metacognition serves as the informative scientific basis for implementations of the teaching program and its scaffolds, and the same theoretic stance provides means for reaching at concluding arguments of the validity of the research endeavors which emerged as empirical outcomes in single case, subgroup and group analyses. Specifically, the performed factor analysis on the relations in individual behavioral dimensions established (Table 7) that the divergence in the students' reflective competencies is significant but latent, and not observable to a lay teacher without deeper assessment tools and without specific means in collaboratively executed teaching.

The psychoeducatively and thorough coaching-executed CBT treatment protocols did not produce perceptible or significant impacts on the students' behavioral competencies, either in the decrease of the students' behavioral impairments in core behavioral competencies (the ACQ), or in the increase of the students' adaptive behavioral competencies (reflective pondering sub-scale in the RRS questionnaire). Although the students generally hugely improved their self-regulated behavior activities (the written problem-solving procedure), in the vast majority of the students the improvements in reflective problem-solving activities did not extend to their more functional behavioral programs in managing their daily rhythmics, such as not lapsing into disjointed daily activities in their continuous daily learning. However, this massive scaffolding of the students' learning was executable in these educative practices and did not cause any dysfunctional stress to the students' daily living and studying. Unnecessary stress was avoided by the successful management and sincere collaborative working position because it was possible to devise each student's own learning objectives in response to individual learning obstacles encountered by the students. The students' learning template was dynamic and elaborated through its psychoeducational and virtualia-managed teaching practice, and its practical execution did not collapse under the students' emotional expressions or crucial pitfalls in

their learning activities as was commonly the case in the instructive teaching practices. Evidently, the anxiety and uncertainty subjective learning issues became more often managed by the students' strong on-task performance activities the learning objective of which becomes directly excluded in dualist instructive teaching of psychological matters. The students' anxiety-related feelings were encountered in the students' real learning behaviors and not by theoretic and normative guides as in the original dualist position to teach about human psychology.

The pre-test/post-test measures did not possess sufficient discriminative ability in measuring the small-scale changes in the students' behavioral competencies and deficiencies, or in the students' learning activities. However, there were no easy paths towards deploying other CBT questionnaires into the pre-test/post-test setting, which would be short and possess a differential ability to discern deep behavioral competencies behind ruminating and worrying behaviors and behind mindfulness behaviors. In that sense the RRS questionnaire contains the ability to verify the students' existing deficiencies in anxiety management but it does not provide an accurate picture of the students' mindfulness competencies and of the potential changes in the students' competences during the psychology course.

Although the CBT questionnaires were not valid in measuring small incremental changes in the students' behavioral competencies, there were other minimal positive changes observed and recorded by the practitioner as the students' increased self-regulated learning activities. Although there is not additional empirical data to verify how important it was to challenge the students' dominant orientations to superficial learning endeavors, transformative changes in lay educational practices did emerge from the real learning and teaching contexts and not from specific operant managerial endeavors. The program's successful execution was a positive empirical outcome in itself because it demonstrated and proved that the vast majority of the students at least partially performed all the required learning activities in the course, albeit the program was more rich, flexible and more individually-orientated thus it initiated and promoted a student's own responsibility in taking on her real learning behaviors when her learning was deeply passive and superficial. Therefore theoretically reduced and specified minimal positive changes in the students' behavioral competencies were not of the greatest importance because they were not sufficient to cause positive and remarkable changes in the students' self-regulated learning. Instead, of great importance is the program's positive outcome and finding that this kind of self-regulated, initiating learning template did not cause remarkable stress on the students in spite of the fact that the program was more demanding for the students in its meager formal norms to their learning and dynamic integrated classroom and homework execution compared to their other concurrent studies.

The main outcome of the (weak-strong) state of the students' deep behavior control competencies (anxiety control before all) confirmed the empirical outcomes that were already attained in the second research project. The real condition is that in these students' groups in nursing studies, the largest subgroup of the students' behavioral competencies were weak all along and still remained weak or moderate at the end of the program. The results are valid, parallel with the second and third research projects. They

indicate that the students are in need of enhancing their basic functional behavioral competencies, which is at loggerheads to the deeply dualist and theoretically directed and emotionally driven communicative discourses. Behavior monitoring exercises did not have much effect on the students in terms of bringing back a student's spontaneous reflection on her real daily behaviors. The executed recording devices and CBT-driven tools had only a psychoeducative and preventive purpose and their effects on the students' well being were positive. The primary reason why there was a relatively small efficacy in changes in behavioral competencies was not the treatment, educational or other formats in the exercises, but their insufficient and collaboratively managed practicing; only some of the students were able to extract intensive, repetitive and improved use from the four-mode behavior monitoring recordings. The students' learning styles as self-regulated learning or as deep learning behaviors did not improve sufficiently to enable them to re-challenge and revise their daily learning on and from surface learning activities. This is logical, keeping in mind that most of the students failed in the continuous and repetitive application of the behavior monitoring exercises in spite of their apparent individual needs for continuous daily practicing, and those doing exercises with few exceptions were not able to perceive their improvement and the utility of persistent training. Therefore, it seemed that the students frequently did succeed to do exercises and self-recording techniques in the manner of their initial learning style and orientation, and take full advantage of the self-recording techniques in daily learning; some students who experienced other learning difficulties in self-regulated learning and who studied less frequently did not complete the records or they completed the records by their surface learning patterns and by trying to incorporate psychoeducation into the exercises as a formal instruction.

These individual strategies in performing monitoring exercises also confirm the students' deficiencies in reflective problem solving, while not adequately differentiating in their recordings their contextual arousals they exposed themselves to worrying by turning to safety-seeking activities, such as thought suppression, and lost a metacognitive grip on their on-task behaviors. Identifying and challenging one's thought suppression might not yet be a feasible task, at least not in this teaching program and via the scaffolds, at first it seems more important to generate a stronger basis for the students' on-task performance towards academic studying activities at least in one of the three subgroups of the students if possible in the next projects. It seemed that in the next teaching projects that only one of the subgroups of the students would be able to continue with deep learning activities, if there were real incentives to these kinds of learning to be set up by revising and refining the scaffolds in behavior monitoring means. The other subgroup of the students with lagging identity development and with spontaneous and rigid safety-seeking behavioral patterns could contradict the feasibility of these kinds of endeavors if these students engage in activities that sabotage the execution of the teaching of psychology via these kinds of scaffolding of a student's learning via CBT treatment means and exercising protocols. These students by their disjointed or even premature behavioral patterns in their learning without active worrying and rumination but with restricted attention and concentration, through over positive or exaggerated reasoning and inten-

sive social support seeking and so on might make the execution of these kinds of scaffolds in ordinary teaching of psychology impossible.

As expected from the beginning of the execution of the behavior monitoring exercises, the students experienced various cumulative difficulties in the home recordings and in taking advantage of them in their concurrent learning of psychology. This additional scaffolding via behavior monitoring exercises has produced positive outcomes, which are not reported specifically as, for example, what was each student's individual execution, where it has failed, and how she managed to continue with further recordings.

The students' initial position to their evaluations and to taking a reflective and mindfulness stance in their daily rhythmics and daily tasks and activities was generally weak, with a few exceptions, and by providing means to their confrontation this modality approach to behavior monitoring was the most adequate in comparison to other educational means. For example, in the lay teaching practice there were no opportunities to reinforce a student's repetitive practicing by the practitioner's supervision, because the students did not frequently perform and validate any of their behavioral broken patterns in their learning through the behavior monitoring records. In any case they learned at least loosely the preventive idea of the importation of the CBT treatment tools for improving one's problem-solving behavior on a daily basis. In the learning tasks in behavior monitoring designs the students experienced difficulties in taking advantage of the entire learning process in the psychology course, which required a completion of, and then gradually sharpened focus of, the recordings of their pitfalls in the learning and daily living throughout the psychology course. These individual problems to engage individual learning activities in studies on human nature were addressed all along in classroom coaching. However, coaching was not sufficiently accomplished because there might have been more individual collaborative supervision of each student that remained rather loose, as became accounted for in the fourth research project and in the discussion part of the report. As discovered, a third of the students did not attempt to take advantage of the behavior monitoring, a third completed them more often by their instructive and surface learning modes, and a little more than a third of the students demonstrated at least some positive outcomes in their search for, and remodeling of, their behaviors through recording devices.

The execution of the teaching program shows that the students seemed to experience obvious difficulties in understanding the practitioner's suggestions and tailored feedback for their further improvement, because that supervision was not made in pure instructive guides. The students tacitly expected to have in direct form how well they were managing in behavior exercises. When this feedback was not identified in the practitioner's virtualia-managed feedback (cautiously articulated suggestions about the most feasible learning steps and patterns) they often neglected the entire feedback and became frustrated when facing the practitioner's divergent and many suggestions. Due to the students' difficulties to validate their current behaviors in relating it to all their daily rhythmics the practitioner had only short and restricted opportunities to assist and encourage a student in these exercises and re-evaluations of her daily and learning activities. For example, if the student's worries and potentially diffuse and normative behavioral activities were attributed to her difficulties to learn in regards to deficient teaching methods

and the practitioner's personal characteristics, then she appraises her behavioral determinants via the dualist and modern interpretative reframes which undermines the rise of her own on-task performance activities. A practitioner's feedback of any kind might increase a student's emotional generalizations that, albeit increasing immediate mild alleviation from one's despairs, could initiate stress and worry experiences at least in the short term. This problem is neglected entirely in instructive teaching and tutoring teaching discourses because the ontological dualism between 'me' and 'other social and material things' easily becomes technically and normatively resurrected by the learner. Worrying behavior indicates that a student commits abstractive generalizations, which exclude her from contextual 'out of the blue' activities, and therefore rigid and disrupted behavioral activities can take a dominant place in her behaviors. That is a lesson from postmodern psychologies; they show that human self-reflection can consist of abstract flawed generalizations.

In dialectical critical realist terms individual safety-seeking behaviors as a student's absenting or negating acts and activities (see from a critical realist position in Bhaskar, 1993, pp. 4–8) disrupts and biases a student's validations of her recent learning behaviors. It is the main problem that was only partially solved in this project but it was adequately addressed in this teaching program. In this project, a student's behavior monitoring devices did not provide direct means to, or in their real practicing did not turn her to, tacit appraisals and evaluations of her anxiety and despaired feelings, and thoughts as negative that needed direct absolving through safety-seeking and learning undermined specific activities exemplifying weaknesses in their mindfulness or metacognitive behavioral competencies. Therefore, the recording procedures successfully introduced new behavioral resources to the students and the entire behavioral procedure in recordings was adequate because of its four tentative and in CBT-conceptualizations, sufficiently broad position to individual daily rhythmic. The procedures guided a student to start from individual evaluations of daily rhythmic and then gradually proceed to specific techniques in evaluating, accepting the current state of their social and educational life and for the envisioning of, and embarking on, new creative daily learning activities.

It is a difficult practical task for the practitioner to support a student's on-task performances that are embedded in her avoidant activities, such as worrying, in the teaching practice to the introductory course in vocational psychology. In these social learning and teaching contexts, worry, as Nolen-Hoeksema and Davis' (1999) research demonstrated ('Thanks for sharing that'), can be socially favorable and it is positively reinforced by instructive teaching, because emotional discourses are the extrinsic motivational incentives for the students' initiation of their surface learning. However, the core of the instructive teaching objective to 'share with me' does not necessarily initiate a student's metacognitive validation of the feasibility of her 'sharing' or other activities in learning, in critical realist terms the approach lapses into social constructivism which occludes the very issue of reflective human authentically arisen behaviors. Instead of lending direct support to a student's conceptions of her executed initiatives in learning, the practitioner attempted to direct his feedback to the students' real learning activities. In this supervision, the constructed exercises and applications of pie charts serve as an appropriate basis

for her assessment of real challenges that cause real worries and/or imagined non-real worries and its safety-seeking activities in their real dynamic behavioral realizations.

4.2 The intensification of metacognitive, behavioral monitoring records in teaching

The students' self-regulated real behavioral competencies remained generally moderate (indicating crucial pitfalls in some students) and divergent in their initial level, and in the critical realist position to open social constrained life and having more freedoms, and this informs that for students' this is the other side of the coin of the dual teaching–learning practices which maintain instructive teaching and surface learning practices in the nursing studies. The students' learning patterns remained mainly as surface learning during the course, and that learning seemed to increase significantly when the students' encountered new challenges to pass courses at the end of the semester. The program in behavior monitoring means was necessary because of the students' discrepant learning competencies if the educational objective of students' reflective, innovative work in nursing was to be maintained at all. The implemented scaffolding template to the students' learning also offers practical options for its further tailoring in the next project. The empirical outcomes in this research demonstrated that the endeavor towards the search for an optimal laboratory program for the students' learning scaffolds to their studies in human vocational psychology has not yet been accomplished.

The innovative implementation of organizing the template for the students' to validate their actual learning as their real as well as the pre-test/post-test research setting was successful. The software-managed basic template to teaching and learning paves the way towards further scaffolding in the next research project, if it is justified as practically executable. Hitherto, the only way to perform emancipatory-orientated research of the concurrent teaching practice is to separate the research from the execution of the teaching program. It ensured that the students do not lose their critical-informed self-regulated basis in completing the CBT questionnaires and other measures as an honest view to their recent and concurrent behaviors. The practitioner was careful not to lapse directly into the setting up of ordinary dualist research approaches, such as theory and abstract-norm deduced scoring of a student's learning outcomes and their superficial behavioral patterns. The latter approach is the dominant evaluative social practice in nursing education and it manifests in the trinity of surface learning, instructive teaching and learning of theoretic norms of professional work. The practitioner's practical steps to challenge and rectify educational norms were insufficient, as demonstrated for example in the students' dualist stable and fragmented studying styles.

However, in spite of the sense making of the practitioner's feedback of the students' learning outcomes and his supervision of their learning, their learning behaviors did not improve drastically under the practitioner's supervision because of the students' shortcomings in the exercises. Collaborative supervision of a student's behaviors, such as an empirical validation of her behaviors by re-questioning and tentative suggestions via a software-learning template was often too challenging for her. The selected strategy in providing feedback and suggestions to a student on her learning behavior was adequate because approximately a third of the students with more developed functional behavior

competencies were able to use the practitioner's feedback and to perform their behavior monitoring exercises on a continuous basis. There is an enormous increase in the students' ordinary learning patterns into self-regulated directions: it seemed that the increased use of the records and the practitioner's supervision is not achievable only by allotting extra consultative resources. In the dualist and normative educational practices vigorous attempts to set up theory- or method-driven consultative practices might represent only a recourse to ordinary and dominant surface and instructive teaching practices. The more practicable option is to proceed by scaffolding the students' learning via behavior monitoring means, also it is optimal in economical, human developmental or in any other respects, if accomplished via the CBT-informed, practical templates in the teaching of psychology.

IV. Optimal behavioral interventions for the enhancement of the self-regulated learning of worrying students

Abstract

The three previous research projects established the practitioner's strategy for teaching psychology in nursing programs by scaffolding the students' learning behavior in large groups with divergent learning competencies. The cognitive behavior-monitoring stance that was derived using a critical realist approach and CBT treatment means was gradually constructed in three previous research projects through its reformulation and refinement. This is researched in this project via the deployment of confrontational CBT methods to address the students' tacit worrying and safety seeking in their learning of psychology.

In the third research project, it was empirically shown that students with weak reflective behavioral competencies and dominating surface learning practices resorted to tacit worrying and rumination, which initiated safety-seeking activities, such as thought suppression. Since the prevalent social educational practices were argued to be maintaining the dominance of obstructive teaching practices, challenging these structured practices and even bringing back the students' metacognitive learning becomes a demanding task for the practitioner as well as for students in curriculum-based teaching. A student's on-task performance reflection is conflated and enmeshed in her worrying, with its specific safety-seeking modes, and distrust impairs intensive collaboration.

A quest for the refinement of CBT-informed treatment methods for confronting the students' impaired reflective problem solving calls for the use of tailored behavioral monitoring exercises, and more specifically the introduction of more confrontational CBT treatment means to address the students' entrenched safety-seeking behaviors. If it could be managed in this teaching program of vocational psychology, it would guide a student to confront her numerous mutually conjoined safety-seeking patterns via behavioral experiments and exposure to treatment-related strategies by means of intensified collaborative teaching discourses.

In the fourth research project, the introduction of confrontational CBT treatment methods into the scaffolding program through behavior monitoring devices produced weak positive pre- and post-test outcomes in the students' core behavioral competencies in all the three large student groups, as was assumed and arguably grounded in this teaching program. It is argued here that scaffolding the students' daily learning via behavior monitoring devices and learning protocols enables the practitioner's rich execution of collaborative scaffolds for teaching and students' daily learning – such as psychoeducation and real-time virtualia collaborative supervision. The dualist social educational practices turned out to be strongly entrenched in their deep structures: as the factor analytic study showed, the students' divergent behavioral competencies prevailed at the end in each of the three researched student groups. However, the research project warrants the general conclusion that the practitioner's stepwise critical realist-informed scaffolding via behavior monitoring devices was the only means available for addressing the problem, and was partially successful in invigorating metacognitive learning in the students with disparate uncertainty and anxiety management competencies.

Key concepts: Coaching, behavior monitoring exercises, CBT therapeutic treatments in behavior monitoring, psychoeducation, supervision, rumination and worry, safety-seeking behavior, thought suppression, behavioral experiments, exposure-related techniques, basic behavioral competencies, CBT questionnaires

1. THE RISE OF A SCIENTIST-PRACTITIONER'S WORK TO TEACHING VIA SPECIFIC CBT TREATMENT PROTOCOLS

The critical realist-informed scientist-practitioner's stance to action research into student learning deployed here embraced all of the introduced CBT rooted and divergent behavior modalities. When a student learns superficially, this being caused by her latent rumination and safety-seeking behaviors, the practitioner needs to refine his assessment of the student's daily learning, which is possible via a rich scaffolding of student daily learning. For the practitioner, the scaffolding opens up rich data on a student's daily behaviors that enables an expanded functional behavioral analysis of a student's daily learning, at least at the student subgroup level. This shows, and in CBT terms explains, the students' vast divergences in their anxiety-related behavioral patterns, rendering them scientifically explainable in the CBT interpretative reframing of individual uncertainty and anxiety management.

The benefits of this practitioner's work in the scaffolding of a student's daily learning of psychology are at least two-fold. First, the practitioner has the option to retune his empirical research on the feasibility of practical teaching work. Second, by the practitioner's scaffolding of a student's learning via behavior monitoring protocols informed by behavior modalities, a student is encouraged and guided to abandon her perceived and identified impaired behaviors that interfere with and obstruct her reflective or self-regulated daily learning. The practitioner's objective in the successful scaffolding of a

student's learning is conceptualized as the rise and increase of each student's functional behavioral dispositions and tendencies. As was shown in the third research project about teaching psychology to pre-adult and adult students, the constructed multilayered, structured teaching and learning methods become executable in ordinary teaching practice as metacognitive, behavior-monitoring training protocols via the rich use of software. But can one revise and re-construe the scaffolds for a student's daily learning of psychology so as to meet optimally the official educational objectives and students' learning needs despite the disparate functional and dysfunctional behavioral competencies in the three student subgroups? As was found out in the third research project, it surely requires a practitioner's adequate behavior assessment of each student's divergent learning behaviors by giving deeper explanations of their behaviors, and his assessment of definition of the students' target behaviors as the sound objectives of the practitioner's laboratory programming of each student's daily learning in all the three separate student subgroups.

In CBT terms, a student's internal and external behavioral reactions, acts and actions become exemplified as her perceptions, interpretations, evaluations and meta-evaluations. This non-dual psychological perspective introduces a groundbreaking approach to the students' learning so that their potentially flawed metacognitions may become addressed and even alleviated via the specific CBT scaffolding means adopted. As seen in the third research project in large group educational practice, it requires the use of behavior monitoring means and their refinement for addressing a student's daily social learning. An empirical psychological research into the students' learning under their daily constrained rhythmics is not possible via theory- or method-driven scaffolding protocols. Therefore, the practitioner is deeply committed to his behavioral assessment of the students' daily behaviors and learning in order to have adequate and justified grounds for the implementation of tailored, CBT treatment protocols in his teaching of psychology. In a critical realist practitioner's stance to human emancipation, the practitioner's work objective of an advanced assessment of students' behaviors and social transformative practices opens up for him a template for constructing scaffolds for a student's real learning. Especially in nursing studies, a deep, educational, ethical, dialectical, critical realism-informed objective is to promote a student's abolishment of bad social constraints in her educational social life, which negatively affect her studies of psychology.

Nevertheless, valid empirical evidence is required to justify the practitioner's scaffolding of students' learning as valid and feasible, and it was gradually attained in the three previous research projects and more particularly in the third research project. The validity of the practitioner's initial assessments were based primarily on his observation of the students' classroom behaviors, and in the second research projects (and more deeply in the third research project) the practitioner's expansion of these assessments through his referential detachment activities with respect to a student's all daily learning behaviors became supported by the introduction of CBT questionnaires and by other data acquired by the introduced behavior monitoring exercises. By evaluating a student's targeted functional behaviors as real, vital and dynamic relations symptomatic of dysfunctional behaviors, the practitioner's performed behavioral assessment rendered feasible emancipatory practical research and teaching practices in the ordinary teaching of vocational psychology. The expanded functional behavior analysis and assessment of a student's daily learn-

ing behaviors expanded the practitioner's scaffolding through the behavior monitoring and recording of student learning, particularly in coaching a student into self-regulated or metacognitively managed functional behaviors. The practitioner's initial aim in scaffolding each student's learning was to provide guides to enable her to generate new basic metacognitive mindfulness competencies and behavioral social skills. Empirical research was required on the feasibility of the executed scaffolds, and it was not possible to gain this via theory- or method-driven dualist research endeavors. In the CBT-informed assessment approach and in the use of CBT questionnaires, it becomes possible to have a competency-based research position that addresses directly a student's behavior competencies in her management of her daily rhythmics, and that research position is an issue-driven position. As it was demonstrated in the third research project, the practitioner's assessments of the students' (learning) behaviors was deduced from the empirical data on the students' daily learning behaviors and through other data acquired in practical teaching, and from that practical position the scaffolds became sufficiently tailored, thus securing their workability in the ordinary dualist teaching practices.

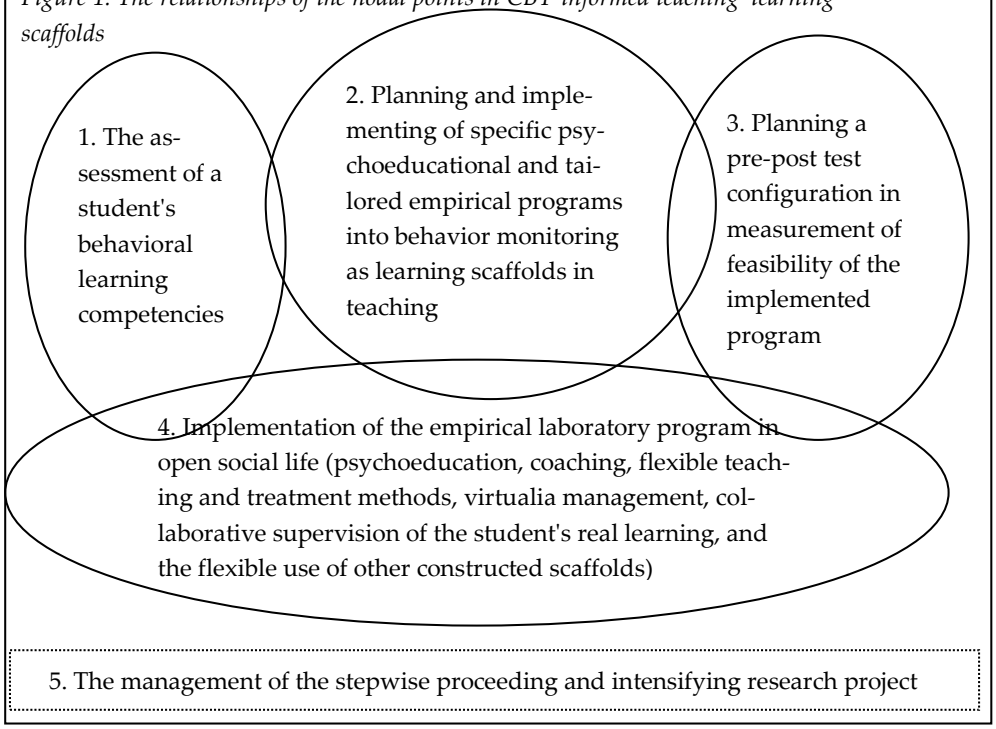
Through the practitioner's embrace of metacognitive layers of the human mind, to dualist, modern, and postmodern psychologies, and his focus on a student's core behavioral competencies using metacognitive, behavior monitoring means, he was able to open up to each student an ontological and not only epistemological learning domain for her contextual behaviors. In the lay teaching practice of psychology, the scaffolding is the same collaborative software-managed practical work template. The template enables the introduction of anxiety and uncertainty issues in human behaviors as they emerge in an individual's discursive intellectual activities either by reflecting along the lines of concrete singular and concrete universals (see dialectical universalizability, Bhaskar, 1993, p. 397), or by lapsing into dualist reflections via actualist theorizing. Anxiety-related behavioral issues have been largely ignored in contemporary educational and psychological literature and research. Without using behavior modality-informed, behavior monitoring means, anxiety and uncertainty behavioral matters are not graspable to the learner, because she might tacitly fall into pathological, theoretical or sensational psychological traps, because of the learner's loss of any ability to reflectively see human behavioral functional and dysfunctional dispositional behavioral competencies at the same time. The same problem of either pathologizing or normalizing a client's behaviors can be found in the literature on CBT-informed educational therapies, which are widespread (see for example, research of stress, self-esteem and worrying reframe by Hains & Ellmann, 1994; Shirk et al., 2006; Bradley-Klug & Shapiro, 2006, and also on the approaches to focusing on actualist, or in other words, on presupposed theoretic behavioral things as the dualist position does). Because the novel metacognitive monitoring and recording approach deployed here was derived by revising contemporary CBT practices, and its tools were refined and 'enlarged' to apply to individual metacognitions, it brought up behavioral issues related to a student's scrutinizing of her own learning and other behaviors and individual uncertainty in managing with subject–object ontologically dualist issues. In order to warrant its importation into metacognitively managed, behavior monitoring exercises for a student's daily learning of vocational psychology, it is pivotal to have an expanded behavioral analysis of her daily learning. Therefore the intertwined and mu-

tually reinforcing relation between behavior assessment and behavior monitoring exercises in a student's daily learning is worth underscoring in this teaching of psychology via the scaffolding of a student's daily learning.

In this research project the anxiety-related psychological restructuring or 'reframing' of student learning was recognized as the primary teaching and learning issue because it is consistent with a dialectical critical realist approach, of which there were some succinct elaborations in the first pages of the first research project. In such a position, individual learning is a broad and flexible issue that cannot be defined and categorized directly and from the very beginning. In this approach to human non-dual knowing and acting, every person appraises and monitors her behavior and metacognitively aims to manage her internal functions with as great a degree of precision as is possible in learning about the ontological things of the polyvalent world. During the first three teaching projects that were executed, the implementations and basic scaffolds (such as the constructive learning process, conceptually rich learning materials, integrated learning program to home studies and classroom coaching, interactive software teaching–learning platform and practitioner-teacher's feedback, etc.) laid down the basic conditions for the extra CBT scaffolding of a student's daily learning of psychology.

First, a basic interactive, innovative, structured and continuously improving dynamic arrangement for self-regulated learning provided a learning template in a psychology course, which had to be refined via additional scaffolding of student learning and via the application of the very CBT-based assessment and validation (e.g. behavioral monitoring) tools that students had recently learned. As previously outlined, this crucial task was accomplished during the first two research projects, and this foundation allowed the

Figure 1: The relationships of the nodal points in CBT-informed teaching–learning scaffolds



development of additional CBT scaffolding in the third project. It was accomplished by an introduction and incorporation of specific CBT treatment protocols into a student's homework and exercises, which became targeted and re-modified in response to her working on her potentially worrying and rumination behaviors. The practitioner's work structure for the third project is presented in Figure 1, which indicates how the practitioner, in working in a transdisciplinary scientist- practitioner's mould, concurrently manages with many specific practical realms in seeking a balanced management of all implemented scaffolds. For example, without intensive tailoring of the learning scaffolds for a student's individual daily learning, one would not achieve an individual non-dual core competency realm for the practitioner's concurrent empirical research, and behavioral assessment, as an expanded functional behavioral analysis of the students' daily learning behaviors would be impossible and nonsensical. In this research it is not elaborated in more detail how a rather formalistic sounding CBT notion of functional and dysfunctional individual behavioral relations is consistent with dialectical, critical realist philosophical conceptualizations, when in the literature the initial functional behavioral analysis has become elaborated diffusely with direct links to dualist, empiricist research objectives, where such an assessment is not possible at all. Here, in the critical realist research position, it is worth noticing how crucial in all the balanced practitioner's endeavors the modality-based behavior monitoring position is, and how the CBT exercises pave the way to an increase of collaborative teacher–student work.

Next, the balanced implementation of the scaffolding is addressed, and affirmed as workable and feasible in that it provides practical options for its improvement. Arguably, with adequate supplementation of the scaffolding of teaching and learning, the refinement of psychological explanations regarding the students' disparate behavioral competencies and pitfalls in anxiety management (as their ruminating and worrying behaviors) would not provide extra traction to challenge a student's real daily learning behaviors (e.g. safety-seeking behavior, on-task performance, as conjoined in ones' metacognitive action control). The primary argumentative line is along behavior monitoring and its CBT treatment protocols providing practical options for scaffolding a student's daily learning (of psychology); therefore the other pivotal argumentative lines for the grounding and elucidation of behavioral assessments stay in the background, and all the other ventures of the practitioner in this area, even those enabling and supporting a student's superficial and broken learning, are not reported.

2. RE-VALIDATING THE MOST APPROPRIATE TEACHING PROGRAM WITH ADDITIONAL CBT TECHNIQUES FOR THE ENHANCEMENT OF MINDFUL BEHAVIOR

In this research project, the argumentation commences with the practitioner's reasons for saying that the scaffolding of a student's daily learning behaviors is appropriate for a student's learning of psychology, as it pertains to vocational and personal human matters,

even in students with disparate behavioral competencies (subsection 2.1). Then, the practitioner broadly shows his preference for dialectical critical realist ethics of ethical naturalism and moral realism without further elucidations (subsection 2.2), and moves to reasoning that inducing a student to address her safety-seeking behaviors needs flexible, behavior monitoring exercises, while more vigorous behavioral exercise methods also are needed for guiding a student to challenge her potential avoidant and multi-leveled disruptive behaviors in a way practically manageable and feasible in ordinary teaching practice (subsection 2.3). It is asserted that among the teaching methods and practical approaches for supporting a student's behavioral confrontation of tacit manifestations of her avoidant, passive and disruptive learning behaviors, the imported scaffolding position is theoretically the most promising, yet demanding and yielding only small positive outcomes in real teaching practice under the social confines of instructive teaching. The hard obstacles to implementing these behavior monitoring methods come from two main sources. First, contrary to the students' initial inclinations to appraise their learning behaviors through strongly idealist learning objectives they ultimately perform their real learning activities more moderately and generally through surface learning patterns. Second, the students' vast divergence in their core behavioral competencies is not manageable without the implementations of specific scaffolding means to non-dual collaborative teacher–student work (subsections 2.4 and 2.5). In any case, it is asserted that scaffolding behavioral experiments and exposure exercises, refined through tailored virtualia management in psychoeducative exercising protocols, is crucial for the introduction and the student's use of confrontational behavioral exercises in her learning (subsection 2.6). Finally, the complete and re-constructed behavior monitoring package, enriched by the behavioral experiments and exposure training and arising from the scaffolds developed in the third research project, is described and outlined in general terms (subsection 2.7).

2.1 An established emancipation-orientated teaching platform for learning scaffolds

The third project established the basis for individual student collaboration in the gradually enriched templates developed for learning psychology. In the third research project, this execution was empirically justified by: (1) verification of the practitioner's assessment of the students' divergent learning competencies; (2) the attained initiation of the students' self-regulated learning activities, and some slight positive changes in the students' behavioral competencies in some student subgroups; and (3) by establishing that the realized multilayered notion of human metacognitive behaviors is most promising for learning about vocational psychology. These scaffolds and their execution were fully functional and manageable, and they did not produce any negative impacts – either on the practitioner's attempts to re-establish each student's genuine learning via her metacognitively managed behavioral activities, or on a student's learning through common and traditional dualist approaches to psychology. Evidently, the real practice-derived options for further improvements in the frameworks lay in the more intensive and smooth flexible executions of the scaffolds constructed to teach the students about human nature. In this teaching approach to nursing studies, when the practitioner felt slight pressures in sustaining the invocation of students' innovative problem-solving, 'academic

freedom' provided the needed incentives to the practitioner for developing this critical realism-informed teaching practice in psychology.

In the third research project on a large group of 24 students, the scaffolding program did not improve the students' basic reflective competencies in learning and daily life on such a scale that the students would have embarked on deep learning activities more often and more intensively. According to the outcomes of the third project, the students' surface learning was directly and positively linked to their disrupted, and thus to their underdeveloped, metacognitive behavioral skills and competencies (Table 3, Tables 4a, 4b, p. 284, and Table 5, p. 288). However, the stability of the surface learning styles in the majority of the students proved that there were limited options for enhancing their self-regulated learning activities through a single course, especially when the students have a strong tendency to, and demonstrate tacit lapses into, despairing self-reflection. This reflection on forms and varieties of safety-seeking behaviors frequently replaces a student's metacognitive reflecting, or it even causes a deterioration of her former mediocre on-task performance problem-solving activities. An argument for favoring metacognitive and self-regulated learning is that conventional teaching practices tacitly reinforce surface learning and teaching, regardless of the opposite original educational missions and goals.

For a student's despairing self-reflection to become adequately managed by her, her tacit worrying behaviors require self-regulation, and this validation was the educational core target or goal in the third research project. Nevertheless, when the students proved incapable of profiting from the taught behavior monitoring exercises frequently and persistently, the monitoring program failed to instigate the development of robust, individual functional behavioral competencies, at least immediately and decisively. Unfortunately, only limited empirical sociological data are available on the relationships between the level and success of the program's implementation and its effectiveness in promoting students' innovation in their learning behaviors. Although the complete implementation of behavior monitoring exercises in all the students' learning about psychology is improbable, at least the practitioner's option to pursue a particularly vigorous application remains in some subgroups of the students.

The primary objective is to discover the optimal teaching strategy for an initiation of a student's self-regulated learning in the given social educational environment, not to formulate a straightforward case for the presupposed determinate psychological mechanisms behind the students' learning behaviors. Student learning on a daily basis is largely a social issue and behavioral matter, out of which social enabling and coercive norms and communicative practices evolve and are at work. Such norms and practices serve as a pre-existing template for enabling and coercing the students' actual learning behaviors, and here they maintain their surface learning more often and more dominantly in lay teaching practice. For example, if students' general educational social norms of expected and rewarded learning eradicate their individualist and experimental learning, as appears to happen in prevalent educational life, no valid administrative programs are capable of enabling and encouraging a student's metacognitively initiated and contextually managed self-regulated learning. In the existing educational social environment, this is one reason why applications of software technologies tend to support the student's surface learning. The limited and fragmented scaffolding of teaching in dualist practical

approaches (but not of a student's learning, as was attempted in this project) is the other reason. As demonstrated in the third research project, an effective scaffolding of student learning requires extensive and empirically verified strategies in initiating and enabling a student's self-regulated or reflective metacognitively managed daily learning.

The strategic approach to practical teaching and the research logic of assessing a student's functional and dysfunctional behavioral patterns in their real maintenance relations, deriving learning scaffolds for practical programming of a student's learning, implementing in real practice the scaffolds, and concurrently empirically investigating the feasibility of teaching endeavors emerged in the third research project as an emancipatory practical endeavor to teach the students about psychology. More specifically, in the critical realist perspective, in this kind of CBT practice and research into individual uncertainty management, it has been acknowledged for decades that an individual (in her worries and anxieties) may maintain and increase symptomatic behaviors by her tacit behavioral activities, as was more specifically delineated in the third research project. This dysfunctional safety-seeking behavior impairs her problem-solving activities as her metacognitive activities, as was demonstrated in the three previous research projects (and most particularly in the third one).

2.2 Strong ethical grounds for continuing with a student's metacognitively managed learning

Students' worrying and rumination puts pressures on practical teaching to adopt dualist, instructive non-collaborative ways, in which an objective to increase collaborative teaching discourses is required in order to tailor the teaching to all students' learning with their disparate self-regulated learning skills. For the students, with their great variety of disparate latent behavioral competencies, to do learning and in their learning activities to engage in clearing space for the realization of self-regulated daily learning, the impact of these behaviors on any transformative educational practice would be that the students' novel innovative behaviors would obstruct general instructive teaching discourses and would directly initiate the students' self-regulated learning. Such an outcome is probable and even likely, if the balanced scaffolding of student learning (Figure 2, p. 267) is successful and becomes refined adequately and optimally, and if the social structures are not too coercive in maintaining the ordinary dualist teaching and learning. Although the third research project paved the way to scaffolding a student's daily learning, it also established entrenched stable teaching structures and discourses, from which platform new and more innovative learning scaffolds might gradually grow up and be propagated to the entire educational life in nursing studies in the fourth project.

Due to the students' divergent, and in many cases insufficient, learning competencies in 'deep' learning (see, for example, the previous report Table 2a, p. 282; and, as verified by a single case analysis from Table 2a, p. 282, not presented), something like the constructed extensive approach to teaching by scaffolding was required. The application of the modality stance to behavior monitoring was theoretically inferred from the broad metacognitive and mindfulness-oriented psychological approaches by CBT conceptualizations, but its dialectical critical realist philosophical bases cannot be elucidated in more detail when the nodal conceptual approach to safety-seeking behaviors is deeply psycho-

logical and practical. It was a challenge for the practitioner to provide individually tailored, adaptive and collaborative educational scaffolds for the students and to encourage them to abstain from worrying and safety-seeking maladaptive behaviors, and instead to enhance their acceptance-commitment managed learning. As a virtualia-software managed teaching practice, the safety-seeking viewpoint to functional and dysfunctional behavioral dispositions departs from ability psychologies in setting up unique options for the practitioner's immediate feedback and supervision of the students' learning.

The practitioner's choice of going with a reflexive practice over empiricist positions is intentional. In spite of numerous practical and theoretical difficulties in this scientist practitioner transdisciplinary research, the practitioner's attempts were nearly sufficient to enhance the students' basic self-regulated learning as strategic and deep. As has been delineated in the details of the previous projects, deep learning in particular manifests in a variety of specific and mutually conjoined self-regulated skills (text comprehension skills, literary skills, skills for seeking advices to one's learning, etc.) in academic studying; the mastery of these skills is not a realistic objective in core vocational studies. Obviously, the students experience considerable stress in confronting learning obstacles; for them, it is a viable option to lapse into inductivist, abstract and flawed generalizations (elaborated in CBT conceptualizations as cognitive biases in one's perceiving, interpreting, evaluations and meta-evaluations). These flawed generalizations of their living conditions may increase their despairing reflections.

Maladaptive behaviors are not suitable for confrontation and correction via instructive means, which don't support skills improvement in all the required self-regulated behavioral realms; on the contrary, changing them requires appropriate templates and recording approaches (e.g. the CBT-informed learning scaffolds) for an individual's identification and revision of her often tacit and potential dysfunctional behavioral patterns. To a tacitly worrying and despairing student, instructive teaching represents a direct objectification and simulation of the object (as a form) and does not provide incentives for envisioning by detachment, and reflecting on real social life. The selected alternative perspective, a critical realism-informed scientific approach, is a deep underlying current in research and practically attempts to re-establish individual metacognitive reflection in all spheres it ontologically emerges from in human life via dialectical ontological moments in MELD(A) (see Shield 2007, pp. 295–303). In the social transformative realm, emancipatory research seems to function as psychological laboratory research: it warrants and requires both further deployment of the most feasible teaching and learning scaffolds as well as empirical research into their workability and feasibility in the fourth study from the consolidated teaching template in nursing studies.

The utilization of specialized consultative and instructive practices or of certain teaching methods (for example, team working) to initiate the students' mindfulness reflective behavioral competencies are not realistic means for students with vastly disparate behavioral competencies. Rigid practical endeavors and any methods associated with them lapse into dualist positions, thus occluding metacognitive behavioral realms and collaborative teacher–student work. Rigid teaching applications are unwarranted due to the risk of their reinforcing the students' emotionally laden, superficial communication tacitly and via an initiation of their anxiety-related feelings, for example, resulting in only

superficial exchanges with classmates. This teaching methodology tacitly obstructs the emergence of contextually arising and subjectively managed disagreements, conflicts and their collaborative confrontation, acceptance and commitment, and prevents a student's effortless re-focusing on the main behavioral and learning issues.

In the practitioner's observational orientation during classroom sessions, the changes occurring in the students' learning activities were significant but not sufficient in initiating further changes in the deeply structured, dualist, educational social practices when compared to the two previous projects. The individual case analyses were not dealt with and presented in detail, but many of the students demonstrated improvements in many specific self-regulated learning activities, which did not come out in the outcomes in the tables at the group level where the changes in the students' learning patterns in deep learning and their behavioral competencies remained moderate. Through the practitioner's observations and other data from the students' executions of their learning (e.g. attention to the appropriate issues in coaching, ability to utilize the practitioner's received virtualia feedback, etc.) the students' emotivist, worry-initiating discourses were gradually undermined and replaced by an individual and dedicated focus on human behavioral issues. Of course, at least generally, the students improved their recognition of the fact that worrying and other avoidant behaviors and problems in concentration (etc.) could be self-initiated and self-caused. Thus the students seemed to increase their recognition and acceptance of the diversity of their classmates' learning, communicative patterns and other behaviors. It signified their deeper understanding of contextual and individual character of human behaviors. The students demonstrated behaviors that let them refrain from hasty externalized criticisms of the most appropriate teaching methods, and freed them from their specific tacit orientation to nomological exact concepts as the most adequate, whereas the richness of multilayered conceptualizations and psychological concepts came to be seen as the underlying current in the learning materials. Thus the students understood more often the subjective nature of individual learning behaviors as the obstacle in developing relevant psychological knowledge on human behaviors.

The research goal was not to establish a positive correlation between the students' learning outcomes of human psychology and their self-regulated learning activities (or to evaluate its strength). However, it would not require a considerable effort to position it under this research umbrella, if required. For example, the competent students both validated and revised their learning and daily activities by using the behavior recordings produced, and concurrently performed their deep learning activities as the course progressed. Therefore they could manage the scaffolding more efficiently in their concurrent learning when compared to the students in the earlier projects, but they did not find the incentives sufficiently strong in orienting their learning to the more intensive learning activities and outcomes. The students thus seemed to adapt the equalitarian and superficial communicative discourses that abolish the individual authentic realm in educative normative teaching practices. This is a problem in advanced teaching, and it needs to be excluded, because it undermines the large diversity of what must be accepted in an individual's innovative working. The second subgroup of the students, while accomplishing the basic learning, achieved merely provisional success in the behavior recording and its appreciation, thus not benefiting fully from the program in order to address efficiently

their potential worrying and safety seeking. Many of these students decreased their attempts at making records and keeping daily diaries of their learning activities towards the end of the studies. Often they concentrated on their surface learning and daily stress management, which were their initial behavioral problem-solving patterns. The third subgroup of the students did not achieve any significant success in performing even rather superficial attempts at scrutinizing their learning by behavior monitoring. The students with fragmented surface learning activities were nonetheless able to pass the course through their surface learning activities.

Overall, the redefinition of the role of optimal scaffolds in the restoration of the students' self-regulated learning with greater frequency and intensity as recurring deep learning must be carried out on a pre-existing and pre-constructed basis to scaffold the students' learning. In the CBT approach, with its richness and the expert precision of its practical tools, there might be innovative, tailored and targeted methods of addressing a student's actual avoidant and safety-seeking behaviors more adequately and directly. The three previous research projects have established a sound basis for such a task. Next is discussed the options for refining the most appropriate and feasible behavior-monitoring recording methods and training techniques.

2.3 Strategic tailoring in scaffolding of student learning

The three student subgroups, in regards to the students' behavior competency realms in individual uncertainty and anxiety management in their daily problem-solving rhythmics, suggest a strategic implementation of the scaffolding when there is a clear indication for implementations of more confrontational training means. That strategic position emerges from the implemented rich and flexible template in the teaching and learning of psychology, whereas in instructive teaching that kind of option would not emerge at all as a practical option.

However that kind of strategic position does not come out directly, but it needs to be derived and deduced by the practitioner's transcendental, referentially detached reflections on the open, multilayered transformative life. For the practitioner, a scaffolding position must be devised that is possible to execute by striving for divergent and separate learning objectives for all the students in the three student subgroups. As it is argued anon, the devised scaffolding must be specifically tailored:

- to the first student subgroup's needs for the students' validation of their fairly advanced reflective behavioral competencies with some specific behavioral needs to their training via the refined CBT scaffolds,
- to the second subgroup for the students' identification and psychoeductional understanding of the roots of their broken, persistent learning activities, and
- to the third student subgroup for their gaining general educational knowledge about human, individual, anxiety-related behavioral issues, such as rumination and worrying.

In the third research project the scaffolding remained fairly diffuse and inadequate in addressing and identifying the most pivotal behavioral methods for securing a decrease in individual worrying. In the program, the individual metacognitive behavioral realm remained weak in the treatment protocols, and the practitioner's virtualia supervision was rather encouraging but not confrontational in guiding the students to take responsi-

bility for their fragmented, mutually conjoined and rich safety-seeking activities. Here it is argued and presupposed that in any strong psychoeducational software execution, the practical learning means to a student's behavioral experiments and exposure exercises are more confrontational if their execution is accomplished more smoothly without strong classroom coaching, but more intensively through tailored and more confrontational practitioner's feedback and supervision of a student's real training in the monitoring exercises (as well as in her real learning activities).

In the third research project, the students' carrying out of behavior monitoring exercises did not take place very often and on a continuous daily learning basis, with a few exceptions, despite the practitioner's step-by-step guidance and psychoeducation on behavioral issues on individual anxiety management and learning. This real fact of the practitioner's options to scaffold the students' daily learning does not provide a direct means for intensification and refinements of the practitioner's software supervision or classroom coaching. It also signifies that in general the students experience contextually arising difficulties in differentiating their various aroused feelings and anxieties, some of which are essential in one's efficient on-task and reflective actions. Some are maladaptive intensified safety-seeking behaviors, or even accumulated and prolonged behavioral activity chains to sustain despairing, anxious behavioral patterns. The attained empirical results on the students' behavioral competencies indicate that the students' reflections are more or less entwined with their ruminations and worries in the majority of the students' cases. Their reflective tendencies were not manifested or not sufficient to produce an increase in new initiations of self-regulated learning activities. This could be due either to their ruminating behaviors or to their indecisiveness, which can in itself be a manifestation of a diffuse and mixed self-identity development (e.g., low self-esteem and lagged identity development) or both.

In the latter substantial student subgroup (with regard to the students' competence levels, two separate subgroups emerged in the executed factor analysis in the third research project; see page 291), the students' safety-seeking behavioral patterns and activities dominated their on-task performance, the outcome of which was their limited and inefficient learning activities. These avoidant behaviors have been initiated by a student's peak anxiety experiences (e.g., missing lessons on a specific topic, or going to bed late), of which peaks she was not aware, or could not find means and incentives to focus specifically on challenging these behaviors. In this case, the most fundamental shortcoming of a student's learning is her insufficient reading of the learning materials, which is required for gaining self-efficiency on attaining learning outcomes, and for individually remodeling and restructuring learning problems in learning activities. Related to this unexpected collapse the student's on-task performance behaviors exemplify her real safety-seeking behaviors, which partially and tacitly become executed by her as inefficient and uncommitted activities (e.g., skipping through the assigned texts while watching TV, discussing individual emotional loads confronted in education with a classmate, not fully concentrating on attending to the teacher's presentation, lapsing into positivist thinking, seeking support from classmates by emotional comments, etc.). Thus, the applied safety-seeking perspective informs the mutually conjoined and reinforcing safety-seeking behavioral chains as it becomes impossible to challenge anxiety experiences and avoidant behaviors

via the earlier behavior-monitoring CBT training protocols. It now needs both stronger confrontation and psychoeduction to address a student's challenging, notifying or/and general understanding of these individual behavioral deficits.

From the practitioner's side, a more intensive or specific confrontation of a student's real learning would require an added focus on a student's implementation, for which these behavioral modalities in individual behavior monitoring would serve as a feasible learning template. When the practitioner's two-way communicative collaborative supervision is workable only with the students with more advanced reflective competencies to engage in specific learning activities the confrontational behavior experiments and exposure training means can be targeted particularly at these students. However, with a psychoeducationally managed training, executed by virtualia template that is practiced by a student's voluntary confrontational targeting of her potential avoidances, it does not exclude the students with less developed behavioral competencies; they can also benefit from these deepened importations in behavior monitoring by having psychoeducation, or at least through gaining education by gaining broader perspectives on individual well being.

As described by Shirk et al. (2006), adolescents' low self-esteem and related behavioral problems are entrenched in such individual psychological behavioral management matters as unrealistic self-standards, inaccurate self-evaluations, undifferentiated self-structures and inauthentic, or false self-identities (ibid, pp. 194–198). A student's search for remodeling of these dysfunctional beliefs and meta-schematic structures in educational, psycho-therapeutically informed groups would require gradual progress towards collaborative work with a stronger emphasis on the scheduling and re-modifying of individual daily activities as well as the re-examination of individual metabeliefs. The incorporation of these therapeutic tools into the dynamically progressing teaching and learning process was not viable because the individual, metacognitive behavioral realm became purely administered by the program in the third research project. These tools, which embrace metacognitive behavioral realms, are more suitable for individual administration in face-to-face collaboration with the students with low self-esteem.

By means of the virtualia-software teaching and learning template, the practitioner is able to provide tailored collaborative supervision in guiding a student to challenge potential avoidant behavioral patterns. This collaborative and trustworthy communication alone is not attainable and efficient in a classroom session among divergent students when large numbers of the students have crucial deficits in their metacognitive mindfulness competencies in managing their daily rhythmic lives. The practitioner's supervision through individually tailored communication is unusable for classroom teaching because it is too direct. If sought to be practiced, it can discourage the students with deficient reflective skills and competencies to engage in intensive learning behaviors.

There are no grounds in this project for a departure from scaffolding and behavior monitoring, and more specifically from overcoming safety-seeking conceptualizations, in providing educative and psychoeducative instruction to the students in their behavior monitoring and recording as well as in their daily learning. Safety-seeking conceptualizations, albeit being theoretically diffuse and broad (see Thwaites and Freeston, 2005), are different from the traditional dualist psychologies and categories of defence mechanisms.

It is more appropriate as an informative practical position for deployments of empirical behavior monitoring devices than for professional and often dualist diagnostic purposes. It is also appropriate for and consistent with this behavioral modality approach to human agency, with its divergent and opposing internal behavioral forces.

It is worth noting that there are no other adequate psychological explanations of the students' divergent behavioral learning patterns and orientations which would not be confined to dualist psychological positions, thereby excluding the practitioner's practical ventures into human emancipation. For example, if the practitioner-researcher would have proposed a psychological explanation for why the more proficient students in core behavioral competencies do not recognize the necessity of, and practical steps required for, engaging in self-regulated learning activities in their studies or development more frequently, or why they do not find additional incentives for these actions, such explanations would stay as sociological and merely descriptive Instead, the safety-seeking conceptualization indicates the need to import more confrontational treatment methods from CBT practices, and to incorporate them into the students' studies as is the practitioner's objective in this project. As another approach to supporting a student's progress in their social skills, an increase in a student's recourses for individual behavior management (such as the achievement of an emphatic understanding of the activities of others) would lapse into idealist and flawed conceptions of individual's authentic behaviors, thus diminishing the space for individual and mutual trustworthiness. So the applied behavior monitoring methodology became empirically verified and gradually intensified from the first and second projects in the third project in scaffolding the students' learning. The arrangement of the scaffolds turned out to be sufficiently accurate for informing how the practitioner would refine the scaffolds in this project. The aim is to overcome this practitioner's obstacle to this scaffolding, and requires his strategic approach. Thus, the question is how to enlarge the scaffolding via individually tailored methods and to apply it more vigorously (specifically, under the practitioner's supervision**)** to one of the three identified subgroups of the students at least, which the broad scaffolding enables and provides options for.

The objective of collaborative supervision of the all students is not manageable under the current instructive educational practices, even when the practitioner can administer this supervision through individuality and confidentiality upholding software templates. The students with more deficient self-regulated learning skills and competencies are not capable of taking responsibility for their real learning behaviors because dominant teaching practices (with their lack of adequate self-regulated scaffoldings) favor instruction and lectures, at least tacitly. The dominant practice legitimizes a student's learning as her identifying activities among external objective things and sees this as adequate, but this significantly restricts a student's thinking through individual contextually accelerated reflections on all the varieties of her tacit and out-of-the-blue- intentions. This objectifying mode of identification in learning leaves a vast gap between theory and practice and requires from a student its normative actualist resurrection. In such student learning activities there is no room for the practitioner's efficient coaching of a student. It seems that this transition to collaborative teaching ways requires a stronger collaborative student supervision of her learning at first in order to pave the way towards coaching.

Teaching psychology to nursing students easily goes on in traditional ways, by the practitioner's continuing with promoting a student's recognition, identification and intelligent superficial pondering of epistemologies and theories. This teaching gives rise to her inductive and flawed generalizations of such superficial behavioral issues, but ontological external and internal things are not reflected as metacognitive learning under the open totality life alluded to. Instead of this attachment to the empiricist notions of human knowledge and to individual learning, learning through individual discursive intellectual activities about ontological things requires the scaffolding approach to a student's learning behaviors. In the third research project, the students' fundamental shortcomings in their essential self-regulated learning activities, in addition to their weaknesses in core behavioral competencies (e.g., perception, interpretation, evaluation, meta-evaluation) seem stable in the majority of the students in the pre- and post-test setting, without clear indications either of improvements or deteriorations.

In the third research project, it seemed that the psychoeducative encouragement to engage in one's own behavioral experiments and exposures to deal with worrying and unwanted thoughts and other behavioral stimuli was adopted by all the students. It is conceivable and consistent with what has been discovered in CBT-informed clinical practices where, for example, a client's or a student's thought suppression may be too intense and not suitable for her to re-challenge, and in that manner to increase mindful acceptance of her thoughts becoming suppressed. The students' avoidant behavioral patterns may be dominant, thus undermining their spontaneous and contextual focus on, and identification of, their real behavioral activities. However, these students who pursue a questionable and immediate relief from or alleviation of their anxieties through safety-seeking behaviors might also benefit indirectly from such focused tailoring by receiving educational and psychoeducational knowledge about human behaviors. Psychological knowledge would strengthen the students' communicative discourses and would provide options for more direct, metacognitively managed training to deal with their anxiety feelings and thoughts in the future.

2.4 Theoretically promising scaffolds in enhancing mindfulness learning

I now elaborate on how the scaffolding means are theoretically justified; their theoretic bases are not theories needing verification or falsification because from a dialectical critical realist position theories serve and have multiple research and practical aims.

In addition to the practical and strategic reasons presented above, another justification for the introduction of confrontational monitoring and associated exercises comes directly from the open educational social life being researched. Using such practical means, there is a possibility to develop education and its educational research to meet the general ethical objectives for innovative learning and work. When there are no direct possibilities of intensifying the templates for collaborative intensive discourses available for every student, thought and other stopping strategies for guiding a student to discontinue her identified maladaptive activities are not practically manageable. These purely psychoeducatively managed strategies might also be too weak, because they suggest direct and immediate alleviation from individual anxiety related feelings when there is also a need

to engage mindfulness strategies in behavioral planning, and to accept and commit to the real living obstacles.

It has been illustrated and clarified in the three previous projects that the monitoring and introduction of diaries for recording individual concurrent and/or recent actions and learning activities is a basic strategy in CBT techniques and psychotherapeutic practices, which here became administered both for assessment as well as for psychoeducative (and even therapeutic) purposes. The practitioner's continuous behavior assessment of the nature, intensity, and difficulties in the students' actual learning activities enables him to recognize their behavioral difficulties in their recent real learning activities. For example, it was observed that only seldom and with rare exceptions did the students perform the constructed recording package (see Appendix IVa, pp. 445-446) on a continuous basis. Instead, a large number of the students decreased their efforts in the completion stages of this course. Reasons for the students passing exercises and increasing tendentious ways are manifold and not enumerated here, but regardless of that the workability and feasibility of the implemented scaffolds for the students' self-regulated learning and underlying behavioral reflective competencies is clear. That is so, because the practitioner's research objective is not an empiricist but an emancipatory one that speaks for itself, a gradual search for practical means to enhance the students' out-of-the-blue learning activities and abolishing coercive constraints and by that means achieving human freedoms.

There are at least three basic realms that impact on the feasibility via scaffolding for the educational transition from instructive dualist practices to collaborative non-dual practices. The first is a more tailored scaffolding of the students' learning, the second is how often and persistently the students would engage with the behavior monitoring training protocols and the third is how the practitioner would have more options for the collaborative supervision of the students' learning and performing of their exercises. The best order to ensure progress is to begin first with the first objective, and when the students' performance of their individually adequate exercises becomes sufficiently frequent and intensive there might be options for more intensive and trustworthy supervision and feedback of the students. So some progress is required simultaneously in all the three parallel endeavors. The third research project served as a template for a motivational interviewing practice of student supervision in their exercises in striving for trustworthy argumentation, which might increase the students' practice of the exercises. In the next project, a natural method might be found to provide the students with continuous guidance in a more confrontational way to encourage the students' performance of the exercises. That would be feasible, if the students could use the practitioner-teacher's written psychoeducation efficiently, which was proved to be feasible by presetting the software template of the students' home studies, and their regular progress in learning tasks about human psychology (see Appendix V, pp. 449–450).

In the third research project, the empirical outcomes on the strength and changes in anxiety management competencies show, and even to a certain psychological degree (in categorizing by CBT conceptualizations of dynamics in anxiety behavioral issues) explain, why the students frequently lapse into procrastinating and safety-seeking behaviors which undermines their on-task performance. That is why it is difficult to support their re-validation of their real behavioral activities in concurrent teaching on the ways they

manage anxiety feelings in current behaviors. To elaborate on this psychological core issue in individual management of individually perceived, interpreted and evaluated uncertainties in the behavior by using Micheli and Castelfranci's (2005) conceptualization, it might be noted that in a student's disrupted metacognitive evaluations there may arise a tacit insatiable need for predictive certainty (ibid, p. 309). This tacit, and occasionally even obsessive, behavioral tendency of the individual in avoiding anxieties by utilizing divertive and compulsively habits may impair individual on-task performance or cognitive problem solving in stressful living and learning conditions. In a mindfulness stance, this behavior and its initial moment in an individual's contextual reflections is broken and disrupted, and attention to, and evaluations of, all internal and external things as real forms and mediations is not possible. This also indicates biases in an individual's metacognitive behavior management and becomes manifested in worries and despairing thoughts which maintain and self-sustain anxieties prolonging behavioral patterns, as Wells and Matthews (1994, 1996) have elaborated in their S-REF model. In this case, an individual's metacognitive worrying reveals her biased validation and appraisal of her contextually arisen behaviors.

A student's potential biased cognitions restrict her interpretations and dialectically inferred evaluations of her knowledge acquisition and her attribution of her behavioral determinants as 'real' (not metacritically evaluated as real) things and forces of the 'whole world' and as their mediations; see for example Basseches (1984) on this post-Piagetian approach to empirically categorizing individual cognitive reasoning patterns. This was the case in the third project, at least for one subgroup of the students with less developed behavioral competencies, who by their actively worrying behaviors demonstrated their unsuccessful completion of the designed stepwise problem-solving written task (Table 6, p. 289). This indecisiveness and despairing individual's thinking initiates an immediate volition to act mindlessly in the world. The S-REF model delineates how individual reflections are impaired and become exemplified as forms of dysfunctional metacognitive beliefs and biased cognitions; its consequences are impairments in an individual's 'fresh' or 'out-of-the-blue' metacognitively managed reflections. Thus individual reflections may manifest themselves as unwanted and threatening intrusions needing direct suppression and other behavioral strategies that might manifest as limited self-reflection. Such mental activities do not push the entire ontological world away from one's self-consciousness, because in this event individual reflection of any kind would become impossible. Subject–object, dualist world matters need some absolving as Bhaskar (1993) elucidates; this is the behavioral issue that turns into epistemological theories or emerges as conceptual thinking and as a decrease in the attentiveness and openness to 'real things' of mundane multilayered reality. Borkovec et al. (2004), in addressing imagery and conceptual cognitions, do not elaborate whether their concept of imagistic thinking represents individual openness towards real contextual multilayered things and of their metacritical evaluation. Therefore the dialectical critical realist position is the only theoretically grounded basis for deploying behavior monitoring means and methodologies for guiding and supporting a client's metacognitive activities in her refraining from conceptual thinking and/or in strengthening her imagistic activities.

However, Wells' (1995) two-stage theory of worry and Borkovec et al.'s (2004) theory of avoidance seem to allow the derivation and delineation of the practical paths in behavior monitoring means for providing behavioral templates for a student's (client's) strengthening of her imagistic activities. There are no theories (or even meta-theories) in contemporary psychology being devised and constructed for the applied emancipatory approach to the implementation of tailored scaffolds in student learning. The aforementioned theoretical explanations of the students' daily learning behaviors serve only for the practitioner as an informative perspective and criteria for the metacritical evaluation of the consistency and adequacy of the accomplished implementations, and for arguing about the validity of the attained empirical outcomes. It was already explained that metacognitively induced worries in directing individuals' attention to internally feared stimuli and their contents may, as Borkovec et al. (2004) explain (the problem is the exclusion of the metacognitive realm of all cognitive activities), induce individuals' tendency to suppress thoughts during worrisome episodes, and that in turn prolongs and contributes to experiences of anxiety (ibid, p. 80). The authors discuss two different models of anxiety experiences being outcomes or consequences of avoidant behaviors that become initiated from internal and external anxiety stimuli. These experiences may give rise to the individual's worry-inducing conceptual cognitions (decreased concreteness) or imaginistic cognitions; the authors do not delineate if the individual herself can instigate the latter mental activities. Borkovec et al. (ibid.) seem to be stuck with the empiricist language conception of therapeutic means, which occludes the dialectical critical realist-informed behavior monitoring methodology advocated here as the basic practical therapeutic protocol for enhancing a client's metacognitive mindfulness monitoring of her contextual behaviors. The researchers do not describe how an individual manages with her mental imagery of 'all real ontological things' in on-task performance activities, because they are stuck with the empiricist notion how an individual being, by reflecting her mental stimuli, comes into existence. The critical realist position has shown that this way to the growth of human individuality is not possible, because having reflections of any kind requires reflecting on something ontological or ontic, as Bhaskar (1993) has shown. Borkovec et al. only inquire, "what might be the imagery mechanisms that are susceptible to worry's mitigating influence?"(ibid, p. 82), because they do not address what their philosophical notion of human mind would be, thus being tacitly confined to dualist monadic positions on the human mind. Nevertheless, they return to the internal domain of the human mind by quoting Kosslyn's (1983) conceptualizing imagery as involving both a retrieval mechanism and a retriever mechanism, but do not elucidate their "imagery" notion through mindfulness-based psychological conceptualizations as argued here throughout.

In the critical realist approach, and without recourse to empiricist, abstract theoretic conceptualizations of the human mind, an individual's distancing of mental activities from real ontological (internal and external) things as behavioral determinants would require more post-Piagetian psychological and philosophical conceptualizations and revision of CBT theoretic conceptualizations, which is not addressed in this paper. Referential detachment (a critical realist philosophical concept) or real abstraction in an individual's metacognitive distancing and knowing of real things is a recent psychological perspective, and has gotten somewhat elaborated in terms of psychological descriptions

in Dugas et al.'s (2005) conceptualization of the intolerance of uncertainty. The intolerance of uncertainty is a cognitive bias (ibid, p. 58), which excludes an individual's perception of her biases in mindfulness thoughts of not noticing and identifying them as her dysfunctional mind-activity patterns. This stance, although lacking depth in the behavioral realm of multilayered and constrained mental psychic activities at work all along, is vague for the present scaffolding purposes, but became revitalized in the practitioner's behavioral assessments of the students' learning behaviors, in the psychoeducative layouts in behavior monitoring exercises, and in the practitioner's coaching and supervision of students' exercising and learning. The intra-individual conceptualization of the weak intolerance of uncertainty returns in its basic form – to the dualist conceptualization, that is, of conceptualizing only the human mind but not the concurrent behavior in 'real' living ontological contexts.

This flaw of lapsing into theories and epistemologies is avoidable in practical behavior monitoring and the mindfulness–mindlessness position by moving into CBT conceptualizations and a practitioner's assessments of the students' anxiety-related behavioral features and behavioral deficiencies. In this position, human reflection is described and seen as it is, and as it directly emerges in an individual's reflections, as a discursive and transcendent human intellect. This perspective and broad definition is not a theoretical position that requires further elaboration in grounding the scientist-practitioner's emancipatory research. For these purposes Bhaskar's (2002) broad philosophical definition of mindfulness as human creativity, which comprises both biased reflecting and creative reflecting, is sufficient. "Human creativity implies of course change, and in particular the possibility of the emergence of something new, and the possibility of those who are enslaved or enslave themselves conceiving this possibility of this" (of one's ground state, how a subject being capable of reflexively situating itself, ibid, p. 137). Of course, to maintain the emancipatory practical approach it needed to be outlined as a real practice in CBT psychological conceptualizations in the third research project. In scaffolding student learning, conceptualization, such as behavior modalities, are required and these were accomplished specifically through behavior modalities and CBT questionnaires as measurements of how a student observes and appraises her contradictory internal forces as an essential part of her concurrent metacognitively managed problem-solving behaviors.

This conceptualization of behavioral modalities, as forms or modes of individual loci of control, as Baumeister et al. (1994) describe in explicit behavioral terms, is an extensive one. The emancipatory position taken here diverges from Baumeister et al.'s objectifying descriptive approach: it stands for applying a practical strategy for the introduction of metacognitions to this contextual human behavior, as Wells' (1995) two-stage theory of worry suggests. In this theory of worry, cognitive distortions of an individual's attentions, interpretations and appraisals in abstract generalizations denote a loss of an individual's 'real' context as it exists. Mindfulness behavior denotes that spontaneous and dynamic behavior modification and its continuous exercise, which is not entirely an issue of the mind but a real behavioral issue relating to reflecting on the world's things. In general terms, Wells' theory suggests mental activities such as how worrying may generate in itself its swinging distorted thoughts; increased despair and despairing thoughts become managed by the individual's behavior control, either functionally or dysfunctionally. But

his theory, at least covertly, is deeply committed to the critical realist position on how to enhance "individual's concrete singularity and concrete universality" – via the invigoration of her spontaneous mindfulness or metacognitive mind activities. In CBT terms, to conceptualize an individual's monitoring of actual and real behaviors is also an effective and appropriate psychotherapeutic strategy to treat clients with clinical anxiety problems, such as obsessive behaviors, borderline behaviors and depressive behaviors. The entire package of the self-regulated learning scaffolds available for the students' utilization during this project highlights how a student, by her choosing of the exercising protocols in her performing behavior monitoring, engages in scrutiny of her interrelated and mutually reinforcing (or if misapplied by a student, mutually invalidating) behavioral acts, activities and activity patterns. That behavioral change in a student's learning behaviors can't be caused through educative instructive means and therefore, in their very nature, the scaffolds of behavior monitoring are psychotherapeutic treatment protocols. Behavior monitoring means are incorporated into the entire learning structure and processes in the program's execution, such as into an intensifying learning process of human behavior and development, and into the utilization of conceptually rich learning materials to classroom coaching. The framework forms a software template for the practitioner's feedback, both to the students' current learning outcomes and to the students' use of behavior monitoring exercises.

In the third research project, it was shown that the implementation of the designed and implemented learning framework was practically manageable and partially successful in the enhancement of the students' reflective competencies and deep learning. Even if the students do not perform exercises in behavior monitoring and training via the psychoeducationally managed instructions and guides, or do not embark on studying learning materials actively by pacing their activities to the course's general progress, but instead perform their initial surface learning, they still can gain the required general knowledge of human behavior for their nursing and daily living for educational objectives in preventive health work. That is why the CBT approach is necessary in moving to teaching in non-dual theoretic-practical contexts, enabling one's self-initiated metacognitive behaviors in one's daily rhythmics. A new self-regulated realm of metacognitive management of one's uncertainties and anxieties is crucial for any professional understanding of human behavior and its emotional and mental problems in nursing studies. Hence the psychology course's general educational psychological knowledge functions as a preventive health program for the students' individual development.

2.5 The students' despaired reflection impairs their reflective learning

As the third research project showed and affirmed, its impacts and the effects in the enhancement of the students' self-regulated learning competencies and skills of dealing with uncertainties and anxieties in their daily behaviors by the introduction of self-regulated learning scaffolds were moderate.

In curriculum-based educational programs in academic studies, a question arises whether it might be possible to implement specific interventions for enhancing a student's self-regulated learning that can be targeted at young and adult learners, because all strongly entrenched structured transfactual mechanisms embrace all the educational

programs which maintain the dominance of illustrative instructional practices. Such educational practices do not leave room for efficient coaching and other learning collaborative means in teaching that are required for the enhancement of self-regulated learning, from the beginning to the intensification of spontaneous monitoring of real contextual learning activities. In the execution of the third teaching project, it was observed that the students with significant deficiencies in their self-regulated daily behaviors did not accomplish literary home tasks and other self-regulated and elaborated learning activities. The students' weak learning activities transformed the teaching discourses to dualist instructions and this conflation increased the initial mistrust in teacher–student discourses, with its tacit disconfirmative reinforcement to both the interlocutors.

Under these dualist instructive teaching practices, there are no direct practical and scientifically grounded means of challenging the students' procrastinating behaviors by means of the implemented scaffolds, because the students' original surface learning activities prevail, such as rote learning for passing summary diagnostic exams. Obviously the students matched their learning activities to these surface learning activities by following lectures passively and by performing a few self-initiated, dynamic self-regulated learning activities only occasionally, without having learning templates for confirmative feedback to apply the theoretical knowledge in their real lives. In a student's daily behaviors, the CBT perspective on individual avoidance and avoidant behaviors is not a specific issue, but it is the core behavioral realm where all kinds of learning activities and activity chains take their place with its manifold conjoined psychic mechanisms at work,.

As demonstrated empirically, a student's metacognitive functioning lapses frequently into reflecting despairing moods causing a restriction to her mindful monitoring and evaluation of her real behaviors. At least a third of the students experienced both latent and manifest emotional and behavioral problems, and although the students exhibited pronounced self-focused and self-reflective behavioral activities in daily life and in stressful learning environments, the students' behavioral patterns are not changeable to more reflective ones by self-regulative theoretical positions by scaffolding the teaching of psychology as was done in the second research project. This alludes to the explanation that a student's attentive-interpretative activities manifest suppressive (Roemer & Borkovec, 1994; Wenzlaff et al., 1988, etc.) and intrusive thoughts (Forrester et al., 2002) and initiate dysfunctional behavioral activities in forms of avoidant behavioral chains. If this behavior is to be brought under a student's metacognitive monitoring and evaluation by specific means via behavior monitoring exercises, those behavioral patterns might be changeable to more flexible reflective behavioral chains.

Surface learning is learning of forms by recalling concepts as theoretic facts which do not initiate critical thoughts about and of the object's phenomena; it means learning through dualist theory practice and it occludes an individual's discursive intellect to reflect on things by one's self-referential detaching activities as in the dialectical critical realist position to learning. The former metacognitive, theoretically deduced schematic stance or behavioral orientation to individual learning may lapse into superficial sensations, abstract and biased interpretations, and generalizations of the current state of ontological affairs while not leaving much room for metacognitive thoughts on the underlying multilayered things. Rigid maladaptive metabeliefs and schemes have been a core

issue in mental health problems for decades in CBT conceptualizations and empirical research, and are not quoted here in detail because these elucidations would divert the research objective from emancipation-orientated practice to mere empiricist psychological descriptions of the behaviors. In this paper, surface learning is conceived of as knowledge and learning from, and of, theories in which individual reasoning is 'actualist' and idealistic 'laws' on theoretically compromised average norms of the real opposite and contradictory things and their mediating forces in real life. A dualist position to individual learning means that an individual is not in her metacognitively reflected real contexts, the context of which she is concentrating to search for and obtain, but perhaps not being successful due to tacit lapses into inductive reasoning from past experiences to current things, which occludes the very change in the context in need of being reflected on. If transcendental and dialectical reasoning become undermined by her inductive generalizations, contradictory and hidden forces in relations and related contradictory transfactual forces become excluded in her reasoning. A student's disjointed reflection through inductively reasoned motivational things affects her motivational activities, which are psychologically attributed to a state personality (contrary to an action-orientated personality, see Kuhl & Beckman, 1985) or to extrinsic individual motivation to learn and work (Ryan & Deci, 2000). This self-reflective thinking is idealistic in itself where a student with dominant surface-learning behavioral dispositions and inclinations already regards herself as a deep learner because she does not see these things are not existent while not understanding concurrently that the absented things are real determinate things in her real life. In her learning, she stands out in her ideals and motivation to learn, and if she is not motivated in her concurrent worrying she attributes this shortcoming either to her lack of personal abilities or to the present deficient teaching conditions.

In these teaching groups of introductory psychology, the students who worry have no reasons to evaluate their activity modes and patterns via the new behavior monitoring designs. With their intensive, specific, self-focused conceptualizations, they often appraise their worrying patterns as functional. The students' diffuse behavioral patterns become more accurately verified as their real behaviors via the performed behavior monitoring scaffolds, and therefore their empowerment for strategic learning activities remains as a secondary objective to them as well as to the practitioner, because coaching them does not succeed as a special teaching method, with individual responsibility taking over her present behavioral activities. In cognitive behavioral terms, worrying takes the form of a tacitly established and preferred practical action pattern exemplifying selective attentions, biased interpretation and evaluations. This creates interruptions in a student's identified learning as a problem and hindrance, which must become abolished at first through these safety-seeking activities before she can engage in further learning. In general this descriptive and somewhat explanatory reframing is common in contemporary CBT research on avoidant behaviors, which is an impediment in itself (see Rachman, 1976; Salkovskis, 1996; Wells, 1997; Mathews & Mackintosh, 1998; Clark, 1999; Andrews et al., 2003). This discussion has been featured in the second and third projects.

In the practitioner's attempts to improve the students' reflective problem solving behaviors, the most pivotal pitfall in the students' procrastinating behaviors is their non-assertive expression of emotional experiences. Without going into intricate details about

contemporary CBT approaches to psychological explanations of the behavioral mechanisms of procrastinating behaviors in the realm of cognitions for emancipatory purposes, these explanation reframings unfortunately stay in the descriptive and non-explanatory dual realms (see the previous three projects). From them emerges no way to non-dual explanations of how behind that procrastination lie social-environmental and developmental causes, such as the fact that students experience many challenges in their self-identity pre-adulthood development, and have insufficient learning and social skills to engage with intensive persistent on-task behaviors in their daily learning. A non-dual perspective to explanations is to assess the students' behavioral difficulties in managing their daily activities, and difficulties caused by living on their own in addition to the difficulties in functionally managing their anxieties and tacit despairing reflections. The functionality or dysfunctionality of a student's reflections seems to remain intact through her own validation and verification of her concurrent behaviors. That is why despairing reflection is a diffuse behavioral issue that is not amenable to theoretical resolution. At a group level, among the divergent students it encompasses both frequently enmeshed acceptance-commitment behavior and 'ruminative' and behavioral activities which may not become addressed by their metacognitive reflections for all the students, because it may become reinforced by instructive dualist and untrustworthy educational discourses. A student's passive, sensitive and self-focused behavioral resemblance to individual rumination and worrying may also have individual specific developmental origins, which can suddenly become initiated by the concurrent environmental educational and behavioral challenges.

Furthermore, a student's passive behavioral mode impairs her cognitive problem-solving activities, such as attention, concentration, and decision-making, as proved in the third empirical research project. Particularly the underachieving students, in their anxiety management, exhibited an intrinsic tacit tendency to ignore challenges or to construct contradictory behavioral patterns, and to select incoherent solutions to their real and contradictory developmental challenges and strategic courses in taking actions (see Table 6, p. 289). It was argued previously that a student's behavioral tendency of this kind to engage concurrently with opposite, contradictory behaviors, or to mutually undermining tasks was a manifestation of decreased concreteness, which is the common behavioral feature in individuals with anxiety behavioral problems. It appears that this avoidant behavior, for example, to construe unworkable and behaviorally unmanageable compromises is in itself an avoidant behavioral pattern, because it is an attempt to manage contradictory daily activities by flawed generalizations. Circle interpretations of the behavioral matters between avoidant behaviors and flawed generalizations, as Bhaskar (1993) has elaborated in more detail with respect to illicit fusions and illicit fissions, is not a psychological explanation of the maintenance mechanisms of the very circle. So the only explanatory reframing comes from the practitioner's transcendental and other arguments about how, in this social life, it is possible to set up learning templates for the students to confront what they are avoiding, such as their dysfunctional metabeliefs, by introducing specific CBT treatment means and more particularly behavioral experiments and exposure techniques for the students' exercises. For example, Salkovskis et al. (1999) observe in a laboratory setting that a decrease in avoidant behaviors tends to decrease

worrying. Therefore a direct confrontation is highly recommended, and through the practitioner's strong psychoeducation in this program it may be executable. Practical grounds for their introduction come from social cube explanatory reframing, which points out how the normative and idealized educational preferences for teaching and learning in nursing studies are orientated to continuous reasoning and concludes that the average idealist and irreal norms for real work practice exclude a student's authentic reflection on the real underlying material, namely social and psychological, mechanisms.

As outlined by the recourse to clinical CBT realms in the next subsection, the implementation of these kinds of confrontational behavioral exercises in lay teaching practice seems to be problematic if manageable at all.

2.6 A student's tacit safety-seeking behavior and its re-challenging requires robust cbt psychoeducation

In this subsection, the practitioner's ventures into psychoeducation through behavior monitoring and exercises that address safety-seeking behaviors are discussed, along with the crucial role of the introduction of confrontational methods into these exercises. This specific CBT-informed psychoeducation of both a student's reflective learning and her scrutinizing of her daily behaviors have limited potential when the supervision of a student's learning remains weak and coincidental. This psychoeducation it is not achievable in an ordinary instructive teaching setting, but may be workable here after the previous intensive scaffolding of the students' reflective learning.

2.6.1 CBT research informs the use of confrontational techniques

In the behavior monitoring methodology, there is no practical possibility of inventing additional targeted monitoring methods for challenging the students' thought suppression, and other related safety-seeking behavioral activities. Thought suppressive strategies are manifold, and they are enmeshed in a student's distractions, the identification and confrontation of intrusive and other unwanted thoughts, and in her functional on-task performance activities. It seems impossible to guide the students through these rich and often unconscious thoughts, and it is impossible directly to find means for the strengthening of their more adaptive and dynamic metacognitions so as to manage all their mental thought issues. Despair and despairing thinking and behavioral attempts to search for the direct alleviation of emotional despair may get positive reinforcement from students' social discourses with classmates and teachers. In order to provide psychoeducational means for the students' behavior monitoring exercises, the dialectical critical realist perspective to individual behavioral modalities goes beyond common acceptance and commitment therapeutic practices by allowing and offering not only a commitment, but also an initial template for 'acting on' and 'letting it be' activities. The behavior monitoring package added to the students' daily learning with its deepening behavioral learning procedures, and it includes an option of tailoring the behavioral experiments and exposure techniques to enable individual confrontation of recent daily internal and overt activities. This kind of additional interventional option would not appear unless the constructed platform has been established in the learning structure and process of psychology studies as was done here.

The students' latent safety-seeking behaviors, which are manifested as disruptive and rigid avoidant behavioral activities, such as partial specific divertive activities ('diffuse attending to things', partial concentration, 'jumping to hasty conclusions') have been discussed to a considerable extent in CBT practices. However, with the lack of any specific psychological explanations for these behaviors, direct means for the practitioner to construe and implement the learning protocols tailored to individual behavioral experimenting and exposure training do not exist. However, on the one hand, contemporary CBT –treatments have specific practical applications, such as mindfulness CBT therapies, dialectical therapy and traditional CBT therapies. These contain recently strengthened capacities to deploy metacognitively managed behavioral training protocols. They thus provide the means for setting up specific psychoeducatively managed learning protocols for a student's learning of psychology and for the students' utilization of the confrontational techniques; meanwhile, the basic classroom teaching discourse has become transformed into coaching from instructive teaching and the pinpointing of theoretic learning issues. On the other hand, CBT research has established its general justifications (as has been clarified in the previous subsections) regarding the viewpoint that these mental activities need, and are prone to, an individual's revalidation and revision of her behaviors. For example, based on MacLeod's and Rutherford's (2004) convincing claim that an individual's attention biases may cause her ruminative behavior (in form of trait anxiety behavior), and this maladaptive behavior may in turn escalate to selective processing or to avoiding mental processing of threatening information. This idea of the selective processing of threatening information (e.g. modes of restricted knowledge conceptions, superficial and contradictory conceptualizations) is consistent with Borkovec et al.'s (2004) avoidance theory of worry. In their view, worry is an obvious cognitive avoidance response to a perceived threat, and it is self-evident (ibid, p. 77). The authors might mean by the latter that avoidance has its own determinate laws in terms of its initiation.

In the dialectical, critical realist research position, an individual's avoidant behaviors are metacognitive or metacritical behavioral phenomena, where psychoeducative means are pivotal in the search for supporting a client's identification, re-evaluation and revision of her behavioral activities through behavior monitoring devices. It clearly would require the setting up of behavioral templates for providing direct and confrontational exercises leading to an individual's targeting of, and refocusing on, the real threatening external or internal stimuli. This would be accomplished by the utilization of behavioral experiments and exposures in an individual's confrontation of these threatening stimuli. In the critical realist philosophy, it has been explained that the knowledge of real social and ontological things is required for 'real' knowledge and intentional actions. Confrontation of an individual's 'real' ontological problems is thus the core of the reflective or metacognitively managed problem solving.

However, as seen in the third research project, the deployment of behavior monitoring will possibly remain unstructured and difficult to manage without positive reinforcement (or its recognition) by a student's own attempts to block her maladaptive safety-seeking behaviors. First, it might become identified as feasible by a tacitly worrying student with broken and biased metacognitive reflections and used to attune her monitoring exercises which would support her initial need to divert her attention and though-

ts from internal emotional, physiological and environmental cues. Second, due to her tacit orientations and other shortcomings in continuous on-task performance behaviors, the specifically introduced exercises may interfere with her on-task performance and her acquisition, interpretation, and evaluation of information regarding 'real things of the world'. Therefore, a relevant issue is how to proceed, primarily by using strong psychoeducation and classroom coaching (with meager options for supervision) to provide guidance and support to a student in focusing on and monitoring threatening cues without lapsing into despairing processing and despair sustaining self-reflection. According to MacLeod and Rutherword (2004), suppressive behavioral activities, for example diverting attention from an emerged threat, may be dominant and tend to undermine on-task problem solving activities.

In this fourth research project, the basic monitoring method of validating worrying and functional anxieties, as an integral part of effective problem solving, might not be effective for the students who experience greater difficulties in their monitoring and reflecting. These students simply do not seem to have opportunities to differentiate between their internal opposite forces – two and four different behavioral modalities (see Appendix IIa and IIb). Psychoeducative learning materials (see the forms in Appendix I, IIa, IIb and IIc; written materials for psychoeducation are not presented in this report) are not perceived as feasible and straightforward guidance instructions for performing behavior monitoring by the latently worrying students. However, the completion of the records is crucial for the students' instantaneous supervision and feedback in classroom coaching and in their actual learning; otherwise the entire behavioral exercise program would merely remain as educational templates of behavioral issues which are not understandable by the students.

The practitioner's collaborative supervision of a student's learning is not a mere technique in this project. It is achieved by persistent and stepwise designs and implementations of templates for providing the behavioral means and guides for a student's empirical verification, and for the potential revision of her recent real behaviors. These templates are based on the practitioner's CBT practical knowledge, primarily on his immediate knowledge of a student's recently performed, contextual, real learning behaviors. Particularly important is the practitioner's understanding of the divergent behavioral incentives and purposes of a student's recent daily learning behaviors and her individual ways of performing and recording her behavioral exercises. In any case, the employed mindfulness approach in behavior monitoring is practically acceptable if a student's lapses into despairing self-reflection may be avoided in parallel with, and by means of, identifying on-task performance activities as essential parts of the entire behavior itself. In contrast to the practitioner's opinion, Borkovec et al. (2004) do not consider this threat to be a serious limitation, or if they do, they do not see any means for its confrontation via strong psychoeducation. In this project, the quest for differentiation between worrying and on-task performance activities in individual mindful activities guides the student, in Borkovec et al.'s (2004) words, "… to observe themselves and their environments objectively (which) provides (the clients) the opportunity to introduce the idea of living in the present moment and of paying attention to what actually exists, instead of the illusory world created in their thoughts and images" (ibid, p. 216). In this report, it is argued that

the behavioral modality position is adequate for providing the means for an individual's putting into real practice the author's general idea.

The only alternative technique that might be utilized as a treatment of worrying behavior in CBT is exposure, with its strong covert approach to behavioral experimenting. The other perspective would be a mindfulness stance and its acceptance and commitment practices (Wilson & Murrell, 2004; Martell et al., 2004; Borkovec & Sharpless, 2004). However, because it requires intensive individualistic and client-centered communicative discourses, and still might be weak in addressing an individual's concurrent functional and dysfunctional metacognitive contextual reflections on all the external and internal world things and mechanisms, it is not a viable option in this teaching environment. Definite systematic procedures in a student's training and exercising behavioral protocols for exposure training are targeted to her general avoidant behavioral tendencies, and are practically importable and highly informed by CBT practices for implementation through psychoeducation in a large student group. Exposure training has a sound theoretical basis as a practicing protocol, and the objectives of its use are summarized in literature (see Craske et al., 1992; Brown et al., 1993, pp. 160–3; Andrews et al., 2003, Borkovec et al., 2004). However, its practical applicability in the teaching program is uncertain and controversial, particularly when the treatment package and its practical execution as a stepwise, persistent practical protocol is difficult to understand or perform adequately by a worrying student trapped in the dominant instructive teaching discourses in education. But a workable template for the behavioral monitoring of a student's daily loads in her recent daily rhythmics already exists, set up by psychoedcuative guides, and an introduction to that template is possible and logical so as to integrate exposure training protocols for a student's own chosen addressing of her identified anxiety peaks, blind spots and diffuse despairing moments in her real activity chains.

Attached to the initial behavior-monitoring package, the applied and introduced exposure procedure would directly challenge the students' surface-tended, superficial, emotivist communicative discourses by guiding them towards a direct behavioral activity approach to their anxiety experiences in this teaching program once uncertainty and anxiety behavioral human matters have been dealt with in concurrent learning materials. Superficial emotivist communicative exchanges, often as forms of her flawed and biased abstract generalizations emerging from her loosely grasped behavioral contexts, do not increase a student's understanding and the management of her concurrent real behaviors. Without direct confrontational means to exposure training teaching discourses, an individual's accepting and committing to behavioral obstacles and challenges remains loose and insubstantial if means are not provided for a student's intensive confrontation of her real challenges. Therefore, in this teaching practice, the acceptance and commitment position to maintaining discourses seems to support the dominant instructive teaching and surface learning practices, which need to become weakened. Here it is reasoned that exposure techniques, imported into student learning, would reinforce the individualist and confrontational collaborative position in teaching by providing new means for individual coaching. Together with introduced psychoeducative guides for behavioral experimenting as first steps or introductory means for challenging individual metabeliefs and tacit activity patterns, exposure techniques would be a logical and reasonable treatment

strategy for providing a pathway to incentives for a stronger action-orientated approach to the management of a student's real individual daily challenges. The behavioral experiment route, with its own specific procedures in CBT client practices for a student's engaging with her specific exposure exercises, might be also feasible and effective in a student's beginning to notice and to deal metacognitively with her metaworries, which would be essential for efficient problem-solving behaviors (and perhaps partly addressing dysfunctional ruminating and worrying patterns).

2.6.2 The procedural behavior monitoring line for the students' addressing of their avoidant behaviors

In the enhancement of the students' core behavioral competencies the already established behavior monitoring line is optimal also in the search for the refinement of the scaffolds through confrontational means, which sustains the idea of having changes in open transformative educational social life. That is why all the established scaffolds, such as rich learning materials, coaching, real-time feedback to the students of their recent learning, and supervision of their daily learning behaviors are all essential parts of the psychoeducative guides for the students' addressing of their avoidant and safety-seeking behaviors. Already in the third research project, the basic procedure of software template-managed, behavior monitoring means for the students' learning scaffolds in their psychology studies were developed, which provides behavior scrutinizing means of her real behaviors, and its evaluation and meta-evaluation in her daily rhythmics. The same behavior monitoring means provide direct real-time data on the students' real learning behaviors in all their maladaptive and adaptive perspectives, thus also enabling the practitioner's gradually intensifying supervision and coaching of the student's learning behaviors. The students' execution of their learning activities using the explicitly deployed learning scaffolds through strong written psychoeducation, and the practitioner's CBT-informed interpretative reframing in his interpretation and evaluation of their learning demonstrations in the software template, together provide the means for the students' coaching and the supervision of their learning. It becomes possible in that degree and amount if and when the trustworthiness in teaching–learning discourses becomes stronger. This software template for teaching and learning is also practically workable in supporting the students' executions in the confrontational exercises by psychoeducation and coaching through exposure and behavioral experiments in a more intensive manner than it was practically possible in the third research project. This intensification of confrontational behavioral means is important in order to strengthen assertive teaching–learning discourses, as confrontational techniques would not in general be acceptable and understood at all by the students.

In the behavior monitoring approach using rich, flexible and individually tailored teacher–student discourses, the objective is to instigate and invigorate a student's on-task performance by means of her metacognitive-managed activities. Or, in other words, the objective is to enhance a student's mindfulness competencies as her daily uncertainty management behaviors, supporting her in becoming smoothly aware of and able to differentiate between formal cognitive and metacognitive activities (e.g. metacognitions of individual imagery and conceptual cognitions, while extending Borkovec et al.'s (2004)

formal conceptualizations to mindfulness conceptualizations). The mindfulness-based behaviors of planning future challenges, shortening and avoiding lapses into dysfunctional worrying and conceptual thinking activities may be brought to a student's attention through the applied behavior monitoring and training package, which also provides an option for the practitioner to supervise a student's learning behavior. The practical approach of simultaneous monitoring and validation of a student's avoidant and confrontational (on-task performance) behavioral patterns is a coherent position in ensuring a student's direct confrontation of her contextually arising conceptual and imagistic cognitions. Partial avoidance as well as total avoidance activity patterns to a perceived threat may impair situational appraisal of on-task performance activities, as according to MacLeod and Rutherford (2004) this avoidance occurs when a student's problem solving is biased by her encoding of threatening information (p. 113) in her learning and daily life.

The information processing approach to individual learning and its support described by Borkovec et al. (2004) and by Wells and Matthews (1994; 1996) in the S-REF model is a general reframing that grounds the behavior-monitoring scaffolding means and their practical execution in lay teaching practice. In this research project, the theoretic position signifies the need to guide the students in their behavior monitoring through the divergent and contradictory behavioral forces at work and make them evaluable via divergent behavioral modalities. There are few opportunities to act in cases where a student's worrying persistently prevails and instigates her decreased concreteness, at least in those teaching practices where there are no pre-existing educational and psychotherapeutic templates to be introduced for treating the students' worrying and avoidant behaviors. The aim of this project, through the expanded behavior assessment and psychoeducationally managed scaffolding developed, is to restore the gap between the students' actual behavioral deficiencies and their attempts to abolish their impairments. It requires metacognitive behavior monitoring with a practical orientation to teaching and learning, and having a template for assessment and improvement of the students' learning who worry, and at the same time providing incentives for the other students' learning via the development of core anxiety management competencies.

2.6.3 The psychoeducative strategy for progressing from experiments to exposure training

In this program, behavioral experiments (see Bennett-Levy et al. (2003) for their intense and flexible practical application) do not provide clear and distinct means for a student's challenging of her peak anxiety experiences, but these protocols may provide a psychoeducative route for a student's exercising of exposure training. This is the aim of advising the students to perform behavioral experiments and guiding them, because these experiments might not be sufficient in cases when they experience difficulties in the identification of initiating stimuli, situations, mind-contents to their anxieties and despairing experiences. Without an elaborated analysis here, exposure training is introduced to the students' scrutinizing by not pressurizing them to deploy these exercises. The students are told about the difficulties of exposure training without having individual guidance and these behavioral experiments might be more performable by one's own training. In this program, specific ways of addressing individual metabeliefs about beha-

vioral matters do not emerge like they do in mindfulness-metacognitive therapeutic practices. Therefore the students are taught that in some anxiety-related behavioral problems, like in panic, borderline and dissociative behaviors, strict exercising of exposure training would not be advisable.

The behavioral experiment approach is more feasible and introducible for the students than exposure through the practitioner's written psychoeducative guides. According to Flecknoe and Sanders' (2004) description and outlines, behavior experiments are performable through stepwise procedures that can be descriptively summarized as follows. First, by the identification of the crucial metabelief(s) as one's underlying reasons for behaving in a specific way, then by setting up opposite alternate metabeliefs. If these steps are successfully completed, they point to contradictory behavioral states which need the construction of a specific activity pattern needing to be established in real life, in which one of the alternate metabeliefs turns out to be more feasible and in need of being followed in these behavioral contexts, causing stress and emotional loads precluding optimal gains in one's individual primary behavioral objectives. In this project, the behavioral experiments are consistent with the behavior-monitoring recording approach, as it has already become firmly consolidated in this scaffolding program. It is reasoned that the students with developed tacit behavioral competencies in anxiety management may be able to revise their schematic orientations, or may even benefit from these exercises by performing them before engaging in exposure-related practices.

The previous research project showed that students have pronounced tacit tendencies to seek exact guidelines in their learning. As they were often deprived of addressing their despairing feelings, they tended to increasingly exhibit worrying as the more manifest behavioral expressive pattern, as is the case in clinical settings with clients with anxiety-related problems. It is worthwhile to note that there is no recourse to individual instruction. As shown in the previous research projects, the students' tendencies towards worrying might reinforce their current behavioral activities because their increased arousals or worries (or both) failed to instigate deep self-regulated learning activities of specific kinds at home. Based on the previous projects, it seems that for the students with more pivotal learning difficulties the problem lies in their insufficient smooth consciousness and broken or dualist monitoring of their behaviors at home; therefore the students were not able to find incentives and take on specific learning activities. However, when the other more competent students could develop self-regulated strategic learning competencies and come to see these behavior monitoring exercises as feasible, interesting ways of confirming their rather satisfactory behavioral patterns in their daily lives and studies emerge in their strenghtening of their intentional daily activities.

Also the psychotherapeutic approach and its research practice have shown that strict treatment methods for introducing changes in a client's behaviors may be frequently hazardous. Also here, rigid training protocols may enforce the students' dysfunctional self-regulation and safety-seeking behaviors, and here there is no way to bring about rapid changes in a student's deep cognitive structures. In addition, the students' supervision in the third research project remained fragmented and it was not specially targeted at challenging their (meta)beliefs. The empirical outcomes showed a need for more intensive practitioner's supervision via virtualia, but without any feasible practical template

emerging for tailored supervision that would not lapse into strict instruction. The students' deep schematic structures and orientations in their behavior control resources and patterns are worth taking into consideration: for example, Teasdale et al. (2000) and Segal et al. (2002) have shown that patients with chronic depression tend to exert themselves in attempts to immediately abstain from anxieties and despairs by their specific instrumental activities when the real outcome is increases in anxiety and stress symptoms. It is possible that specific training teaching to quide a student to dwell on her limited self-reflective individual matters would weaken of her broader reflection on real ontological things where her potential maladaptive aned adaptive metabeliefs are possible to become addressed. In that respect, the behavior monitoring protocols deployed here can't have negative consequences of these kinds, while direct communicative therapeutic discourses without concurrently performed tailored behavioral monitoring and experimental scrutinizing means might sometimes bring about such negative outcomes in clinical patients.

If the practitioner is in a position to give immediate feedback to a student on her behavior exercises, and in particular to encourage her by suggestive comments and to provide advice on the novel ways to monitor, appraise and progress with behavioral experiments, it may occasionally open to her the behavioral realm and exposure training and to the practitioner's virtualia supervision of that exercising. In this concurrent and parallel treatment and teaching practice of the students' learning of psychology, psychoeducationally implemented, CBT-training protocols in individual anxiety management embrace the same student's behavioral domain. It shows how to guide the students to reflectively manage intruding feelings and sometimes become stimulated by their reading psychological texts. Via the established learning scaffolds, the practitioner can guide a student's 'real' learning behaviors in a student's lay behavioral realms, and show what specific surface and deep learning activities really mean and what they bring about in a student's individual behaviors. Through these scaffolds for a student's learning, few specific usable techniques emerge to encourage the students' efforts to utilize various optimally constructed and implemented self-monitoring methods in individual management of problematic situations and thoughts.

However, these options to do lay teaching practice in psychology studies might not be enough. The students, in their identity development and maintenance of positive self-esteem and self-conception in these innovative and challenging educational environments, may already retain strong tacit tendencies to utilize thought suppression, which remain intact in this teaching practice. Moreover, the students occasionally behave similarly to those who suffer from borderline personality disorders: such as experiencing diffuse, abrupt and acute emotional and behavioral problems in their daily lives, and not applying self-monitoring in their behavior at levels of metacontrol. According to the third and the second research project's outcomes, the students' behavioral and emotional problems allude to the students' weak metacognitive awareness of their tacit and contextually arising thoughts (Thought Control Questionnaire, Wells & Davies, 1994; the Event Impact Scale, Horowitz et al., 1979; Anxious Thoughts Inventory, Wells, 1994), and the students were frequently not capable of differentiating their behaviors in social situations (Interpersonal Sensitivity Measure, Harb et al., 2002). This indicates robust and spontaneous avoidance behaviors and escalated safety-seeking behaviors, which is tantamount to

one's spontaneous appraising of one's aroused anxiety feelings as negative and threatening. Under the spell of these combined tacit dysfunctional metacognitions, the students may accept their anxiety as dysfunctional, which requires no re-evaluation – and thus they may accept their safety-seeking behaviors as functional in spite of these behaviors' negative consequences for on-task performance.

A variety of psychoeducational resources were available in the third project for challenging students' metabeliefs. But they were relatively inefficient, both in their identification of peak experiences and (or) in their confrontation of aroused anxieties. Both behavioral experimenting and exposure training means are targeted at addressing the students' individual metabeliefs, which also intensify the options for the practitioner's coaching of the students' daily behaviors. For example, graphic psychoeducative presentations must be utilized in describing how an individual's persistent avoidant patterns for alleviating anxiety feelings might actually prolong and increase one's anxieties and distract her from attending to the requisite problem solving activities.

2.6.4 The psychoeducative strategy in promoting the students' exposure training

The exposure training protocols are not easily manageable or feasible through the constructed scaffolds when the students, in their tacit behavioral chains, often lapse into different types of safety-seeking behaviors in thoughts and overt behaviors that vitiate their focused training. The students' safety-seeking patterns are frequently similar to obsessive–compulsive ritualistic patterns, such as intense thought suppression or rigid maladaptive habits. Even student guidance for exposure training might remain only on a general informative level; therefore in particular this explains why the exposure training and the required reactions to abstaining from, and preventing of, safety-seeking activities might not be workable for the tacitly worrying students, but could be workable for students who do not worry about carrying them out.

Direct exposure training would not be a practically workable strategy in treating clients with worrying and generalized anxieties, and this was not the practitioner's purpose in this project. For psychoeducative and classroom coaching purposes, written guides to exposure training protocols were purposefully presented in a collaborative and anti-instructive manner. The students were informed that exposure training, as one's daily and gradually intensifying training practice, performed with simultaneous recording of its execution and outcomes, would support one's search for new behavioral options to confront anxiety-provoking stimuli and provide one with novel behavioral conditions for improving and invigorating of one's daily stress management. In psychoeducation, the accurate evaluation of performance and its outcomes in the exercises for the addressing of individual problematic behavioral activities was highlighted to the students. It was told to the students that in innovative daily management and problem solving, exposure-training methods are an essential part of one's daily management. In fact all individuals in their innovative daily activities tacitly and smoothly perform and apply exposure protocols, because exposure is an essential part of their daily problem solving in the course of planning divergent actionable activity strategies and plans via elaborated behavioral activities.

In this program, the students' psychoeducation for exposure training is described as important but strenuous, and not easily performed in conditions of daily stress and lack of time without having supportive guides for their exercise. Under these living conditions, it is difficult for an individual in these exercises to discern the psychological nature and the degree of the anxiety peaks which are the starting point for engaging with the actual protocols that will enable one to encounter one's consciousness feared and threatening meaningful stimuli. When an individual engages in excessive and mutually reinforcing conjoined safety-seeking activities, the reaction prevention also must be successfully accomplished, but may not be performed successfully via the introduced behavior-experimenting protocols. With limited collaborative supervision of the students being possible in this context, it is not convenient to address both individual safety-seeking behavior and confrontation of the avoided behavioral matters, but it must be left to a student's own choosing. Here it was told to the students that the executions via behavior monitoring exercises in exposure training may not be manageable, but it is worth trying at least for managing minor problems, such as attending lessons, by performing exposure strategies (e.g. meeting a professional, who triggers individual's anxieties, confronting empty despairing moments at home, etc.). These practices may help a student to see the behavioral functions that impair her functional activities via the confrontation of challenging behavioral moments and even by increasing tolerance to anxiety experiences.

The worrying students, in their tacit and relatively strong avoidance behavioral patterns, for example in diverting thoughts to other worries, or lapsing into daydreams, do not seem to be able to identify behavioral chains in their safety seeking. It is noteworthy, and was established in the third research project, that the students' metacognitive beliefs might be not under their intensive and systematic behavioral experimenting at all; in a way this has been affirmed as pivotal in contemporary mindfulness-based, metacognitive therapeutic practices. Exposure training without having individual psychotherapeutic guidance requires a student's strong metacognitive identification of her momentarily arisen anxiety peaks and problematic behaviors, as was already found in the third project where only the more advanced and competent students were successful in monitoring their daily loads by recording.

Based on the outcomes of the three previous empirical research projects, it is rather reasonable for the practitioner to expect that when the students' understanding of the purpose and behavioral nature of confrontational behavioral exercises increases – educationally, psychoeducationally – some of the students may engage in practicing them at least fragmentally; this strengthens teaching and learning templates for coaching and a student's supervision of her learning. In this program, the importation of these learning templates does not bring out apparent risks that the students' worrying and depressive behavior might increase. Theoretically, the latter situation might develop when behavioral modalities are extensively transformed by the pinpointing of a student's symptomatic and problematic behaviors along with her concurrent weak on-task performance behaviors. By applying these confrontational methods in monitoring and its specific exercises, it is also feasible to use the practitioner's constructive feedback, targeted at the student's identification and re-modification of her recent learning activities and strategies. By the practitioner's identifying the deficiencies in a student's learning operations, this supervi-

sion stands for an empirical verification of a student's learning activities and efforts. The primary objective of the supervision is not to categorize and label this behavior in abstract terms, but to evaluate its effectiveness in enabling a student's learning outcomes and in ensuring the adequacy in her recordings in the deployed modality perspectives.

This confrontational strategy in behavior recording and the practitioner's virtualia-software template supervision may in turn improve the implementation of coaching in classroom-based teaching. This is reasonable to expect, because it was demonstrated in the third research project that the students' safety-seeking behaviors do not frequently indicate any type of clinical anxiety disorders. In any case, even though the exposure training does not seem to cause any deterioration in the students' learning and in their well-being, this training is not vigorously encouraged. On the contrary, when a student demonstrates no fresh and novel seeing of the modal nature (for example, is safety seeking more dominant than on-task performance behaviors in a given behavioral situation?) of her contextual daily activities in her monitoring records, exposure training is covertly discouraged through guiding a student to select the metacognitive evaluative position out of all other recording options by other recording means provided to her. Thus, the confrontational methods might provide all the students with at least a general psychological knowledge of an individual's potential dysfunctional avoidances, either partial or complete individual activities in one's perceptions, interpretations, overt activities, and so on. This general knowledge of human nature, especially the feasibility of exposure training, would also initiate a student's re-examination of her avoidant (e.g. her emotivist, support seeking and superficial communicative styles) social behaviors, and such knowledge would change her positions from anxiety feelings to more positive and confrontational paths.

Finally, these behavior methods would encourage the increased transition from instructive teaching – lecturing and presentations of abstract norms and superficial theories – to coaching, and even collaborative supervision of the students' 'real' social learning behaviors. Intentional and reflective actions cannot be promoted otherwise, due to the prevalence of the students' surface learning activities and of their unidentified, dysfunctional metacognitive beliefs and schemata. Any other direct technique of utilizing and improving specified consultative methods to counteract the students' tacit inclination to attend the practitioner's instructions and to react to them would abolish the primary learning objective to learn about human behavior and about the nature of individual metacognitive learning.

From the first to the third research projects, the basic scaffolds in initiating self-regulated learning were established. That teaching and learning platform was practically workable and reasonable to intensify learning scaffolds via the psychoeducative incorporation of the CB- informed treatment methods for a student's identification of, and dealing with, rumination and worry. In this research project, the workable platform enabled the practitioner's implementation of confrontational methods that were incorporated into the students' behavior monitoring protocols in the course's continuous run, and these provided means for an empirical investigation of its workability and feasibility in the realm of individual core functional and dysfunctional behavior competencies.

The confrontational behavioral 'tests' of a student's direct addressing of peaks and moments of despair also serves as a template for a student's exercises in her exposure training. Along the lines of the five-step procedure described by Brown et al. (1993, pp. 160–1) and the general formula of graded exposure presented by Andrews et al. (2003, pp. 114–121), gradual exposure was introduced to a student's training via psychoeducation. The primary proposed idea in psychoeducation was not the application of this method to a student's core problems with anxiety-provoking images or situations, but to acquire comprehension of the fact that an individual might have avoidant behaviors and that she could employ specific exercises and training methods to manage these despairing mental or environmental stimuli. It was emphasized during the course that the introduced behavioral monitoring and training methods had to be learned at first with an ongoing increase in the understanding of their profound nature and efficiency in treating a great number of mental and health problems and improving of one's reflective social problem-solving behaviors. It was also underlined that using these methods spontaneously and continuously in everyday dynamic problem solving and life was not simple to learn and to practice when an individual was experiencing stress and other daily difficulties.

Based on the specific CBT treatment procedures, the psychoeducation in this program also includes the information needed by the students in that the entire training protocols might not be appropriate for a student's use if they are not positively appraised by her, and that this training frequently requires a collaborative template for supervision in order to achieve the optimal performance of the training protocols. In addition, it was also emphasized that the students must be first trained in the previous monitoring and recording methods that had been presented during the first and second phases. Furthermore, starting with behavioral experiments would be more beneficial than proceeding directly to the exposure training if the training is clearly incomplete and fragmentary without any ongoing individual practice. Targeted at the main individual behavioral patterns and habits, these behavioral experiments would provide another opportunity for a student to locate the entrenched and hidden anxiety-provoking and safety-seeking behaviors through catching the anxiety feeling and content initiating stimuli and then confronting these by exposure training. In the CBT treatment protocols, behavior monitoring devices were also used to guide the students about how viable it might be to identify and arrange procedures (such as designs to behavioral plans for specific activities, prioritization of problems, empirical testing of measuring their significance of the pinpointed problems, etc.) for preparing the ground for deployments of stepwise exposure training (see for example, Butler 1999, pp. 100–114).

2.7 The refined package in behavior monitoring exercises

The procedural package in behavior monitoring exercises is described only in general terms by highlighting its gradual deepening into confrontational means without demonstrating it practical performance protocols, because the research objective is to determine its workability and feasibility in this teaching program. The package is based on numerous theoretical (e.g. information theories) foundations, but it is derived from the attained assessment of the students' behaviors in the social cube reframing. The assessment provides the practitioner with options to guide and supervise a student in her behavior mon-

itoring and exercising. The objective is to support a student's improvement of her on-task performance and metacognitive behaviors, and thus of the students' uncertainty management behavioral competencies. The entire procedural package is extensive, flexible and tailored for providing student guidance on how to perform her specific behavioral monitoring exercises in small steps depending on a student's competency levels, which can be roughly seen by the practitioner through her recent recordings.

The practitioner's purpose in introducing behavior monitoring protocols and the CBT-informed treatment endeavors is to overcome the flaws of guiding the students through instruction in these educational practices. However, in this research project and teaching program, face-to-face teacher–student communication might also be flawed if this program to invigorate a student's training in confrontational means does not get started by a large number of the students. It might occur that the extensive and flexible behavior monitoring devices and instructions might not be deployed, and this research investigated whether this is the case, whether in fact the students' learning of psychology and their training in behavior monitoring protocols might take their place to a degree and amount the students find within their resources. It must be ensured from the beginning that at least the students' learning of psychology does not get hampered and all the students generally are able to pass the course if they perform some surface learning activities at a minimum. But these dangers of the practitioner's sabotaging of the students' basic learning are avoidable when behavior monitoring exercises are voluntary and not reinforced by direct instruction, there are possibilities to the use of teaching means, such as coaching and psychoeducation in classroom sessions to giving suggestions, behavioral protocols and confirmative feedback on one's real learning behaviors. Hence, it is argued in this project that with the firm behavior monitoring approach, the practitioner can guide (and not only instruct) a student on the most practically workable recording techniques for her. For reaching at these educational objectives, different options for recording techniques must be presented (see Appendix IVb and its specific re-targeting to confront individual worrying and avoidance) for a student's selection, and incorporated into her daily learning activities.

In the all devised and introduced behavior-recording techniques, the students' objective is laid out for their reflective appraising, reappraising and re-modification of their contextual behaviors from the introduced modality approaches in their concurrent identification of their functional and dysfunctional behaviors as they come out in their contradictory behavioral forces and behavioral tendencies. As subjectively and contextually arisen reflections and reasoned estimates, behavior records are open to one's continuous changes and revisions and to one's search for new behavioral modifications in one's daily scrutinizing and behaving. This individual continuous reflective evaluation involves all levels of individual's recourses and activities, and with its basic two-dimensionality (functional – dysfunctional; or negative – positive) with regard to the applied reframing of one's identifying and appraising of one's behaviors, the behavior monitoring protocols stand as a template for a student's attempts to improve her goal orientated and contextual behaviors, preferably as mindfully managed. Due to the fact that the techniques and protocols are derived from the practitioner's assessments of the students' adaptive and

maladaptive behaviors, they do not require specific theoretic foundation but they need theoretic affirmation at least, as is the case here.

The selected approach to incorporating CBT treatment means to behavior monitoring exercises in order to increase the students' reflective problem-solving activities by concentrating on focusing on a student's continuous awareness of her underlying opposite behavioral forces (elucidated as behavioral modalities) is proffered as the most appropriate in this educational practice. The practitioner's direct supervision, by instructing the students in their learning of theoretic issues, does not enhance the students' mindfully managed, spontaneous metacognitive problem-solving activities. And these instructive means also directly contradict the behavior monitoring approach, because instructive means do not enable the students to identify and evaluate their behaviors as functional or dysfunctional, as might emerge in a given behavioral situation.

The first task is an invigoration of a student's (1) monitoring and recording of daily rhythmics (not only her symptomatic but target behaviors as well), see Appendix IIa. If any 'hot points' or peak anxiety experiences surface in a student's identification, they might initiate the student's identification of her (2) negative automatic thoughts beyond her peak anxiety experiences, and challenge and re-modify negative and intruding thoughts in her metacognitive reasoning. And then her metacognitive thinking may become enhanced and escalated to smoothly managing her metacognitions, thus shedding her rigid dysfunctional metacognitive schemata. A student may find successful outcomes in her exercises, and especially she may become aware of her divergent behavioral metacognitive tendencies towards worrying as well as of functional problem solving, and she may accept some worrying thoughts as essential features in her problem-solving behaviors. That is a feasible practicing template for her to move on to monitoring (3) the validation of her real learning behaviors in her learning of psychology from the modality perspectives, and by so doing even to invigorate her concentration and deep learning (see Appendix IIb). All these first protocols in behavior monitoring practicing might provide the student with options to pinpoint her avoidant behavioral patterns, that had surfaced in her daily learning and living, such as threat initiating situations and thought contents; then she might re-validate this behavior and confront the initiated threat by (4) the confrontational techniques and exercises in behavioral experiments and exposure-related techniques. Then, some students with more flexible and developed reflective competencies might focus spontaneously on their specific and most urgent learning activities by (5) monitoring thought flow, for example, monitoring their behaviors in reading psychological texts, or by monitoring their concentration and behavioral modalities, occurring during a classroom session, and so on. These exercises would provide the student with more accurate data on her metacognitive competencies in behavior management and on her potential suppression tendencies, and similarly these records would provide data for the practitioner to supervise a student's daily learning behaviors. In the last phase in a student's exercising, a student might (6) select her own methods more accurately from the gradually, intensifying monitoring package by taking account of her weaknesses and strengths, in managing them with daily loads and stressful situations environments, and of the practitioner's software and classroom coaching and move on to performing her

monitoring on a more spontaneous and continuous basis without the constant application of stepwise recording techniques.

Behavioral experiments and exposure-related methods were incorporated organically into the entire teaching program on human nature and to human reflective individual recourses. Thus the exercises were relatively directly tied and attuned to the course's educational learning objectives; therefore exercises in behavior monitoring did not have any separate aims, their educational aim was to bring back if possible a student's smooth understanding of her individual and contextually managed behavior in working and reflective doing. The special practicing protocols in behavior monitoring might entail and produce distractions, reappraisal, as well as thought suppression behavioral strategies, where particularly thought suppression might be dysfunctional, as Purdon and Clark (2001) showed for clients with obsessive thinking patterns. These latter thinking modes seem to be crucial in causing depressive moods and initiating safety-seeking behaviors. Although thought suppression is a difficult task to address by any methods, at least these additional recording techniques (behavioral experiments and exposures) serve as an educational, psychoeducational and preventive learning objective in encouraging the students to focus on their innovative learning and on their rich, dynamic and reflective mental operations.

In general, it was found more clearly in the third project that the students demonstrated thought-suppressive behavioral strategies; commonly these strategies were not specifically compulsive in nature, but tacit turns to widely deployed safety-seeking strategies to divert one's reflecting on one's emotional contents. It might be difficult for a student to take these safety-seeking behaviors as seriously needing her direct confrontation. In her pre-adulthood developmental situation, her self-conception is diffuse and she suffers from a constant lack of positive self-efficacy experiences – she has gotten accustomed to these due to her current demanding living challenges and daily shortcomings in readily engaged options relating to recreational activities. That is why these confrontational methods are incorporated for an initiation of a student's mindfulness behaviors, by encouraging her acceptance and commitment to the new living challenges. A student's engagement in practicing confrontational methods might decrease her worrying and despairing moods or improve flexible metacognitive control over her troubles by the utilization of more tailored behavior monitoring methods, as employed in the fifth phase of the behavior monitoring exercises. The objective of this entire behavior monitoring package is to enable a student to target her behavior monitoring mindfully and more efficiently in regards to her learning activities and to her learning outcomes. In the individual behavioral management of her uncertainties a student's objective is to avoid worries but to accept uncertainties and emotional thoughts as an essential part of her daily behaviors and daily behavioral management, which is blended with concentration, attention and motivational management.

In the mindfulness-based cognitive psychotherapy literature, it has been shown that unconscious extreme vigilance in an individual's metacontrol might be the core reason for the initiation of more intense activities for thought suppression. If this recording method for enhancing mindfulness activities is applicable in this project, it would signify that a student experiencing and recognizing problems in her concentration and other

learning activities might be able to develop gradually her learning activities in psychological and problematic behavioral issues, which are not reachable by purely rational thoughts. There arises a possibility for the practitioner to encourage the students to evaluate their learning outcomes constantly, providing an instantaneous behavioral feedback on her concurrent learning activities (see the guided monitoring formula Appendix IIb). As a result, a student might become conscious of her deficits in appraising her recent real behaviors and her turning to maladaptive behavioral chains (and her tacit miscalculations of her learning outcomes caused by her lapses into hopeful thinking and other safety-seeking behaviors – such as 'caught some common concepts when reading', 'found some examples of my own when reading', 'found ways to revise and cognitively reconstruct these literary conceptualizations', 'evaluated and found limits, and problems in applying these issues to some private or vocational real life conditions'). That behavior evaluation might help her to accept these behavioral incidents and the reasons for her insufficient concentration and present learning activities, which had been submerged and which are not feasible to repair directly, but through this monitoring of her functional behaviors she could gain a spontaneous recovery through the continuous performance of these exercises in learning and daily behaviors.

The entire behavior monitoring package is presented in Appendix IVb. This package has been already implemented in the third research project, with one exception, that is the practicing protocols for her progressing more intensively into confrontational exercises.

3. RESEARCH ON THE FEASIBILITY OF RE-TAILORED BEHAVIOR MONITORING EXERCISES FOR THE DEVELOPMENT OF STUDENTS' BEHAVIORAL COMPETENCIES

The research setting and the deployment of CBT questionnaires in pre- and post-test settings were already constructed in the second and third research projects, and here also they provide the basis for measuring and assessing the feasibility of the refined and implemented scaffolds in the students' daily learning. This fourth research project progresses similarly to the third one, but single-case analyses are not presented because the scaffolds did not bring out serious deteriorations or significant improvements to the students' learning and in their dysfunctional behavioral competencies. In this research project, the teaching program for researching the feasibility of the executed scaffolding in the spring of 2004 was extended to three large student groups (groups D1, D2, D3) in 2005–2006 academic years. The attained empirical data enables the practitioner to distinguish and evaluate whether the attained outcomes in the researched behavioral domains are outcomes of the implemented scaffolding.

3.1 Further scaffolding for a student's abandoning of safety-seeking behaviors

The refined program of scaffolding of student learning about human nature was presented in previous sections. Next, the practical and strategic reasons for the improvement

of behavior monitoring exercises and their implementation as a part of psychology studies are summarized. First, although these additional and sophisticated CBT interventions for homework have not been extremely difficult for the students in general, their impact on the students' self-regulated or metacognitively managed learning has been moderate and ambiguous. Second, the general position of applying cognitive behavioral interventions in guiding the students to manage their mild anxiety problems and disorders is targeted towards each student's behavioral problems by encouraging her to take a 'real' initiative in re-challenging her contextual behaviors. Third, these CBT interventions to support a student's strategies in the management of her avoidant behaviors have previously failed, and therefore there are grounds for employing more confrontational strategies in behavioral monitoring training and learning psychology. Fourth and last, because in the third research project no dysfunctional disruptions in a student's learning through this intense scaffolding had surfaced, the preservation of the entire teaching and learning structure and its dynamics is workable, and it is also feasible to implement these self-regulated learning scaffolds individually by providing the students with concurrent guidance and supervision of their daily learning behaviors. The confrontational approach to validating an individual's behavior might provide additional options for this intensive supervision, which remains to be ascertained in this research project.

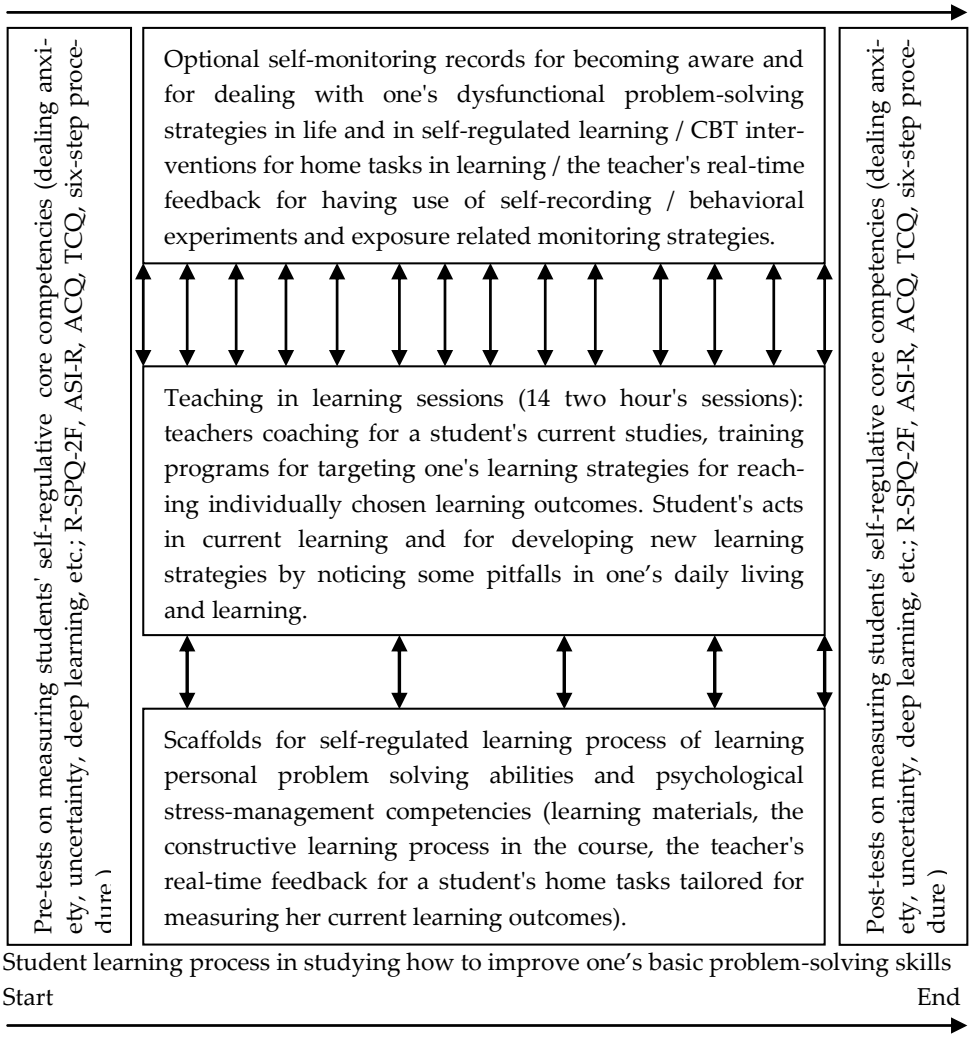
3.2 The advanced package for the scaffolding of a student's learning of psychology

Appendix IVb describes how these behavioral experiments and exposure procedures (as in vivo and imaginary exposures) were implemented and integrated into a student's learning via psychoeducation, and with the utilization of supportive counseling and guidance. Numerous complications might surface in the application of these sophisticated strategies for monitoring and evaluating an individual's own behaviors. If implemented unsuccessfully by the practitioner, these procedures might ultimately aggravate or even initiate the students' anxiety-related problems. The entire scaffolding is explained here as a multi-process package, whose practical implementation is described in Figure 2, in particular retargeting the consolidated teaching program in a gradually enriched structure to practice as it was presented in the first, second and third reports (see pages 87, 158 and 267).

In Figure 2 the presentation of the complete constructed scaffolding as the process of its gradual introduction and integration into a student's learning in psychology studies is outlined. It (1) shows how the intensification of implementations of CBT-confrontational training methods enter into the students' practicing of their daily learning as a part of the entire scaffolding structure, and (2) it provides options for the practitioner's search for discovering means and deploying software-managed supervision quite directly in a confrontational but encouraging manner for each student's daily learning. More significantly, (3) via the importation of confrontational methods, it encourages a student to engage in intensive active problem solving, to accept individual learning obstacles, and concurrently to liberate herself from tacit demi-real group norms, which maintain and are the outcomes of the superficial and worry-inducing communicative discourses. In the execution of the constructed scaffolding, it is profoundly important to seek a gradual decline of

instructive teaching discourses and an escalation of collaborative supervision and coaching in teaching.

Figure 2. The graphic presentation of the teaching structure and learning scaffolds in teaching psychology (the whole and stepwise enriched teaching process attained via four empirical research projects in this teaching)



Markings:

- The arrows connote the teacher's supervision and reciprocal communication with the student in her learning activities
- The three-layered structure of scaffolding of a student's learning:
  - The first layer is the basic process of learning activities and evaluations of a student's current learning outcomes when she focuses her learning on constructive psychology and metacognitive problem solving in the learning materials. Here, the teacher evaluates and encourages the student's learning activities. How she can evaluate and relate these psychological and conceptual ideas, approaches, and concepts in her thoughts, trying to get

glimpses of the conceptual richness and problems of psychological explanations? How can the student concretely apply and have personal searches for the subjective sense of these conceptual viewpoints, understanding and cognitive restructurings of the learning issues and materials/the teacher's attuned feedback to the student's behavioral problems and invested efforts in doing her learning?

- The second layer as an interactive discourse indicates the teacher's coaching when supporting and motivating students in their individually supervised (and two separate) learning activities. Here the teacher, by collaborative supervising, encourages the student's self-directed management of her homework and her partaking in lessons. It is a real-time arrangement enabled by software tools; here the teacher supervises the student's pinpointing in her recordings, and all her other learning procedures, as for example her behavior in dealing with her daily problematic situations.

- The third layer is its own learning structure and a self-monitoring process of divergent and mutually conjoined and reinforced cognitive behavioral tools, aimed at enabling more spontaneous mindfulness-based activities and methods towards its strengthening. All these layers and their mediating structures at the level of a student's learning activities are possible to maintain via internet templates in a mutual collaborative network, where the students have their own access to the use of it, and where the teacher presets the teaching and learning process all along the course.

3.3 Research questions

The initial approach to the research on the impact of the implemented scaffolding on the students' learning and problem solving has been adequately defined and explained in the third research project, and there is no need for its further modification. Worth noticing is how extraordinary the finding was that the social cube reframing, both in the assessment of the students' daily learning behaviors and in the derivation of the refined scaffolding program, became possible and was adequate. The latter means were introductions to each of the students' tailored recording and training means in behavioral experimenting and exposure training.

The practitioner's objective in the third research project was to construct an appropriate practitioner's virtualia –software-managed psychoeducative and supervision strategy; in this project this was moved toward a more intensive and coaching-based supervision in even larger sections of the students, because the specific CBT-informed supervision by motivational interviewing and other highly smooth and confrontational collaborative discourses turned out to be workable despite many students' difficulties in determining its feasibility for their real learning.

The main differences between this program and the third project are: first, this additional scaffolding aims to guide and encourage the students to employ particularly confrontational behavior monitoring strategies (behavioral experiments and exposures) to the behavior exercises and training; and second, the utilization of the tailored psychoeducational guides and of the teacher-practitioner's intensified virtualia supervision. These refinements cause great potential risks to the students' performance of their psychology studies, because those risks could totally break their psychology studies, and their basic

learning progress in nursing studies might become severely impaired. Fortunately, the practitioner's deep commitment to introducing improvements into the psychology course is based on his three earlier research projects; these practical interventions thus have firm grounds.

In spite of the fact that the practitioner's research endeavors were not officially accepted by the management in order to have a stable basis for his innovations, the program was possible to accomplish within the traditional psychology course, because it had already been under the practitioner's vigorous improvements for many years as was described in the first three research projects. The research objective was to empirically investigate whether the novel refined program was feasible in the enhancement of the students' metacognitive learning without hampering their initially dominant surface learning. In the real teaching practice, the program's implementation proved to be successful and allowed a student's free choice of her learning objectives. Therefore in this research the practitioner's emphasis was to demonstrate the program's feasibility on the students' metacognitive core competencies by interpreting and meta-evaluating minor changes in the students' scores on the CBT questionnaires. When the students do not exercise continuous and persistent performance in behavior monitoring and training protocols, other data on the students' behavior is essential in order not to draw hasty conclusions of the general reasons of the students' broken, disjointed and fluctuating learning behaviors. Because here the research objective is primarily to conclude whether the scaffolding program is feasible generally, there is no need to present empirical single-case analyses as was already analyzed in the third research project: these variations occur in many directions also due to individual reasons.

The complete research setting in its theoretical bases with respect to the measured research variables is presented in Figure 3. The research questions regarding the students' core behavioral competencies are the same as in the third research project:

1. Domain: The nature of the students' learning styles and their pre- and post-test stability (deep and surface learning).

2. Domain: The pre- and post-test stability of the students' core behavioral competencies (the persistence of competencies in managing individual anxieties) and their concurrent deficiencies in anxiety management.

3. Domain: The vitality of the students' reflective problem-solving competencies.

4. Domain: The end state divergence in the students' core behavioral competencies and of their concurrent deficiencies.

The first and the second research domains provide a detailed account of the practical execution of the teaching program, whereas the third and the fourth research domains' focus are on the optimal workability and feasibility of the completed teaching program. The report is written so that the reader can read some empirical outcomes directly without necessarily having familiarity with the teaching of psychology and the concurrent research on its feasibility.

3.4 The pre- and post-test research setting for measuring the students' competencies

First, the entire research setting in introducing behavioral dimensions for their measuring via CBT questionnaires is presented (Figure 3): the ways the imported CBT questionnaires focus on behavioral competencies in individual anxiety and uncertainty management in learning and daily management. Then, the psychological features of CBT questionnaires are analyzed and pondered, in which the basic interest lies in whether the questionnaires are reliable regarding their sub-dimensions' internal consistencies.

3.4.1 The practitioner's strategy for the deployment of the CBT questionnaires

In the third research project, measurement of the pre-test and post-test setting was accomplished successfully in deep anxiety-management behavioral realms, and the standardized CBT questionnaires and the practitioner's real-time recording of the students' 'real' recent learning behaviors were the pivotal data which enabled the practitioner's functional behavioral assessment of the students' daily learning behaviors.

This research setting is workable, but to choose the most optimal CBT questionnaires requires re-evaluation here. The most pivotal shortcomings in the deployed questionnaires were in the third research project: the RRS questionnaire's insufficient ability to differentiate the relative strength between a student's rumination and reflective pondering; therefore the questionnaire was replaced by the Intolerance of Uncertainty Scale (IUS) and the Thought Control Questionnaire (TCQ). The latter was already introduced for students' scoring in the second research project, and it was taken up here also for many reasons after noticing that a means did not exist to measure directly how strong the students' metacognitive-mindfulness competencies in behaving under their constrained daily rhythmic might be. First, the TCQ enables the practitioner's sharper focus on a student's small pre- and post-test changes across divergent thought control strategies: for example how a student in her behavior manages her worrying and anxiety initiating thoughts. Secondly, the questionnaire indicates adequately the students' reappraisal of thinking strategies that are in pivotal in individual cognitive problem solving. Thirdly, for the practitioner it serves as a measure in his assessment of the workability and feasibility of the entire learning program introduced across all four separate research projects' programs. It may enable the practitioner's seeing whether there were any potential positive achievements in the students' reflective learning and their underlying competencies in uncertainty management between the second and the fourth teaching projects. And lastly, because of the measure's vast exhaustive approach to many individually different and discernable thinking strategies in managing tacit anxiety-related thoughts, it provides empirical data for the practitioner's CBT-informed validation of his conclusions about the types of changes in the students' core competencies (which potentially emerge because of the implemented scaffolds to the students' daily learning).

Although the applied Two Study Process questionnaire and the Anxiety Control Questionnaire (ACQ) are compatible also with this project's research objectives it is vital to be aware of their limitations with respect to reliability issues. For example, the Two Study Process Questionnaire overestimates the students' 'deep' or self-regulated learning

Figure 3. The multidimensional package in CBT screens and questionnaires for the empirical enquiry

Behavioral dispositions and behavioral self-regulative competencies and their deficiencies in learning and daily living	Behavioral constructs to be empirically tested in three separate empirical laboratory teaching-research projects	Measurements for analyzing competencies and their potential development in test- re-test conditions, the questionnaires marked with an asterisk were described in the second and the third project	Measures for assessment of the feasibility of potential development in the students' behavior competencies
self-regulated learning and behavioral competencies, its deficiencies as anxiety-related behavioral problems	- behavioral learning style, groups D1 (nursing), D2 (health worker), D3 (nursing); (surface-deep learning) - anxiety control (weak-strong, groups D1, D2, D3) - reflective modalities (depressive, ruminative and reflective pondering styles), group D2 - competencies of managing uncertainties in metacognitive behavior, groups D1, D2 - thought-control strategies (group D3) - stepwise problem-solving task, groups D1,D2 -validating criteria of assessment of the significance of the students' depressive problems, group D1	R-SPQ-2F (Biggs et al., 2001)* ACQ (Rapee et al., 1996)* RRS (Treynor et al., 2003)* IUS (Freeston et al., 1994; Buhr & Dugas, 2002) TCQ (Wells & Davies, 1994)* stepwise problem-solving record (invented in the third research project)* BDI (Beck et al., 1961)	- Contingency analyses of (variations?) changes in pre- and post-test -Behavior observation, the analysis of learning outcomes - The teacher's recording of the students' learning activities in psychology as behavior monitoring recordings -Multivariate analyses of the implemented CBT questionnaires, in particular, factor analyses across all the CBT questionnaire's (sub)dimensions

and the three sub-dimensions of the ACQ may be unreliable. Especially the sub-dimension of emotional control may not be sufficiently reliable in its internal consistency (as was noticed in the third research project), therefore not warranting analyses of pre and -post-test outcomes.

There was no real option for adopting additional measures in this research setting. For example, questionnaires that comprise an excessive number of items do not cohere with, and don't fit into, the complete test package, one which would be practically manageable for the students to complete within the available time limits when accounting for the students' concentrative capacities to work in a classroom setting. It was found in the earlier research projects that it is feasible to complete the four CBT questionnaires in an hour in order to provide data for the practitioner's meta-critical evaluation of the feasibility of the implemented novel scaffolds. The practitioner's data analyses and especially his meta-evaluation of the research outcomes go beyond mere rigid statistical analyses of the data obtained from these CBT questionnaires, because this research position is primarily focused on individual outcomes, albeit the outcomes here are presented at subgroup and group level.

The practitioner's empirical measurement of, and conclusions about, the workability and feasibility of the constructed and implemented CBT program is based on rich real-time data on the students' behaviors, both through their own scoring of CBT questionnaires and through his observations, classroom coaching and supervision as well as via his records of the students' recording their learning, as well as their learning outcomes in the course's five progressive stages. Thus the deployed CBT questionnaires provide only validating data for the practitioner's assessments, because it is necessary to take into account the fact that a variety of commonly used and standardized CBT questionnaires do not address, or are not feasible for, measuring potential changes in deep individual functional-dysfunctional anxiety-related metacognitive behavioral management orientations and strategies. Potentially usable CBT questionnaires do not exist which would explicitly sustain the dialectical critical realist stance to an individual's opposite internal forces and powers so that both functional and dysfunctional behavioral competencies might become addressed in their vital and opposite behavioral forces at work behind an individual's daily behaviors. In any case, in the CBT considerations the utilized questionnaires must cover both the quantitative and qualitative behavioral factors of an individual's behavioral core anxiety-management competencies in order to provide a measurement tool that is sufficiently sensitive to indicate an individual's relevant maladaptive and adaptive behavioral tendencies and orientations.

It was concluded that these measures were decidedly justified: the second and third research projects laid a firm foundation for this conclusion. There was a specific need to include questionnaires with high reliability in clinical client settings. However, the additional validation of the severity of the students' anxiety and depressive problems in a clinical sense was achieved by the Beck's Depression Inventory (BD1), even though it does not have a differential ability to measure the potential pre- and post-test changes in depressive symptoms, for which this scaffolding was not specifically tailored.

Furthermore, the selected questionnaires do seem to measure accurately the research dimensions depicted earlier as the research questions in this expanded scope of beha-

vioral core competencies, as was required for each of the three student groups. The CBT questionnaires cover both maladaptive and reflective behavioral patterns in the core behavioral competency sphere, related to uncertainty and anxiety management. They enable the comparisons of the empirical outcomes achieved by the most optimal scaffolds for the students' learning of psychology from the second to the fourth research project. The program was extended also to the fifth research project, but they are not presented in more detail in this project because the optimal scaffolding had already been found and became established as a firm teaching template for psychology and even for the students' studies on the introductory sociology course. The fifth research project mentioned was performed in three student groups (E1, E2, E3) during the 2006/2007 the academic year. These outcomes are not specifically presented, because they are in general accordance with the outcomes in the fourth research project and therefore they do not re-question the achieved optimal teaching framework in this social educational practice of teaching psychology. Therefore, some of these empirical outcomes are presented in Table 11 b only as comparative results.

The applied CBT questionnaires, which have already been deployed in the earlier projects, are not discussed here. However, the newly introduced CBT questionnaires, namely the IUS and the BDI, are presented here in the context of analyzing their internal consistencies.

Due to the lack of opportunity to conduct randomized clinical trials and statistical comparative analyses, standard deviations and factor analyses (varimax solution) are the appropriate analysis methods. Although there are a variety of social and other factors that are vitally conjoined in their causally efficient relations with the students' learning and daily living, no additional multivariate analyses are required. Multivariate analyses do not prove or falsify the practitioner's meta-critical evaluative attempts to establish the most optimal scaffolding and their practical execution in the students' learning. The means for each CBT questionnaire's dimensions or sub-dimensions stand as the empirical data for the practitioner's reflections on what kinds of deep behavioral competencies in individual anxiety management the students have, and an increase in functional or dysfunctional student competencies has occurred. The IUS and the BDI questionnaires are taken as two dimensional (weak and insufficient or moderate and sufficient behavioral competencies in uncertainty management), where a student's higher means or total scores indicate underdeveloped reflective competencies and maladaptive behavioral tendencies. Unfortunately no space for explicit elaboration on how the practitioner works in his meta-critical or reflective readings of the empirical outcomes on the CBT questionnaires exists here. The main goal is to understand that anxiety management may be more or less functional or dysfunctional, the latter meaning that a student even without her noticing is affected by the pain of her despair and sudden disruptive thoughts and emotions. For example, if means are high in the ACQ (total score), the reflective pondering subscale in the Ruminative Responses Scale (RRS) and the reappraisal subscale in the TCQ, but low in the IUS (total score), it indicates that a student's metacognitive or behavioral core competencies are developed and reflective. A student's well-developed core competencies may also emerge through lower means in RRS worrying and depressive subscales, but only if means are higher in the reflective pondering subscale than in TCQ

subscales of worrying, social support, and distraction. The utilized CBT questionnaires provide direct data on the workability and the feasibility of the teaching project, especially on its scaffolding via behavior monitoring records. In addition, single cases were analyzed, but their outcomes are not presented in this research report, and the students' real learning activities were taken into account in the validations of the empirical outcomes about the feasibility of the implemented scaffolding.

The potential pre- and post-test changes are presented in a similar vein to the third research project, where specifically Chambless and Gillis' (1993) effect size formula stands for a rough estimate in assessing the scope of the pre- and post-test changes.

3.4.2 Delineation of the measured behavioral domains

The behavioral domains stand for the students' self-monitoring, recording skills and competencies in individual anxiety management, from which a behavioral realm emerges as a template for her behaving in, and living with, a subject–object dualist ontological world. This is the dialectical critical realist position, and its stipulation is that in human knowing every individual, if a being at all, must have knowledge of her environment. And this individual position to one's monitoring and evaluation of her present and recent behaviors becomes addressed via the deployed CBT questionnaires. Thus, in this project there are no specific theory-informed derivations of research constructs and deployments in the specifically designed measurement instruments. On the critical realist perspective of functional and dysfunctional behavior management, a student's scores in the CBT questionnaires indicate, demonstrate and exemplify how she observes, perceives, appraises and evaluates (perhaps and hopefully even metacritically) her current behavioral activities in managing with all things in her dynamic and constrained life.

Self-regulated or metacognitive behavioral deficiencies in individual monitoring and self-evaluations manifest themselves as one's maladaptive behaviors and behavioral lapses into surface learning with inadequate strategic management of one's learning activities. As was already discovered in the first and second research projects earlier, when the students have flaws in the behavioral core of their metacognitively managed behavioral control, the propagation of their metacognitive learning (as text comprehension, strategic management of one's learning, concentration in classroom coaching, etc.) becomes occluded under the dominant instructional educational practices.

Thus, the research problems are not specific hypotheses about dualistically presupposed internal behavioral constructs that must be either verified or falsified; instead they stand for CBT-informed quantitative and qualitative behavioral domains in non-reflective–reflective problem solving and mindful–mindless behaviors.

1. Domain: the students' learning styles and their pre- and post-test stability (deep and surface learning)

In the students' behavioral patterns and lay activities, the investigated behavioral learning competencies are not attitudes or preferences but an individual's own perceptions, appraisals and reflections and overt activities in making practical choices and continuing on and managing with one's problem-solving activities, as for example Carver and Scheier (1981; 2000) elucidate when revising their dualist position to these non-dual

behavioral perspectives. As already asserted in the second and third research projects, the practitioner's formulation of the entire individual learning patterns and activities, here delineated as surface and deep learning, is not a theoretical research issue but becomes directly accessible through the practitioner's observations and other data gathering on the students' learning behaviors. Therefore the utilized standardized questionnaire of the Two Study Learning Styles (Biggs et al., 2001) merely describes and provides an estimation of a student's more common and preferred activity patterns with respect to her ways of behaving when performing her daily learning. So, it is based on a behavioral competency position; the measured dimensions are her categorizations (or in other words her referentially detached features) of her most common learning habits, which may be totally discrepant surface or deep learning activities.

In principle, individual learning styles exemplifying one's separate and distinct learning habits, activities and acts in learning are to be transposed to the subject's own interpretations and evaluations of her behavioral activities, because these internal functions in interpreting, evaluating and so on are her real learning behaviors themselves. Here, in dialectical critical realist terms, the deepened notion of individual learning (not elucidated in detail) means that these habits and activity chains stand for behavioral learning competencies as an individual's manifest behavioral dispositions. If changes might occur in these competencies in the run of the psychology course these behavioral changes must be general, pivoting on all students' daily learning. In this project, the practitioner has no preference for any learning and studying strategy (although general instruction in psychology requires self-initiated learning activities), and he emphasized that a student herself select appropriate techniques for managing her studies and studying activities. The students were advised that self-regulated or metacognitive learning, as a general educational value objective in psychology studies, cannot be achieved without one's efforts and pains to learn adequately by achieving the functional abstinence of one's tacit and groundless worrying and ruminating behaviors.

2. Domain: the pre- and post-test stability of the core behavioral competencies and their concurrent deficiencies in anxiety management

The main research objective in the psychology course is to search for educational means for the invigoration or enhancement of reflective metacognitive doing and learning. The critical realist perspective to dual and non-dual being and living in psychology is broad, which does not allow sticking with connectionist or associative, empiricist psychological perspectives. In such a position, a student's spontaneous perception and metacognitive management of her tacitly reflected anxieties are the leading objective of her evaluations of her recent behavior management through the imported CBT questionnaires. The questionnaires comprise both dysfunctional and functional metacognitively appraised individual management; thus they address both quantitative and qualitative matters at work in an individual's contextual anxiety and uncertainty management. Clinically seen anxiety and uncertainty management may be disrupted or permanently impaired, but is usually not seen when accounting for individual functional competencies at work at the same individual moment. An individual's metacognitive management of thoughts, emotions, anxieties and uncertainties come out directly when an individual becomes embo-

died as a concrete singular and concrete universal at the same time, in Bhaskar's (1993) words.

An individual's automatic thoughts continuously arise in the course of her daily activities spontaneously. As Dugas et al. (2005) have noted, high scores on the uncertainty scale are positively related to dysfunctional rumination and worry. In their earlier research (Dugas et al., 2004), they discovered that among university students high scores in uncertainty were positively related to depression.

A student's mean score on the uncertainty management scale indicates her behavioral competencies to manage rigidly or smoothly the real ontological or inductively reasoned behavioral matters in her daily rhythmics. The aim in psychology studies is to improve a student's competencies to permit her smooth uncertainty management. The mean score on the IUS indicates the degree of her intolerance of uncertainty currently is, and whether her intolerance has decreased or increased. If a student's smooth uncertainty management is higher at the end of the course compared to her mean scores at the course's beginning it is a positive change, which somewhat is caused by the psychology course, on whose educational aims the traditional, dualist theoretical studies in psychology or other studies have no positive impact. Consequently, if negative changes occur in the pre-post test scores, it indicates that the course has raised individual issues which are either irrelevant, requiring wasted time and energy, or are relevant to the students' daily well-being but for which the course has provided insufficient learning templates to enable their more conscious encountering of contradictory learning environments.

The goal of these additional teaching interventions (as for example home exercises in behavior monitoring training and other tailored treatment methods) is to address all the students' avoidant behaviors towards their psychology learning objectives in a general educative and psychoeducative sense. In addition to that objective, the task is to guide the students' training with better-developed metacognitive motivational and other skills to validate and even to improve their smooth daily learning. Thus, the execution of the learning frameworks was tailored to each student subgroup separately by the practitioner's supervising and coaching.

3. Domain: the vitality of the students' reflective problem-solving competencies

The aim here is improve the reliability and validity of measuring small increases in reflective pondering and metacognitive functional confrontation of internal threats and negative emotions and thoughts so that the dialectical critical realist notion of concrete singulars and concrete universals becomes attained in a student's behaviors, thereby sustaining the referential detachment philosophical notion of dialectical universalisability (Næss, 2007, pp. 491–2). The TCQ, especially in its reappraisal, worrying, distraction and social support sub-dimensions, and the ACQ, may both stand for direct measures of a student's flexible, smooth and spontaneous metacognitive reflective behavioral competencies. In addition, the outcomes of the RRS are presented with caution in the D2 teaching group, because of the measure's weakness in differentiating rumination and reflective pondering behavioral patterns.

Supplementary measures utilized, for example the constructed stepwise problem-solving literary task, provide the practitioner with data for the assessment of whether the

changes in CBT questionnaires are genuine and relate to a student's actually developed behavioral competencies. The stepwise literary problem-solving task's aim was to demonstrate the students' tendencies in managing their constrained living circumstances and challenges as they confronted real collapses in different nodal points in their processing with specific thinking sub-operations in reflective problem solving. The scale demonstrates how an individual may perform her problem solving, and her managing with her constrained world-lines becoming inferred and concluded by her reflected past, present and future contradictory living determinants. If this written problem-solving procedure becomes broken and disjointed with loose and disjointed connections to one's real daily rhythmic, it indicates an individual's tendency to think and to act according to abstracted norms and to perceive daily behavioral options as actual likelihoods and statistical approximations, but not as dialectical arguments yielding real conclusions about the real world's things. These anti-reflexive problem-solving behaviors indicate a student's difficulty with recognizing the world as open and under constant change, where every individual act has its positive and negative features and outcomes which impact on her management of her daily rhythmics.

When a student reapplies the measurement at the end of the course, it is familiar to her. However, due to the time limit for completion (20 minutes), it still illustrates a student's persistent capability continuously or brokenly to develop and evaluate strategic behavioral programs which require her metacognitive evaluation of these strategies in her daily activities and actions. The written exercise is a direct indication of the extent to which a student's constant awareness of her rhythmic and constrained life has become employed by her as a behavioral template for her daily living. Regardless of the stepwise procedure's approximate nature with respect to a great number of contradictory problems and imminent things in daily life, it still indicates the quality of a student's management of her living circumstances and the ways she interprets and constructs them in daily behavior. For the practitioner, that data has confirming or disconfirming value in his conclusions about the basic empirical outcomes on the state of the student's behavioral competencies. Apart from the research objective here, it also provides data for his metacritical evaluation of the current practical options for performing scaffolding and evaluations of the need to generally develop nursing education.

4. Domain: the end state divergence in the students' behavioral core competencies and deficiencies

An empirical analysis of the students' end state conditions of their behavioral competencies is extraordinarily valuable when both individual adaptive and maladaptive core competencies are included in the utilized CBT measurements. Because the measures and their sub-dimensions are internally consistent, as is demonstrated anon, there is an opportunity for the practitioner to recognize the entire potential divergence in the students' behavioral competencies by factor analytic and other multivariate analysis methods. The performed factor analysis, as the most appropriate three-factor solution of a student's end-state factor structures, is presented in Appendix III.

3.4.3 The CBT questionnaires' internal consistency

Similarly to the third research project, there were reliability problems in the CBT questionnaires' sub-dimensions, which are described next. If the whole measure's, or the sub-dimensions' Cronbach's alphas were 0.70 or more, it indicated a sufficient internal consistency of the items in question, and indicated that the dimension or sub-dimension was a real thing (at least in a correlative sense).

The Two-Factor Study Process Questionnaire (Biggs et al., 2001) was applied in this research project just as it was applied in the two previous projects. It produces an estimation of a student's all disjointed and contradictory learning patterns and activities. In this practical project, the internal reliability of its deep and surface sub-dimensions must be acknowledged. Especially the sub-dimension of surface learning in all three student groups was not sufficiently reliable to warrant analyses of pre- and post-test outcomes. Although it was reliable in the D1 group in the both learning dimensions and measurements, in the other two groups, D2 and D3 it was only reliable in deep learning as pre-post test measures. The questionnaire was strongly and internally consistent in the deep learning style for all three student groups (D1, D2, D3) both in pre- and post-tests, which proved that it was an adequate tool for an assessment of the students' variations in deep reflective learning in the crucial areas of individual academic learning.

An internally inconsistent surface learning style across the ten items was omitted in the pre-post-test analyses, and the low reliability of the questionnaire's two sub-dimensions indicates the students' diffuse and broken learning patterns. This diffuse and fragmented learning style among a great number of the students is consistent with the findings of the second and the third research projects, it shows that a large portion of the students in all the researched groups tend to maintain their initial learning habits and they do not have clear actionable plans for the specific improvement of their daily learning activities. In conclusion, because deep learning as a total subscale is highly reliable (Cronbach's alpha is around 0,90) this is a reliable measure of the potential changes in the student's deep learning, which is the most pivotal domain in investigating the students' academic learning competencies. Worth accounting is that in the practitioner's evaluations of all data on the students' real learning behaviors, the measure did not demonstrate or exemplify whether the students had highly advanced skills and competencies innovatively to perform academic studying.

The Anxiety Control Questionnaire (ACQ, Rapee et al., 1996) was not reliable in its stress control sub-dimension of the three sub-dimensions in the post-test. However, the complete measure was internally consistent, and particularly so for the emotion and threat control sub-dimension in groups D1, D2 and D3 – which was crucial here in order to have empirical measures for the researched behavioral competencies. The lowest Cronbach's alpha in six specific measures (pre-test or post-test across the three groups) was 0.71 with an average above 0.80. As was expected, the stress control sub-dimension in the questionnaire was not internally consistent; this sub-dimension evidently was more liable to be influenced by the external stress factors. This especially seemed to be the case in the student group D3, where the students in this group had just completed the spring term and were moving on with their private living challenges – to work temporarily in nursing or to live independently. In this student group, the students also faced abrupt stress on

encountered specific crises in lay teaching discourses, which were not directly manageable via official administrative steps. Still, the measure was satisfactorily reliable in pre-test-post-test outcomes in the all three researched student groups.

The Ruminative Responses Scale (RRS, Treynor et al., 2003), applied in D2 group, N= 27, was internally consistent in both rumination and reflective pondering sub-dimensions, both in pre-test and post-tests, but due to their distortion in specific items, the measurement was not valid for differentiating between ruminative and reflective pondering behavioral tendencies, as was the practitioner's initial and primary purpose. The rumination subscale was not sufficiently reliable in regards to the students' unpronounced and divergent action orientation patterns, as was investigated further in the executed depth analyses by classifying the students into either weak/strong deep or weak/strong surface learning subgroups. In these students' subgroups, the subscale correlation in rumination (Cronbach's alpha) in the deep learning subgroup was 0.76, when the same correlation in the weak deep learning subgroup rumination subscale was 0.58. It shows that the measure is sufficiently reliable to indicate that the students with strong deep learning patterns do not frequently lapse into rumination and the students with weaker deep learning patterns can't evaluate how one's rumination as a behavioral pattern obstructs behavioral challenges in real learning. It is conceivable that the students in all subgroups have a great number of other safety-seeking behavioral activities and acts in addition to the specific ruminative thinking patterns, and that they apparently powerlessly struggle to become aware and differentiate their concurrent problem solving and safety-seeking behavioral habits However, the reflective pondering subscale was internally consistent (Cronbach's alpha in the pre-test is 0,76 and in the post-test 0.72), and so it stands for an estimate of the potential changes in the students' reflective behavioral tendencies.

The Intolerance of Uncertainty Scale, (IUS) In this psychology course, the educational objective was placed on critical realist lines and thus went beyond inductive flawed reasoning to true generalizations about the transcendent world's mechanisms. Each student's metacognitively managed comprehension of her and all human idiographic contextually arisen behaviors as universal and real is enhanced. Dugas et al.'s (2004) and Dugas et al.'s (2005) conceptualization of intolerance uncertainty in worrying and depression as biased information processing is an appropriate empirical approach to the delineation of the scale. In reference to Krohne's (1993) initial model, Ladouceur et al. state that an elevated level of intolerance of uncertainty and intolerance of emotional arousal are the main variables that give rise to anxiety disorders (Ladouceur et al., 2000, p. 933). Consistently with this broad clinical and non-clinical framework in human uncertainty control, the objective of the teaching program here is to guide the students' behavior monitoring towards their experiential validation of their uncertainty-related appraisals via behavioral monitoring exercises in order to increase concrete reflections on their behavior, or in other words their spontaneous reflections on their individual, ever changing living circumstances and conditions.

To the applied 26-item version Buhr and Dugas (2002) have added one item in their research into an assessment of the measures' psychometric properties. Regardless of the measures' original or renewed versions, their research has demonstrated that the total score is reliable, with no general requirement to differentiate between the four emerging

sub-factors of the IUS. In this research, the two students groups' (D1 and D2) internal consistency on Cronbach's alpha was extremely high in D1 and D2 pre-test and post-test outcomes, in D1 (N=29) 0.90 and 0.92, in D2 (N=27) 0.87 and 0.87, respectively. Some single-case analyses were performed but their outcomes are not presented, because the measure seemed to have some differential ability as the standard deviations in student groups were relatively high.

The Thought Control Questionnaire (TCQ, Wells & Davies, 1994) is reliable in specific subdimensions in group D3, N=19. This student group was an exception compared to the other two student groups, because this teaching course was the last course of the semester and a great number of students had high environmental educational stress in encountering the last exams in other courses. These students often were short on persistent actionable strategies to learn initiatively in this course, and many of these students passed their scoring in the posttest CBT measurements.

Table 1. Internal consistencies of specific sub-dimensions in TCQ in D3 group

	reappraisal	**worry**	**social support**	**distraction**
pre-test	0,81	0,72	0,79	0,76
post-test	0,81	0,63	0,76	0,84

This questionnaire's internal consistency in its specific sub-dimensions is high, and therefore it is reliable in its four sub-dimensions that are pivotal for these research objectives and warrant both group and single-case analyses. In Table 1, the presented four specific sub-dimensions are more adequate for the assessment of the feasibility of the teaching project when the two other sub-dimensions (ritualization and punishment) are more valuable for clinical patients. Table 1 indicates that the reappraisal sub-dimension is reliable and the worry sub-dimension for the entire group is not internally consistent in the student group for warranting pre-test post-test analyses.

The Beck Depression Inventory (BDI, Beck el al., 1961) is utilized in order to ensure that the students do not suffer from mild or severe depression. Here there is no need to measure the consistency of the inventory, because the students' depressive symptoms are nonexistent or mild and the measure does not have differential ability in this behavioral realm. If a few students suffered from depression, this teaching–learning program in behavior recording and scaffolding means would not be manageable for them. This measure is not applied to assess the feasibility of the behavior monitoring and other implemented scaffolds in this project, but if the students' scores were higher in the posttests than the pre-tests this would suggest that the program was too challenging for the students.

3.5 Empirical outcomes in the students' core behavioral competencies

The same behavioral domains being empirically investigated in the pre-post-test settings were already introduced in the second and third research projects: the domains were the students' learning and anxiety-management skills and competencies. In this report no single case or other subgroup analyses and outcomes are presented, because they do not provide data for deciding whether the imported and implemented CBT scaffolding to teaching and students' learning would be optimally workable and feasible

when comparing and evaluating its feasibility with the initial starting point in the first research project or in the scaffolding of the third research project.

1. Domain: Self-regulated learning behavior

Comparisons of the students' learning strategies and patterns are presented by means of the two-factor learning questionnaire, as deep learning and surface learning patterns. The educational social practices in nursing are problematic here when considering the practitioner's possibilities and options for the enhancement of the students' deep or academic reflexive learning. This specific course in psychology represents the only course enabling the students' concurrent studies towards their deep and reflective learning, and it is clear (Table 2) that this course does not have significant impact in any clear direction in terms of the strengthening of the students' deep learning patterns. It is important to note that the students generally have diffuse learning strategies and they do not demonstrate or prefer clearly surface learning patterns, but they do tend to lapse into these learning activities as their actual learning behaviors.

Table 2. Comparison of the changes in a student's learning style (Two-Study Process, Biggs et. al., 2001) in the fourth research program

	total deep learning pre-test	**post-test**	**effect size**	**total surface learning pre-test**	**post-test**	**effect size**
D1,N=29,project IV	2,99 (0,78)	2,85 (0,74)	-0,18	2,02 (0,56)	1,91 (0,75)	-0,19
D2,N=26,project IV	2,71 (0,83)	2,54 (0,91)	-0,20	1,88 (0,46)	2,08 (0,44)	0,36
D3,N=20,project IV	2,75 (0,83)	2,77 (0,90)	0,02	2,04 (0,79)	1,94 (0,75)	-0,13

A large number of the students are generally and implicitly aware of their restricted possibilities for engaging in deep learning, but their understanding of their hidden behavioral options and restrictions seem to become loosely decided by their motivational and all behavioral actions, they do not often and frequently engage persistently in deep learning activities in their psychology studies. The students' deep learning behaviors frequently and largely collapse, which prevents their deeper understanding and re-creation of the relevant learning issues. It is noteworthy that the Two-Study Process questionnaire here is not valid for investigating their potentialities to engage in highly advanced and sophisticated academic studying patterns. The main argument for supporting that conclusion is that the students have neither sufficient skills and competencies, nor appropriate social rewards and incentives for self-regulated or deep learning activities. It is possible to expect a great number of minor changes in the desired direction as the program's latent impacts on the enhancement of the students' self-regulated learning appear, but the measurement devices are inaccurate for discerning and evaluating these positive changes. In any case, an attempt to obtain a greater improvement in the students' self-regulated learning seems to be futile under the current social educational practices unless new options to expand the CBT-informed scaffolding of a student's learning emerge in the students' concurrent studies.

2. Domain: The stability of the students' behavioral anxiety and uncertainty management competencies

The IUS and the ACQ directly address the main individual core behavioral competencies, and along with the other applied CBT questionnaires, provide reference data (TCQ, RRS and BDI). Evaluations of individual strategies and attributions towards anxiety-related thoughts and feelings are individual meta-evaluations of the appraised options and ways in individual behavior management – whether one is getting worried and over-concentrated or confronting adequately her uncertainties and anxiety provoking thoughts in her on-task performance orientated reflections.

a. The stability and changes in the students' intolerance of uncertainty

The completed 27-item uncertainty scale exemplifies the ways a student monitors and orientates her uncertainty initiating thoughts and feelings, and her attributions may be dysfunctional or functional, impairing or invigorating her reflective behaviors. A student's thoughts and emotions on uncertainty behavioral matters are dysfunctional when she pays extra heeds to her concentration on and direct confronting of these specific uncertainty issues. The other end of this behavior management dimension is when a student is aware of her uncertainties, but these feelings and thoughts do not need to be primarily taken into account in her present problem-solving activities.

The outcomes of the IUS in two sub-groups are similar to the Concordia University research on mainly female undergraduate students (N=148; mean 57.46 with 18.32 standard deviation; Dugas et al., 2005). The issue in this research project is not a cross-sectional measurement of the students' behavioral competencies in managing their internal uncertainties, but measurement of the potential changes in their basic competencies in this matter, through which competencies the psychology course would potentially and positively be meaningful. The psychology course addressed each student's validation and improvement of her anxiety-management skills and competencies. Although this questionnaire may be reliable both for clinical and non-clinical clients, it provides pivotal data for the practitioner's evaluation of the feasibility of the program and the psychology course's objectives of enhancing the students' deep learning patterns, which would encourage the students to search for more adaptive behavioral activities in their daily learning and living.

Effect sizes in both the researched student groups indicate positive changes (in Table 3, the minuses in effect sizes indicate the students' improved uncertainty management);

Table 3. Changes in IUS; means and standard deviations

	D1, N=29	**D2, N=19**
at the start	62,32 16,10	56,16 14,30
at the end	52,77 16,02	52,22 13,51
effect size	-0,60	-0,28

they are worth noting, as they prove the feasibility of the teaching project. But the other main outcome is the students' great divergence in their uncertainty behavioral management competencies, and so there is no way to enhance the divergent metacognitive social problem-solving modalities employed by the students. In the D1 group, the 16 students had summary scores above 60 in IUS, which here was taken as a rough indication of their dysfunctional uncertainty management at the beginning of the program; 10 demonstrated

dysfunctional anxiety management also at the end of the course. Although the students in question had demonstrated moderate or weak uncertainty management at the beginning, their post-test measures indicate that the program was feasible also for these students. However, out of the four students with the highest scores in IUS at the beginning of the course, three of them had high scores also at the end of the course. It is arguable that the course was beneficial also to these students because they achieved new implicit understandings of human reflective behaviors.

In conclusion, the students demonstrated a substantial progress in metacognitive awareness and even decreased their worrying behaviors. If a total score above 60 is taken to be an indicator of a student's increased maladaptive tendency in their uncertainty management, there are nine students who exemplify this worrying behavior in group D1, and out of these nine students four students indicate a diffuse learning strategy and five students indicate deep learning in the Two Study Styles Questionnaire. However, based on their attained summary learning outcomes, only three of the five students manifestly demonstrated their good deep learning. It means that when in these studies there are no clear learning templates and structures for the students' deep, innovative academic learning, that learning does not become actualized in these educational practices; the fault is not in the Two study styles questionnaire, but lies in the real, deeply structured educational practices.

2. Changes in anxiety control

The anxiety control questionnaire, in its 15 items conforms to a Likert scale and becomes scored by a student in six degrees (0 = strongly disagree, 5 = strongly agree); this indicates and exemplifies how an individual metacognitively manages uncertainties in a realm of anxiety-related feelings and thoughts. This management may be dysfunctional when a student's spontaneous consciousness appraises anxiety feelings as dangerous or threatening and thus she pays additional attention and behavioral exertion to managing separately these internal experiences, detracting from her concurrent contextual on-task performance or problem-solving activities. A student's higher points on a single item (maximum 5) indicate good behavioral skills or smooth metacognitive competencies to work persistently despite daily obstacles, and a student's lower points indicate that her on-task performance (tacitly and without her clear noticing or smooth behavioral managing) partially or more completely breaks down due to her tacit intrusive and other threatening thought contents. Similar to some earlier research about the questionnaire's psychometric properties in this research also the questionnaire seemed to consist of three separate and interrelated sub-dimensions in anxiety control obtained via factor analytic methods, which are emotion control, threat control, and stress control.

In clinical settings, I have found (and it is consistent with the measure's aim to differentiate both maladaptive and adaptive ways of one's perceived anxiety control) that mean scores near three or above it in the anxiety control (sub)-dimension(s) indicate quite functional individual metacognitive competencies to deal with internal anxieties without too much escalating interruption in one's cognitive problem solving or in one's daily on-task performance activities. The outcomes in Table 4 indicate that the students' means in anxiety control vary significantly, and that the students' means have significantly in-

creased in the post-test, as also the effect sizes in all three groups generally demonstrate in the two more stable or stress-insensitive sub-dimensions (stress and threat control). The exception is the emotion control sub-dimension, as it is conceivable that deep identity constructs are not liable to improvement via this kind of scaffolding program.

The timing and placement of this teaching course seemed to affect the programs' effectiveness (D3 teaching was carried out in a hurry in the end of semester). In any case, it is more important to notice that the three groups were divergent in regards to the stu-

Table 4. Change in anxiety control in groups D1 (N=29), D2, (N=26), D3 (N=21) means and pre-test standard deviations

	Emotion control		effect	Threat control		effect	Stress control		effect	Anxiety control		effect
	pre-test	post-test	size	pre-test	post-test	size	pre-test	post-test	size	pre-test	post-test	size
D1	2,90(1,09)	2,97	0,06	3,19(0,99)	3,64	0,45	2,67(1,02)	3,10	0,42	2,92(1,03)	3,23	0,30
D2	3,13(0,76)	3,01	-0,16	3,21(0,66)	3,69	0,73	3,35(1,11)	3,25	-0,09	3,23(0,71)	3,40	0,24
D3	3,03(0,96)	3,10	0,07	2,95(1,01)	3,05	0,10	2,83(1,26)	2,93	0,08	2,87(1,07)	2,97	0,09

dents' basic competencies in question, as the slightly visible groups' standard deviations also indicate. Weaknesses in anxiety control affect both the students' skills acquisition and the flexibility of their social and other problem-solving skills. These competency weaknesses directly impair the students' learning activities in the psychology course, although this is not the main research objective here and therefore not investigated in more detail by accounting for each student's totally divergent and individual specific living and learning circumstances. The teaching program's main objective is the enhancement of the student's basic metacognitive or reflective behavioral skills and competencies, and this became attained while not hampering the students' surface learning directly. Although individual outcomes in anxiety-management competencies are not presented here, it is worth noticing (as a feasible outcome of the CBT-training implementations) that the discrepancy of the students' competencies and skills (standard deviations) seemed not to increase at the end as might be expected if the program had been too challenging to the students.

It seems, that the efficiency of these teaching interventions and implementations, targeted at a student's monitoring of her latent worrying (in her daily rhythmics and at her abolishing her worrying by not shedding her anxieties in committing to her real daily obstacles in her on-task performance behaviors) largely depends on the practitioner's careful timing and scheduling of rich and diverse theoretic and practical learning objectives in this teaching project. The program's length seems to be optimally around 8–9 weeks. Of course, its general implementation impacts on the feasibility of the psychology course and revises the course's basic educational aims in many ways, which are not considered here further, for example by giving the subgroup details.

3. Domain: the vitality of the students' reflective problem-solving competencies

The deployed measures were quite weak in analyzing the strength of the students' reflective problem-solving competencies, because the RRS-scale did not have enough discriminative power regarding advanced reflective pondering competencies. As Table 5

Table 5. The stability of the students' conflated pondering (the RRS-questionnaire' three subscales) in group D2 (N=18)

	depression subscale			rumination subscale			reflective pondering subscale		
	pre-test	post-test	effect size	pre-test	post-test	effect size	pre-test	post-test	effect size
Cronbach's alpha	0,68	0,72		0,60	0,60		0.80	0,80	
mean	1,68	1,57	0,28	2,20	1,76	-0,96	1,70	1,69	-0,02
s.d.	0,39	0,30		0,56	0,43		0,57	0,55	

shows, the students' rumination or despairing behavioral tendency is a little bit lower at the end compared to the beginning of the course. The results indicate that the students still have a great tendency to lapse into inductive, emotivist reasoning and are not able to take reflectively intentional and behavioral stances to the actual challenges they are facing. Their weak reflective pondering stays enmeshed in their worrying and rumination, which sustains the students' relatively weak reflective pondering or metacognitively managed, cognitive problem-solving behavioral disposition.

Regarding the vitality of the students' reflective pondering, the TCQ-questionnaire's mean scores in separate sub-dimensions in group D3 indicate students' generally strengthened reflective competencies (reappraisal sub-dimension) in comparison to the second research project (Table 6). The conclusion is based on the practitioner's considerations that an increase in the reappraisal and concurrently a decrease in the worry sub-dimensions indicate the students' improved reflective competencies without individual increases in concurrent social support seeking and thought distraction. Comparisons to the outcomes in the second research project suggest the significantly positive strengthening of the students' reflective competencies in this fourth research project. However, the students' reflective problem-solving or cognitive problem-solving is not strong enough to

Table 6. Student's thought control strategies and their changes in different research projects; means

	reappraisal			worry			social support			distraction		
	A1	A2	D3	A1	A2	D3	A1	A2	D3	A1	A2	D3
at the star	2,61	2,70	2,40	1,98	2,10	2,31	2,79	3,39	3,36	3,07	2,52	2,91
at the end	2,46	2,56	2,91	2,03	2,04	2,15	2,53	3,48	3,33	2,73	2,82	2,94
effect size	-0,19	-0,22	0,85	0,06	-0,14	-0,32	-0,42	0,15	-0,04	-0,52*	0,79*	0,05

* It is not known, whether the students use more thought distraction or thought suppression. Therefore it is not possible to directly evaluate this outcome as positive or negative, if regarding the first way as positive and the latter as a negative strategy.

support the students to refrain from their worrying behaviors when facing stressful learning conditions in a self-regulated and innovative academic educational environment. As the outcomes in Table 6 indicate, students' worrying and social support-seeking generally have increased in all the three student groups, and this strengthened behavioral tendency may prevent the rise of the students' reflective metacognitive competencies. Here it is necessary to recall that in the dialectical critical realist position, social constructivism means confinement to the second edge in ontological dialectics, which do not give rise to options for innovative reflective or mindful behaviors in one's open social rhythmics.

4. Domain: the students' end-state divergence in their behavioral core competencies

The three-factor solution here was the most optimal factor structure (see Appendix III on the three groups' factor solutions), and the factor structures were quite similar in their three behavioral dimensions to the factor structures in the second and third research projects. As was expected, this shows that the students' discrepancy in their core behavioral competencies stays all along. The students' behavioral competencies in this maladaptive and adaptive behavioral reframing form three behavioral patterns: they are the students with core self-regulated core competencies, the students tacitly lapsing into active worrying and safety seeking, and the students with lagging self-development in their adult living with concurrent shortcomings in their on-task performance management.

The enhancement of a student's self-regulated learning, as well as of her entire daily reflective problem-solving competencies, depends equally on her optimal execution of her practicing the behavior monitoring exercises and her behavioral training as well as on the practitioner's adequate supervision of her learning. In general, this project's basic educational tenets seem to a student as contradictory by not directly supporting her dwelling on dealing with her social daily constraints but instead on her continuous reflections on her daily behaviors. Generally, when the student's exercises in behavior monitoring do not improve significantly, or the practitioner's supervision (not even coaching at first is needed) does not have much room in this scaffolding program, there seem to be no feasible practical means in the behavior monitoring programs for improving the students' self-regulated learning in all the three established student subgroups. As is discussed in the last pages of this report, especially in case of the students with tacit safety-seeking activities and weak on-task performance competencies, this suggests further subgroup tailoring of CBT-scaffolds via modality-based behavior monitoring devices. This is because these novel scaffolds in a psychology course as specific psychoeducative and collaborative intensive teacher–student communicative practices require too much room for rich scaffolding as opposed to instructive teaching of theoretic psychological concepts through non-collaborative dualist discourses.

3.6 Conclusions from the fourth research project

3.6.1 The workable scaffolding in the enhancement of the students' behavioral competencies

Additional data gathered by the practitioner, on the psychological divergences in the students and between the researched student groups and between the individual students and of the social contextual factors, support the practitioner's validating of the basic empirical pretest-post-test outcomes in his transcendental deductive argumentations. The program was feasible for all the students with their divergent behavioral competencies, as was already elucidated in the program's practical educational-psychotherapeutic objectives and in presentations of the main empirical outcomes with respect to the each of the three student subgroups. The educational objectives to be enhanced are deep and sophisticated, individual psychological constructs as they emerge in an individual's open

daily social rhythmics. These functional reflective competencies, in all individual discursive intellectual activities and specifically broad metacognitive or transcendental reflecting on one's open rhythmic, are not teachable or transferable to each student; instead they emerge in real social constrained life, in which behavioral modality-based behavior monitoring, and its recording and training by CBT-treatment practicing protocols in a student's concurrent learning of psychology, was developed in the third and fourth research projects. Although the dominant educational practice continues with instructive teaching and a student's surface learning, the program demonstrated only small or moderate (and evidently only transient) outcomes in their functional anxiety-management behavioral competencies. In the open, social educational realm, this means that the program in scaffolding did not entail direct changes in the hollow, dualist, empirically grounded teaching practices that absent a student's metacognitive reflective learning, although the moderate positive changes achieved are extraordinarily important and feasible.

In this fourth research project, as well as across the second, third and fourth research projects, there was variation in the use of the most optimal CBT questionnaires, but the pivotal research objective of the practitioner's evaluation of the main empirical outcomes regarding the students' functional and dysfunctional behavioral competencies was sufficiently attained. So this variation did not annul the measurement of students' behavioral competencies in the entire adaptive and maladaptive reframing, because the questionnaires covered satisfactorily both extremes in the behavioral functionality dimension in all the three student groups separately. To the students, the pre-test/post-test measurements stood as an adequate introductory base for their learning objectives in the psychology course. The students' implicit (or in some students even explicit) understanding of individual uncertainty behavioral matters was attained in this way, so that modern or postmodern dualist psychologies became eschewed by the rise of the students' metacognitive mindfulness behaviors.

Single-case analyses are not presented in more detail here, but the practitioner's real-time follow-ups of students' daily learning activities and of their learning shortcomings exemplified real behaviors These real-time data comprised the practitioner's validating data in his assessments and reflective reading of the students' scores in the questionnaires' sub-dimensions. Therefore the practitioner's assessment of the students' behavioral pre- and post-test changes and evaluation of the feasibility of the implemented programming in teaching and learning scaffolds was similar to clinical CBT-client work in evidence-based psychotherapeutic practice. Therefore the practitioner had valid and reasonable grounds for reading the students' scores more individually, which diverges from nomothetic empirical research on individual behavioral competencies and their presupposed individual psychological internal structures. In the TCQ especially, a student's increased mean in the reappraisal sub-dimension did not directly or necessarily mean her maladaptive behavior here, as has been seen in clinical patients. Single cases were extraordinary important in guaranteeing that the intensive scaffolding of the students' individual contextual behaviors and learning did not reinforce their dysfunctional and maladaptive behaviors.

3.6.2 CBT-informed behavior monitoring and its training became verified as adequate

The deployed CBT questionnaire methodology was the most adequate in enabling the measurement of the students' core behavioral competencies in the search for the enhancement of a student's metacognitive learning after adopting critical realist lines. This enabled an open assessment of the individual behavioral realm and scaffolding for an individual's contextual uncertainty management of her potentially contradictory behavioral forces. Via the CBT questionnaires, measured behavioral core competencies were primarily behavioral dispositions, and from these competencies arise embodied behavioral social skills. By making the behavior monitoring approach the linchpin for scaffolding the students' learning in critical realist terms, the devised and implemented behavior monitoring training means stand for and exemplify the student herself and for the practitioner how she deals with all dualist living realms in her traversal and transcendental detachment of contradictory real behavioral determinants in her daily behaviors. Although the students' tacit behavioral tendency to rumination and worry as well as to safety-seeking behaviors as means for avoiding uncertainty and anxiety-initiating behavior was relatively strong, the introduction and implementation of CBT recording and treatment means for a student's practicing protocols were adequate and feasible as research objectives. Behavior monitoring exercises and training protocols for the students' recordings constituted for the practitioner his data for validating the pre-post test changes in the students' core behavioral competencies. For example, when a student's mean in the ACQ was around 2 (the range 0–5, the latter indicating smooth metacognitive management of one's anxiety feelings), her behavior competencies regarding her vitality in smooth anxiety management was, via the practitioner's divergent reasoning lines, clearly weak in her self-regulated learning and other problem-solving activities compared to a student with a mean of 4 or more. A student's real learning was possible to check from the practitioner's records of her real learning performance, but only in cases where the student performed the behavior monitoring exercises.

The main research problem was to investigate potential changes in the students' anxiety-related behavioral competencies, and it was a complicated issue for an empirical investigation, because at the beginning of each project the practitioner had somewhat idealist initial presumptions about the real options for attaining more positive and stronger changes in the students' self-regulated behaviors and their behavioral competencies. But as things are, the real social and the educational constrained practices either coerce or enable the rise of the reflective metacognitive competencies, and the practitioner's intensive but smoothly performed attempts gained only moderate improvements in the students' core behavioral competencies. As has been soundly argued throughout this research and in its four separate projects, the moderate (but in any case positive) impact of the scaffolding on the students' reflective competencies is quite logical and a real ontological state of human affairs in these social, deeply structured, surface learning contexts. The research project was the first serious and scientifically grounded attempt to support the students' dealing with their anxieties and uncertainties in more explicit behavioral and collaborative trustworthy terms, which means going beyond modern and postmodern psychological perspectives and conceptualizations; this was successfully attained

through rich stepwise scaffolding of the students' teaching at first, and then through scaffolding of the students' daily reflectively managed learning. A research project of this kind would not be possible in empiricist theory or method-driven methodologies for research into students' core competencies; as it was the practitioner became competent to rationally understand the need for not applying empiricist research positions only after being quite far advanced in the third research project. The practitioner encountered particular difficulties in discerning and explicitly elucidating the psychological maintenance mechanisms behind the students' empirically researched behaviors in learning (often weak and procrastinating), which of course directly abolished the behavior monitoring and collaborative positions in these teaching practices. A tacit lapse into theories was tempting now and then for the practitioner, but it was possible to avoid these temptations by relying on the imported CBT and mindfulness-informed, behavior monitoring methodology and its tailoring, as enabled in the non-instructive and collaborative teacher–student approach to communication. In addition to other support for continuing with this emancipatory line, the practitioner's reflections retained their initial grounding in critical realism-informed philosophical and scientific issues to research real teaching practice in real social transformative life.

It can be concluded that the students' adaptive behavioral core competencies became a little stronger at the end of the teaching program (see the outcomes in the Anxiety Control, the Thought Control and in the Intolerance of Uncertainty –questionnaires in Tables 4, 6 and 3 respectively). It must be due to the additional CBT scaffolding by confrontational training means, which means were not possible to apply in the third research project (in group C). This extra scaffolding was urgently needed: first, in directing the student to take a strong behavioral stance towards validating the real nature of her real behaviors, and second the scaffolding grew towards a more trustworthy (mainly virtualia) supervision of the students' real learning. As can be seen from the third research project (with its meager scaffolds regarding a student's learning and exploring contextual and metacognitive psychologies), it did not have a positive or significantly negative impact on the students' reflective competencies (see especially the results in the Anxiety control and the RRS questionnaires, Tables 4 and 5, pages 357 and 360). However, in the fourth research project, regarding the outcomes of these two questionnaires in question (Tables 4 and 5 on pages 359 and 360), as well as outcomes of the TCQ's reappraisal sub-dimension (Table 6 on page 360), the results were considered positive. It is especially worth recalling that the students' worrying and depressive thinking patterns grew slightly weaker. Although, when considering this fact, it must also be mentioned, that the other dysfunctional ways of dealing with one's anxiety-related thoughts, did not increase either. The changes were of the most optimal kinds, and they indicated a clear increase in each student's skills in her self-regulated behavior and learning, which occurs only through her intensive behavioral attempts to decrease ruminative problem-solving activities at first. However, the goal of seeking a significant abolishment of the practical trinity of surface learning – instructive teaching – and learning theoretic norms is not a realistic one in a single curriculum-based teaching program.

3.6.3 The practitioner's successful strategy in managing all the scaffolds for the teaching practice

This critical emancipatory research methodology for validating empirical results requires the practitioner's reflective reading and theory-informed (and open social practice-directed) pondering of all the data and empirical outcomes of the project in his search for the optimal inputoutput relation. By the same token, the practitioner' execution of his teaching practice through these rich scaffolds requires his flexibility and reading of real-time data on each student's learning behaviors and outcomes in order to reinforce his teaching endeavors to ensure the balanced maintenance of the entire scaffolding. The practitioner's extra load (without means for its optimal resolution) was that for the students' with lagging adulthood identity development issues, there were no means to support their deep reflective learning (while at least guiding them to perform minimal surface learning activities needed in order to pass the course), and to help them to accept their momentary difficulties in embarking on deep learning activities. From the practitioner's data on the students' behaviors it seemed that not even these students' had significant depressive symptoms; this was established also via their depressive symptom scores in the Beck's depression inventory (Beck et al., 1961). Therefore, there were no grounds for the application of self-monitoring tools and their tailoring to other specific clinically significant anxiety disorders. The practitioner's objective to focus on the students' rumination and worry was the most adequate explanatory realm for the scaffolding of their learning by CBT treatment means.

It was argued all along, and also became gradually empirically affirmed, that without any through treatment-validated self-monitoring techniques similar to this project, there is no way to strengthen the students' basic self-regulated and metacognitive learning skills and competencies in their academic studies. For example, direct, individually tailored supervision of the students' learning behaviors for their shedding of their safety-seeking behaviors (and validating their advances in deep learning) was not a primary scaffolding technique because the students did not perform or failed to properly perform home-classroom learning work as their decided daily rhythmic activities. Thus, the introduced basic strategy of concurrent monitoring of all divergent and constrained behavioral modes in daily learning activities was the most adequate teaching method for all the three relatively similar student groups. Of course, the program's efficiency with respect to the students' metacognitive learning was not the same across the discerned three groups, so that only for the advanced students was the program efficient for reinforcing deep learning, whereas in the two other subgroups the program's impact remained as psychoeducational and educational. However, if someone is keen to see positive outcomes in all the students' metacognitive problem solving, it is there insofar as the program strengthened at least covertly all the students' own mastery of their daily behaviors.

The quite massive package of many mutually reinforcing self-monitoring records in a student's individual homework training seems to be the only way of bringing back students' self-regulated learning in vocational studies, when at least half of the students lack all basic skills for self-regulated academic learning. The deployed behavioral modalities (see from the third research project Figure 1, page 245) for the students' behavior monitoring and recording guide a student to accept and to commit to her real obstacles and

not to focus on her impairing despairing self-reflection on imagined anxieties and worries. Via the modality approach, a general problem or a deficiency in acceptance and commitment therapies of not having general educative tools for a client's contextual deciding received its specific solution This guided her to validate and revise her behaviors regarding the real obstacles that need to be accepted and committed to, and the worries and anxiety experiences that need to be shed.

It must be recalled that these records do not bring back students' self-regulated learning activities at academically required levels because they are not able to do these records for the purposes of validating and improving their own behaviors. There are no existing direct means for improving the students' reflective problem-solving competencies while individual behavioral orientations to perform formal and stepwise problem-solving activities do not increase a student's competencies in managing her constrained living and academic learning conditions (where innovative work and learning takes its place, if at all). So, it is quite clear, that the students' behavioral outcomes and their learning outcomes in the realm of constructive and meta-cognitive problem-solving behaviors stay divergent and generally moderate.

The significant utility of these self-recording, behavior training protocols for a student's learning and self-regulated behaviors has been affirmed via many empirical practical paths in this research. For example, in all the three laboratory teaching projects (groups D1, D2, and D3) the practitioner collected recorded data on each student's accomplishments of her behavior monitoring records, as can be seen from Figure 4 (page 286). It shows the students' divergent completion of their recording of the presented voluntary training protocols. Although the students' core behavioral competencies in their uncertainty management are so divergent (and often weak at the same time), their basic metacognitive self-regulated learning skills do not need to be empirically measured: skills-based approaches would only bring out theorized specific categorizations in their skills and shortcomings in their skills. From these theoretical categorizations it is not possible to derive practical programs for improving the students' learning and problem-solving skills, which are general and not dependent on specific problem solving and learning domains. Therefore the competence approach to individual uncertainty management has been chosen here. From the students' behavioral competencies and deficits in uncertainty management, there arises a direct possibility to tackling the students' problem-solving activities in their management of their daily rhythmic as their behavioral competencies.

When considering input–output optimal relationships in the all four teaching projects in this research, the fourth psychological project proved to be the most effective in the enhancement of the students' reflective metacognitive learning. Its practical elements were:

[1] Basic constructive and multilayered structure for learning issues in learning materials and rich and flexible teaching methods.

[2] The practitioner's coaching became practically workable by means of the invented basic teaching scaffolds for the invigoration of the students' self-regulated learning.

[3] The practitioner's implementations of the most optimal behavioral assessment methods and empirical tools for explaining the student's learning patterns and their beha-

vioral deficits for further tailoring of the most adequate teaching procedures were completed.

[4] The students' confrontation of their real behaviors tailored cognitive behavioral treatment methods by incorporating treatment protocols for the students' metacognitive monitoring records and exercises became possible.

[5] The reopening of the practitioner's real-time supervision of the students' behavior monitoring recording and training of her real behaviors was enabled.

Of course, the most optimal input–output relationship in each separate teaching project was the practitioner's main research objective, because each project paved the practical way to scaffolding the students' metacognitively managed learning.

4. THE OPTIMALITY OF BEHAVIOR MONITORING TECHNIQUES FOR ENHANCEMENT OF THE STUDENTS' BEHAVIORAL COMPETENCIES AND 'DEEP' LEARNING

4.1 Gradual improvement of the scaffolds for enhancing a student's reflective learning in psychology studies

In this research, partially the same CBT questionnaires were used in the pre- and post-test measurements and for the practitioner, and somewhat for the reader of the report, the outcomes allow some evaluations if the four-step research project in scaffolding of the students' metacognitively managed learning has attained its most optimal solution in the fourth research project. That evaluation begins with the basic supposition that all the educational practices which sustained the trinity of instructive teaching – of theoretic general norms and a student's surface learning – were quite stable. That stability seemed to prevail all along, as is partially seen from the facts that educational management did not specifically concentrate on controlling specific teaching endeavors and dropouts from the psychology course were very rare, and lay teaching practice carried on with its general course and pace. The other teachers' interventions focused primarily on teaching specific and pivotal theoretical issues, either in classroom learning or in distance-instructed learning, which became deeply integrated into the students own metacognitively managed choices in this project. Although the educational social conditions were stable regarding the self-regulated deep learning reframing carried out, other specific interventions aimed at self-regulated teaching did not occur within the project's three years' execution time. In this research, stability in the teaching practice was the precondition for the establishment of teaching templates for a direct introduction of students' learning behaviors to metacognitive learning realms.

The results presented below prove that this novel, contextual critical realist framework for individual learning behavior as a metacognitively managed, human rhythmic activity was accomplishable, enabling the emergence of the students' 'out-of-the-blue' spontaneous human activity (Bhaskar, 1993) now and then. That learning is not embo-

died learning (for example, Dall'Alba's and Barnacle's concept, 2005) or learning of theories and concepts (Davis, 2005); these latter researchers are not able to sustain the initial philosophical approach to human intentionality, considering how learning involves individual acts of absenting. Individual non-dual activities in internal functions and overt acts connote human reflectivity and social reflexivity, but they are not theorized in this project.

4.2 Lack of interim improvement in the students' deep learning

Although the students familiarized themselves with and attempted (occasionally successfully) intentional learning activities in applying a variety of teaching and learning scaffolds in the psychology course, no generalized positive changes in the students' learning behaviors transpired. That can be seen from Table 7 summarizing the results from the three separate empirical projects. These results were expected, because other teachers' interventions in the students' nursing studies were primarily focused on the specific topics of formal and formalized theoretic knowledge, not on initiation of the students' learning skills and competencies. It is notable that the Two Study Process Styles questionnaire does not encompass advanced self-regulated learning, and its reliability in determining potential pre-post test changes on the students' real surface learning activities is inadequate due to its social desirability.

This measure does not possess sufficient differential ability in discerning the students' minor new self-regulated learning initiatives and improvements in deep learning activities (which are supposed to appear when the students generally attend the classroom coaching, and perform the assigned behavior monitoring home-tasks, and complete four obligatory home exams for their application of psychological knowledge to their real living contexts). The students must improve at least their more pivotal self-regulated learning skills, such as text comprehension, direction and management of attention and concentration, requests for the practitioner's feedback, report writing on human issues, and so on.

Table 7. Student learning styles in all measured research projects, groups B1, B2, C, D1, D2 and D3 (means, standard deviations)

	pre-test deep total,	post-test deep total	effect size	pre-test surface total	post-test surface total	effect size
B1, project II, N=23	3,02 (0,63)	2,99 (0,66)	-0,04	1,98 (0,55)	2,35 (0,70)	0,67
B2, project II, N=20	2,98 (0,94)	3,00 (0,86)	0,02	1,99 (0,78)	2,11 (0,87)	0,15
C, project III, N=24	2,84 (0,51)	2,64 (0,50)	-0,39	2,06 (0,35)	2,18 (0,43)	0,34
D1, project IV, N=29	2,99 (0,78)	2,85 (0,74)	-0,17	2,02 (0,56)	1,91 (0,75)	-0,24
D2, project IV, N=26	2,71 (0,83)	2,54 (0,91)	-0,2	1,88 (0,46)	2,08 (0,44)	0,43
D3, project IV, N=20	2,75 (0,83)	2,77 (0,90)	0,02	2,04 (0,79)	1,94 (0,75)	-0,13

The students' deep learning did not generally increase. This is inevitable when the general teaching practices in the maintenance of the (un)holy trinity of surface learning (instructive and illustrative teaching and its tutoring, and learning of actual norms and theories as the dominant educational practice) is considered. The students' means in the questionnaires' deep learning dimension did not generally increase and the standard

deviations remained relatively stable and at a substantial level in all the student groups. It indicates the students' underdeveloped strategic learning activities and significant divergences in their self-regulated learning competencies. The learning problems of the underachieving students, or of those students having difficulties in performing any learning activities, remained also in the fourth research project. The students' difficulties manifested themselves in the lack of their persistent performance of either deep or persistent surface learning activities. It is uncertain as to whether these restrictions in the students' studying activities had escalated or reduced from the first to the fourth teaching projects. If some sociological research could be done here on the changes brought about by this teaching practice, that research would demonstrate some transformations in evaluations of the students' learning outcomes from crystallized and embodied learning to more reflective and flexible ones.

With regard to the students' general living strategies, the practitioner observed that those students who achieved learning outcomes effortlessly demonstrated advanced competencies in the management of learning. They did not invest their surplus energy into increased intensive learning, but into their other daily activities. In the teaching discourses generally, all the students' smooth acceptance of their divergences in learning competencies and strategies increased, and their worry-inducing discourses stayed behind in the classroom sessions. It indicates that the students' became more empowered to deep and individually managed learning even if the students' new behavioral dispositions were not manifested as the students' more intensive academic learning activities. Without providing a comprehensive explanation, it indicates the students' improved assessment of their competencies and resources for learning and strategic decision making, as it is seen from the pre-test-post-test outcomes in the stepwise problem-solving record (Table 12, page 375).

However, it was unrealistic to expect improvement in the students' deep learning styles in the dominant instructional-surface educational practices. The students were able to comprehend the complete discrepancy in the two conflicting educational demands and tasks (surface contra deep learning) before the end of the psychology program, but they were not able to integrate and strategically manage the conflict in a sophisticated manner. 'Contextualism', as a postmodern and critical realist philosophical notion, is a real domain of doing and acting in a real, intentional authentic way, which contradicts doing by theoretic pondering, recollection and repetition of this normative knowledge. The conflict with different knowledge interests remains as a blurred enigma for the students, because the educational template provides opportunities for and reinforces their worrying and other safety-seeking behaviors. Within the perspective of the critical realist philosophical approach (e.g., the students' learning styles evolve from current learning social contexts), the problem of these teaching practices is that the attempts to increase the students' self-regulated or reflective deep learning by rich scaffolding may remain cautiously taken up, and ultimately comprehended as rigid norms for teaching, not for a student's learning. The lack of incentives for deep and/or strategic learning seems to be an unsolved problem due to the absolute absence of crucial and mutually conjoined and reinforcing learning scaffolds tailored towards individual out-of-the-blue learning. As established in this research, a student's dualistically managed learning (theory–practice, etc.) through pers-

pectival switches or emotivist interests does not evolve into deep metacognitive mindful learning; that learning has its manifestation in open, multilayered ontological life, if at all. In that open daily life, individual learning encounters and confronts stimuli through conceptually and scientifically rich learning materials and a gradually deepening teaching process using all basic learning scaffolds, in addition to the use of extra scaffolds as required in addressing the vast divergences of students' learning competencies in teaching in large groups.

The remarkable divergences in the students' real learning patterns and orientations were noticed in all the main empirical outcomes and the practitioner's acquired validating data on the students' daily behaviors, for example in the outcomes in the end-state factor analyses of the students' basic competencies. Although Cronbach's alpha appeared to be lower here (particularly in post-test measures and in the surface learning style), it may suggest the students' fluctuating and diffuse learning orientations in these general teaching practices. Generally, the students may not have educational incentives and reinforcements for abstaining from their unmistakably strong tacit tendencies to surface learning activities and safety-seeking behaviors in teaching discourses where new software-managed teaching methods transform teaching to software-managed discourses within primordial dualist educational practices. These kinds of technical instrumentalist advances in educational practices do not necessarily improve students' deep and strategic learning activities, as seen in this research.

The students' divergence in their deep learning behaviors remained at the initial level. In the third and the fourth research projects, the slight and insignificant alteration in the students' learning styles occurred in both directions, but these changes were not important enough to try to explain.

4.3 Contradictory strategic options to learn as an adequate strategy for scaffolding learning

Next are recapitulated the main empirical outcomes of the students' anxiety control competencies. They laid firm grounds to go on with the scaffolding means developed in this project for the enhancement of the students' non-dual well-being and learning.

4.3.1 Positive interim changes in anxiety management

The main empirical results showed that in pre- and post-test scores the students' worrying decreased significantly, as was demonstrated by the effect sizes in the ACQ and in the other CBT questionnaires from the last project. Because of the social desirability and the acquiescent tendencies in a student's scores, that conclusion is made with caution without any possibility of evaluating how outstanding or permanent the improvement in the students' functional behavioral competencies might really be. The students increased their implicit understanding of the deep research issues in individual behavioral competencies at the end of the course. But when these improvements in their core behavioral competencies are moderate, they do not impact on more intensive self-regulated learning as one might have hoped. Theoretically it is conceivable that the students' resilient forays into deep learning are positively correlated with, or tantamount to, the student's competencies in managing their anxieties. But when the students' means in the emotion control

sub-dimension in the ACQ questionnaire are reviewed, their reflective behavioral competencies did not appear so strong. Therefore, the students' locus of control seems frequently to remain as dual; it undermines their mindfulness-based behavioral competencies and interferes with their active on-task performance, and increases their despairing worrying and rumination and other safety-seeking behavioral activities.

In any case, the teaching program was feasible for the enhancement of the students' skills and competencies in managing metacognitive uncertainties. Pre-post test changes in effect sizes were above 0.20 in all the last three research projects on the IUS questionnaire; it shows improvements in this crucial domain of reflective problem solving. These mean scores were also positively correlated with the anxiety control scores; it proves that both the Uncertainty Questionnaire and the ACQ addressed the same individual, psychological, behavioral dispositional constructs.

The overall feature of the positive pre-post test changes across the second, third and fourth projects in the students' behavioral and learning competencies is that the effect sizes (around 0.30) were slightly more significant in the last research project. It affirms the conclusion concerning both the adequate way to proceed in scaffolding and the positive impact of the intensive scaffolding of the students' basic metacognitive behavioral competencies. The empirical outcomes indicate that this program was urgently needed, that it was practically executable and that it was a feasible learning template for all the students in different ways. It was possible to introduce individual anxiety and uncertainty behavioral issues directly to the students' learning without lapsing into theoretical pondering on these deep psychological issues on human behaviors.

Regarding the stability of the students' core functional/dysfunctional behavioral competencies, a prevalent and perhaps highly justified practitioner's perspective is that rapid alteration in either direction in students' core behavioral competencies would not take place in these educational social practices. If these pre-post test changes arise due to the students' encountered daily stresses in their behavioral competencies in this behavioral realm, they occur in both directions as was shown. But these significant environmentally induced changes in competencies do not annul the main outcome presented in

Table 8. Changes in anxiety control (ACQ), means and deviations

research project 3		research project 4					
C group: general health practitioners N=24		D1 group: general general nurses N=29		D2 group: general nurses N=27		D3 group: general health practitioners N=20	
pre-test	post-test	pre-test	post-test	pre-test	post-test	pre-test	post-test
3,00(0,60)	3,00(0,63)	2,92(1,03)	3,23(0,91)	3,23(0,71)	3,40(0,85)	2,87(1,07)	2,97(1,14)
effect size=0,00		effect size=0,30		effect size=0,24		effect size=0,09	

Table 8 that the students' means in anxiety control indicate positive outcomes, proving that the implementation of the scaffolding in the fourth research project was most optimal in the invigoration of the student's metacognitive-reflective learning. These educational programs with large teaching groups do not create the highly confidential conditions for a student's collaborative teaching and learning that are required for the intensification

of her awareness and re-modification of her mild thought-suppressive safety-seeking patterns.

In the third research project, no additional attention was devoted to the students' more intensive monitoring and exercising in behavioral experiments and exposure training, while in the fourth research project the practitioner increased psychoeducation and guides to help the students to notice and engage with these exercises for managing their identified black spots and despair-initiating environmental and internal stimuli. It showed that this finding for scaffolding the students' daily learning by confrontational behavioral techniques was pivotal for their noticing and differentiating either positive or negative emotional loads (on-task performance/avoidant behaviors), as well as for their search for revisions of their potentially harmful safety seeking and avoidant behavioral patterns. Positive pre-post test changes in the group means in anxiety control emerged, and they did not become covered by the students' increased stress in the post-test measurements when they encountered greater environmental and educational stress just before their studying term was ending. Especially in the D3 group, the students' stress conditions were extraordinary high, not needing more detailed elaboration here.

It is difficult to provide one valid explanation of the pre-test-post-test changes observed in the students' anxiety competencies in both directions. For educational purposes, a partial explanation may be that the students were demonstrating or were somewhat implicitly aware of their shortcomings in the course's learning activities, but did not perceive or see a need for more intensive training using the behavior monitoring protocols. Evidently the students were not motivated enough to get the practitioner's or a fellow student's supervision and feedback on the most pivotal and feasible learning protocols. In any case, the practitioner's objective of enhancing the reflective competencies of the students with medium and well-developed learning competencies was fully achieved despite the insufficiently actualized supervision of each student. The students' fluctuating pre-post test changes in their basic core competencies was both moderate and often nugatory in these groups, and the main general outcome in positive changes prevailed at group level.

4.3.2 Moderate middle range variation of the students' core behavioral competencies

The imported research setting did not enable any research on the long-term development or degradation of the students' core competencies. The opportunity for the practi-

Table 9. Middle range stability of students' behavioral competencies in Anxiety Control and Learning Styles in C group (N=17) and D2 group (N=18)

	C group						D2 group					
	ACQ total		emotion control		threat control		stress control		ACQ total		deep learning		surface learning	
	start	follow	start	follow	start	follow	start	follow	start	follow	start	follow	start	follow
alpha	0,83	0,78	0,80	0,70	0,67	0,78	0,69	0,85	0,84	0,90	0,90	0,81	0,51	0,68
mean	3,00	2,89	3,13	3,13	3,91	3,92	3.35	3,10	3,23	3,38	2,78	2,73	1,98	2,03
s.d.	0,88	0,95	0,76	0,72	0,66	0,61	1,11	1,10	0,71	0,72	0,80	0,56	0,39	0,48
effect size	-0,12		0,0		0,07		-0,22		0,21		-0,06		0,13	

tioner to measure the students' core behavioral competencies within a seven-month span from the pre-test measurements arose only in two student groups (C and D2), but these results do not warrant straightforward conclusions because of the small group sizes involved. The follow up results for these specific teaching groups are presented in Table 9; they indicate that in the third students group (C-group) positive results in anxiety control were not attained, whereas in the fourth research group (D2 group), the results were positive after six months: they show that the fourth program might have some positive long-lasting effects on the students' core behavioral competencies. It was predictable that the slight positive changes occurred only in the students' anxiety control, but not in their learning styles. The students' competencies in anxiety control remain divergent in both the student groups, and the high student dropout rate does not warrant a straightforward conclusion about the general improvement or decrease of the students' functional core behavioral competencies.

Table 9 shows that the students in the D2 group perform the same and relatively diffuse learning after their introductory studying phase, when the pre-test measures were completed. The relatively high discrepancy in the students' learning styles demonstrates the educational challenges of setting up efficient scaffolds for the students' reflective metacognitive learning when there is a high priority educational objective of teaching students to do nursing under the constraints of the contemporary, ideal normative nursing practice.

As it was argued in this project, the current educational programs tend to maintain instructive teaching and students' non-strategic surface learning. In the third research project in group C, the students' (N=17, dropout rate was approximately 50%) means in the ACQ seem to be stable. This indicates either positive social changes in the teaching practices, or group differences as well as a slight positive impact of the fourth research project on the students' deep, behavioral reflective competencies.

4.3.3 Slight decrease in rumination and surface learning gave rise to significant development of adaptive metacognitive competencies

The students' rumination and worrying as specific safety-seeking behavioral patterns and deteriorating on-task performance activity chains are important issues that must be addressed in this teaching practice. In this research project, only a slight positive solution was attained in supporting the students to shed their ruminating behavioral activities, as Table 10 indicates.

A high mean score in the IUS indicates dysfunctional behaviors in managing one's

Table 10. Changes in the students' means in uncertainty and rumination in two teaching groups in the fourth research

The IUS			The TCQ rumination subscale		
D1, N= 28 uncertainty	start	end	D3, N=20	start	end
low above 2,60	14	6	high worry above 2,5	9	5
moderate 1,8-2,59	8	8	moderate worry 2,0-2,49	8	11
high, below 1.80	6	14	mild worry below 1.9	3	4
altogether	28	28	altogether	20	20

uncertainties and anxieties where safety-seeking behaviors become triggered by the need to have contextual security. The results in Table 10 for the group D1 indicate that for some students the program was efficient in improving their intolerance to insecurity, and for some other students the program seemed even to increase their intolerance to insecurities. In trying to understand these pre-post test changes by relating the outcomes of group D3 to the students' tendency to rumination, it seems evident that the students' active worrying did not increase in the course's execution. Instead of that, some students increased their other safety-seeking behavioral activities (falling into rote learning, neglect of behavior monitoring training), thus not benefiting from an identification of their adaptive and maladaptive confrontation of their anxious feelings and thoughts.

In Table 8, the general positive changes in the students' means in the ACQ were only moderately significant, but in Table 11a some students' higher scores on that questionnaire affirm more significant positive changes in the students' anxiety control competencies. It shows that the program was feasible for some students while not concurrently being unfeasible for other students. It is sound to argue that also the latter students gained a more implicit understanding of purpose and features of doing behavior training through the implemented behavior monitoring program. In any case, the most important thing is that this behavior monitoring package was executable in the ordinary teaching of psychology after the launching of the basic scaffolds. At least the program altered the

Table 11a. Changes in student's anxiety control (ACQ total index) in the four separate teaching projects

	C group		D1 group		D2 group		D3 group	
	start	end	start	end	start	end	start	end
low, below 2,4	12,5 (3)	20,8 (5)	21,4 (6)	17,8 (5)	7,6 (2)	3,8 (1)	20,0 (4)	10,0 (2)
average 2,4-3,2	54,2 (13)	41,7 (10)	28,6 (8)	25,0 (7)	34,6 (9)	38,5 (10)	55,0 (11)	55,0 (11)
high above 3,2	33,3 (8)	37,5 (9)	50,0 (14)	57,1 (16)	57,8 (15)	57,8 (15)	25,0 (5)	35,0 (7)
total	100% (24)	100% (24)	100% (28)	100% (28)	100% (26)	100% (26)	00% (20)	100% (20)

Table 11b. Changes in means of anxiety control (varying between 0–5) in seven separate measurements (frequency of students)

	research project 3	research project 4			validating outcomes	
	C group	D1 group	D2 group	D3 group	E1 group[1]	E2 group[1]
dropped*	20,0 (4)	12.9 (4)	0,0 (0)	14,3 (3)	13,6 (3)	36,0 (9)
stable*	40,0 (8)	45,2 (14)	88,5 (23)	61,9 (13)	59,1 (13)	44,0 (11)
arose*	40,0 (8)	41,9 (13)	11,5 (3)	23,8 (5)	27,3 (6)	20,0 (5)
altogether	100% (20)	100% (31)	100% (26)	100% (21)	100% (22)	100% (25)

*increase or decrease if a student's mean in ACQ mean score changed 0,30 or more; stable when a student's change in either direction was below 0,30

[1] The E1 and E2 students' groups do not belong to the empirical research project. However, these results are obtained a year after the fourth research project, and they provide additional validation for the introduced scaffolding for the entrenched teaching practice of teaching psychology. The results demonstrate that it is possible to seek optimal scaffolding of the students' deep metacognitive learning. The execution of this teaching program in the group E2 met with robust resistance from some students in regards to the transition to self-regulated and deep learning. It hindered all self-regulated student learning, because of the increased resurgence of the normative, superficial and group-level worrying discourses in the students' intra-group communications.

students' focus to one of real learning; this might have had a slight alleviating and latent impact on the dualist instructive teachers–students' discourses in this educational approach to nursing.

The students' means for anxiety control (Table 11a) indicate that the original normal distribution in the students' anxiety control competencies remained stable, and in Table 11b only one part of the students in all the three student groups increased their functional competencies in anxiety management. Of course the students doing behavior training protocols were able to benefit from the program because this deep contextual behavioral issue does not appear otherwise as one's real individual behavioral issue at all. The empirical outcomes in Tables 11a and 11b indicate that the scaffolding program is efficient for the students, regardless of their competency levels. However, it was expected that only a few students would perform persistent training of behavior monitoring by the intensive utilization of confrontational methods. Thus, the confrontational behavioral exercises possess a general positive impact for individual health sustenance if it would be possible to implement in teaching these confrontational behavioral training protocols. As seen in this fourth project, these learning means for the individual training of one's behaviors are not easily manageable in instructive teaching practice.

In the fourth research project, the results in the stepwise problem-solving procedure measurement (Table 12) are similar to the third research project (see the general outlines of the measure, pages 277-279). The program was very efficient in strengthening the students' reflective problem-solving competencies, on which ordinary formal problem-solving training protocols have no real impact. Worth noticing also is that only a third of the students with more advanced behavioral competencies were able to complete all six nodal problem-solving steps successfully, at least at the post-test measurements; this clearly indicates that these students performed their daily management and learning on their own and not only by adapting to general formal ideals. As the fourth step in Table 12 indicates, at the end of the program a slight majority of the students still encountered a

Table 12. The students' success in solving the written six-step reflective problem-solving procedure; the percentage of the successful solutions (yes/no)

	1. labeling of one's daily hardship(s)	2. utilized pie chart method in evaluation of the stressfulness of one's daily hardships	3. successful invention of main living strategies in managing with one's hardships(s)	4. consistence of one's living strategies to one's managing with one's hardship(s)	5. plus-minus evaluation of the most actionable behavioral strategy in managing	6. successful conclusion of the most preferable daily activity patterns in managing with one's hardship(s)
project 3, C (N = 25)						
pre-test	100	100	83,0	50,0	20,8	8,3
post-test	100	100	9,8	66,7	62,5	62,5
project 4, D1 (N=29)						
pre-test	96,7	83,3	64,2	16,7	3,3	0,0
post-test	96,7	93,3	83,3	63,3	30,0	26,7
D2 (N=28)						
pre-test	92,8	85,7	78,6	46,4	18,5	28,6
post-test	92,8	85,7	78,6	64,3	53,6	32,1

fundamental complicating dilemma when they, by dualist reasoning patterns, either identified their living problems as being related to daily living circumstances or as merely being initiated by their innate negative emotions and other intrinsic negatively appraised matters. Within these dualistic thought confinements an option for a student's smooth invention of realistic actionable behavioral programs for her contextual behavioral management of her emotionally appraised problems and challenges does not come up. This measure was applied primarily for the validation of the practitioner's assessments of the students' living and learning behaviors. Because the scoring criteria are somewhat varied in each research project, the attained results (in Table 12) are not comparable across the three separate teaching projects. Particularly in groups C and D2, the practitioner's criteria for classifying the students' expressions were somewhat ambiguous: how, in steps 3 and 4, to categorize the students' surmountable obstacles in construing their operational plans for their daily living strategies?

The results presented in Table 12 show that the students experienced difficulties, especially in identifying contradictory actionable living strategies: they exhibited a prominent tendency to turn to an impulsive and unmanageable practical solution which might have been contradicting the real divergent and opposing living options they were facing.

4.4 Shortcomings in the students' behavior monitoring exercises

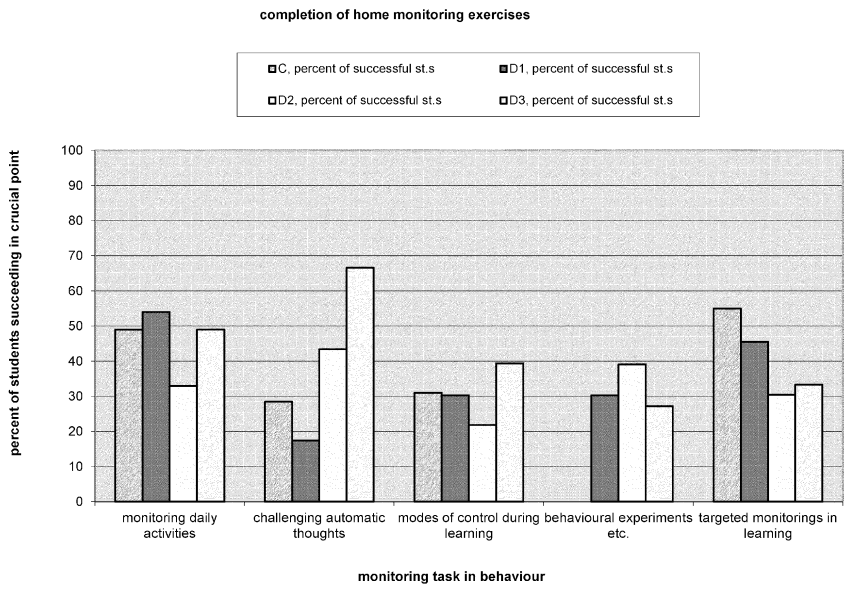
The accomplished gradually deepening psychological research, as a strategy for achieving positive changes in the invigoration of the students' reflective mindful behaviors in constrained social learning practices, is the only feasible strategy for progress in psychological scientific terms. The students' exercising of behavior monitoring protocols pertains to metacognitive behavior in individual concurrent learning, where individual learning is and comes out as daily activities and enmeshed in all daily activities. This kind of behavior monitoring as exercises is executable when introducing the students to identify and evaluate their internal behavioral forces through contradictory behavioral modalities. In critical realist terms, human true knowing sustains the idea that an individual in her behavior monitoring exercises referentially detaches from her real behaviors, which may reinforce her mindful metacognitive behavior management. Behavior monitoring protocols guide a student herself to become metacognitively aware of and to select the optimal criteria for recording and appraising the nature and purpose of her recent and current activities. This initial approach to the introduction and execution of behavior monitoring methods, with the incorporation of the specific CBT methods, is often challenging for a student. A student's shortcomings and lapses into deploying specific dualist criteria in her behavior monitoring mean that her smooth spontaneous awareness of all behaviors becomes broken. Either she is not motivated under her emotional loads and stress conditions, to monitor her behavior at all, or performs criteria-based behavior monitoring, thus perhaps not seeing any options for re-modifying her behavior monitoring and the real behaviors being monitored.

The students' difficulties and reluctance to intensively engage in performing behavior monitoring exercises was high, but that does not annul the feasibility of the behavior monitoring protocols, as was argued all along in this report. In Figure 4 are the summary results

of the students' frequencies of successfully performing behavior monitoring exercises by the introduced and psychoeducatively guided training protocols in the third and fourth research projects.

The primary reason for a moderate improvement in the students' learning outcomes and basic behavioral core competencies was that the students kept limited and uneven records without applying individually selected stepwise and persistent exercises for beha-

Figure 4: Percent of successful students in behavior monitoring in four teaching groups.



vior monitoring. However, the students were introduced to novel and self-initiated and selected practices as means for fostering their deep self-initiated learning in their immersion in their own learning activities. This critical realist philosophical approach maintains a gradually evolvoing research logics in the four empirical projects. At first it begins from empirical research on adequate psychological descriptions and in the second project enables verification of adequate psychological explanations. In the third and fourth project it became possible from these explanations deduced implementational programs. It is a re-contextualized psychological practitioner's perspective in the students' reflective multi-process-product problem-solving behaviors, which Bhaskar (1993) has elucidated in dialectical critical realist terms to referential detachment – open totality – human intentionality. An individual may go beyond Hegelian dialectics into the maintenance of her behaviors guided by one's concrete utopian thoughts on the future. This strategy was partly successful, but of course it was not perceived by the vast majority of the students in this intentional activity sense, which was the reason for introducing training means to the students' training and exercises. It was not particularly successful in the two subgroups of the students, those with lagging adulthood self-development and weak on-task performance in daily

learning challenges, and those with significant behavioral tendencies to despairing thinking and safety-seeking behaviors.

The performed multivariate analysis methods (and specifically factor analyses) showed that the students' end-state divergences in adaptive and maladaptive behavioral competencies remained stable, as was expected. In addition, it justified the strategic scaffolding of learning for the students with advanced reflective core competencies; it was an attempt to re-establish an individualistic perspective on contextual living and its individual recourses for seeking the weakening and abolishment of normative, idealist, egalitarian, ethical communicative discourses, which undermined individual intentional actions. The students' reflective observational and behavioral adaptability to individual contextual behaviors and to a vast variety of behavioral determinants behind their behaviors, and to a discrepancy in individual human behavioral recourses, seemed to increase. In this reflective perspective, the results were moderate but positive throughout. It is not avoidable in teaching in large student groups of rich and deep individual matters on human issues that the two subgroups of the students covertly or overtly persist in their instructive and surface learning orientations and activities. The scaffolding program did not improve the deep learning skills of the mediocre students. When their learning operations and activities are fragmented and continuously broken without their smooth metacognitive handling of their learning behaviors, their strategic learning is inadequate to attain positive academic learning outcomes.

The behavioral experiments and exposures were effective for the students with advanced skills, but they were not workable and feasible in individual practice for the students with weak reflective learning skills. That is why such a great number of students omitted the performance of behavior monitoring exercises without their providing the practitioner with any workable option to supervise them in their training, while these students' learning was stuck with their surface learning and was already strongly reinforced by their avoidant behavioral patterns. This theoretical scaffolding position to the students' identifying and re-modifying of their avoidant behaviors served as the validating reframing for some of the students who demonstrated a great number of safety-seeking behaviors and possessed dysfunctional meta worries or maladaptive beliefs in need of direct confrontation by them, with novel methods if possible.

4.5 Incomplete transition from instructive teaching to coaching and collaboration

In basic nursing studies, instruction and lectures are the dominant teaching practices with their efficient causes (or 'transfactual forces' in dialectical critical realist terms); they are unlikely to be removed by one limited teaching program. The students' worrying was deeply embodied in their behavioral learning activities, and reinforced by their constrained social life along with its specific transdictive complexes, to put it in dialectical critical realist terms. That strict 'practical' action orientation leaves no room for a student's mindful, smooth and persistent on-task performance in their behavioral encountering of open dynamic academic educational environments. Although coaching was achievable occasionally in these psychology teaching sessions via the use of the basic cognitive behavioral structure of a client session (review of home-exercises, coaching and

other practices on essential issues in individual study activities, re-evaluation and preparations for progress in individual learning in this program), coaching remained relatively diffuse and therefore it did not introduce advanced collaboration in teaching the students.

Nonetheless, the research project established some basic and additional scaffolding, which in principle guided the practitioner's path to collaborative teaching. In Figure 2 (p. 432, next chapter) are presented the general outline of the third and fourth research projects in dialectical scaffolds, and their balanced application in teaching psychology. For now it remains as an unfinished process-product and product-process of a Work-in-Progress, as delineated by Bhaskar (1993, 1994, 2000).

V. Critical realist, psychological educational research to scaffold a student's learning

Summary

First, a summary of the dialectical, critical realist scientific tenets to emancipatory-orientated teaching is presented showing that this evidence-based teaching practice into a teacher-practitioner's transdisciplinary work evolved in a four-step research that is not possible to evaluate or meta-evaluate via ordinary dualist theory- and method-driven research logics (Section 1). Second, Section 2 outlines how teaching large groups of students with disparate functional and dysfunctional behavioral competencies, via the constructed scaffolding position into a student's metacognitive behavior monitoring and exercises with CBT treatment means, opens up the fourth wave in CBT mindfulness therapies in preventive health care work.

Section 3 briefly asserts that the performed flexible, rich scaffolding of a student's and the students' daily learning by metacognitive, behavior monitoring devices provides the initial starting point to collaborative teaching in eschewing the harmful, structured social confinements to instructive teaching. It also provides innovative means to novel teaching projects in students' vocational studies and even invigorates the reflective learning of students with mild, anxiety behavioral problems. In these summarized depictions of the execution of the scaffolds in this teaching practice there is no space to elaborate on the execution of the rich scaffolds, such as coaching, software teaching–learning template, psychoeducation, real-time feedback and supervision. Rather, these practical explications and elaborations of the scaffolding practice would conflate and muddy the practitioner's emancipatory-oriented teaching as a creative and individually tailored teaching in empiricist dualist practices. It is argued that a total move away from the latter dualist, learning undermining practices became possible by having the support of dialectical critical realist philosophical tools and tenets to guide and underlabor the logic in this teaching practice and its empirical research.

In this reporting approach there is no direct option to pinpoint a main general outcome of the executed research either: (a) for providing research paths into emancipatory teaching in other educational realms, (b) for moving forward into more tailored CBT scaffolds for divergent subgroups of students or (c) in depicting a single empirical out-

come and finding as more crucial in this CBT-informed teaching practice of psychology. In fact, all three are real outcomes of this research work but are outside the aim of this report: to show the way to emancipatory-oriented teaching and student learning. If someone would start this kind of a scientist-practitioner's work, the pivotal issue is firstly to make progress in basic scaffolding of dynamic and flexible teaching methods into a student's self-regulated learning. After that, if progress in flexible teaching via coaching is successfully attained, and students' basic learning difficulties are described, and students have strengthened their behavioral orientation to improving their basic self-regulated learning activities both in managing their integrated classroom and distance learning, then there is a real need to scaffold students' learning via behavior monitoring exercises and CBT treatment means if the most adequate psychological explanations are to be achieved via the previous empirical work in this transformative life.

1. CRITICAL REALIST POSITION TO THE PRACTITIONER'S PSYCHOLOGICAL SOCIAL RESEARCH ON THE CONCURRENT TEACHING PRACTICE

1.1 The emergence of the practitioner's position to psychology teaching

In this research the general logic into empirical psychological enquiry gradually deepened and without the practitioner's initial explicitly laid aims this kind of research logic cohered with the RRREI©-model of applied social research presented by Bhaskar (1993, p. 133). This occurred because the close relatedness of dialectical critical realist tools to emancipatory practice in the scaffolding of a student's daily learning emerged only through the practitioner's flexible use and execution of CBT means for inventing and incorporating individually tailored, metacognitive, behavior monitoring training and behavior modification protocols.

This psychological research of inventing and implementing empirical programs to provide opportunities for each individual's metacognitive learning could have an impact on social transformative practices. Bhaskar (1998) describes and grounds the scientist-practitioner's approach in action research in the social field by psychological methods and by empowerment of the students' behaviors. He outlines the research problem in the society (social) and person (individual) connection:

> This radical conception contra Weber's and Durkheim's ideas this connection…must be conceived as one in which people self-consciously transform the social conditions of existence (the social structure) so as to maximize the possibilities for the development and spontaneous exercise of their natural (species) powers (p. 217).

In this perspective and in CBT terms, CBT conceptualizations and practical psychotherapeutic methods are logically and ethically justified, practical means to maximize

students' behavioral capabilities in teaching and they are not ideologically or theoretically inferred methodologies.

However, ethical issues and problems in warranting all the practitioner's means to teaching and its very practice would need to be pondered further: where alethic truth as a dialectical critical realist position to discovering ontological generative mechanisms at first in the transitive social domain, and then even further into intransitive domains where social structures are deeply structured and not amenable to enabling changes to attaining freedoms in the educational life itself. And the executed critical realist research, albeit being a sound and from the beginning of the third research project rather explicit practitioner's work position in continuing with ethical naturalism and moral realism, did not enable the discovery and elucidation of the actual generative and structured mechanisms that sustained the dominance of the (un)holy trinity of instructive teaching – surface learning – of actualist norms in nursing practice. The attained minimal changes in the students' daily learning behaviors to deep metacognitive mindfulness learning were also small and evidently would remain fairly transient, when generally and more often the students' learning remained as their initial surface learning even in this psychology course. In this critical realist perspective on ethical naturalism and moral realism the attained research logic was the only empirical research strategy to attain and show the real state of affairs of the students' divergent learning behaviors. Even at the end of the project the practitioner still confronted the real ethical problem that the project's impact on the educational management and leadership practice remained as nugatory and even controversial. The project did not address, even in the sense of ethical tetrapolity, and did not bring any positive changes to the deep irrealist teaching structures and lay management and leadership discourses, in that sense the project did not attain its main purpose. The project's impact on the open totality of nursing education remained as controversial because the project was disregarded and taken as nugatory by lay management and leadership practices in the educational organization in all its executive phases.

At least, many pivotal, dialectical critical realist tenets and practical orientations to managing emancipatory social research logics were successfully applied in this research, such as the primacy of social and polyvalent ontology over epistemological theoretic positions which is an entirely novel approach to the practitioner's as well as to the target persons' (the nursing students here) individual knowing of, and managing with, transcendent world mechanisms without pre-chosen theoretic concepts and theories. By seeking to eschew inductive reasoning via a strong, reflective, practitioner's work position already depicted by Schön (1983) in working with material world things via dialectical critical realist tenets to referential detachment, dialectical and transcendental argumentation of the open social rhythmics were attained in this research.

In this research practice, nomologic theoretic positions in education and in its empirical research of dualist (theory–practice and mind–body etc.) practices are argued and verified as harmful to the students' reflective learning. That is because for students with deficient behavioral competencies these practices initiate and give rise to avoidant behavioral patterns, such as rumination and worry in managing social constraints and dualist surface learning practices, and their teaching was affirmed to stay confined to instructive teaching that abolishes collaborative teaching practices.

1.2 The emancipatory research approach to psychological educational research

The social world arises from the material natural order and is open to social changes and so too is a student's behavioral learning template open to the practitioner's objective in his reflection on polyvalent world things. This reflection does not adapt to formal one-process problem solving, where flexibility and the innovative nature of human problem solving is frequently excluded from education by unreal, normative superficial and technical methodologies that combine methodological ventures into a coherent formal model or viewpoints of three separate unrelated ontological realms: material, social and psychological. According to Zins et al. (2004), it excludes the metacognitive reflective nature of human behavior and problem solving; human reflection is 'stuck' with the coercive structures of the social world, that is, through the process of internalization by the human mind reflection becomes theorized as a flat ontology along with its pre-conceived factual laws and not with the fundamental transformative structures of demirealities (Hartwig, 2007, pp. 113–116). This would require more elucidation of the ways these actual laws become real mechanisms of the social world and in its lay practice in forms of transdictive complexes that can impair the real emergence of reflective learning and all other activities as to how the normative practices coerce individuals to adapt to ideal norms.

The position in this psychological research is to seek the abolishment of demirealities through the use of adequate empirical laboratory programs in which the attained empirical outcomes are not prone to evaluations on how true the results are or to direct generalizations to other educational environments, and neither are they to be inferred and addressed from valid nomothetic theoretic concepts. The internal and external mechanisms (bad social norms that intrude into psychological behavioral management, such as biased cognitions, which can be assessed by a practitioner) can demoralize the client and impair her metacognitive behaviors. However, a research option to perform an emancipatory and applied psychological social research, functional behavior assessment and enhancement of the students' target behaviors via scaffolding of all their opposite kinds of daily learning activities into metacognitive reflective problem-solving behaviors is grounded. The assessment and the implementation of scaffolding programs are ethically grounded in a critical realist philosophical position and in addition the dialecticization (see Norrie, 2007, pp. 131–132) of this philosophy enables emancipatory research in the constrained social life. In the domain of advanced individual learning the theory–practice dualism in individual reflections can be overcome; if not, by becoming theoretically idealized, these norms obstruct a student's reflection of the polyvalent mediated life. This impairment is tantamount to the absence of spontaneous problem solving and ethically right individual actions. To put the impairment in psychological terms, they are tantamount to a student's anxiety and emotional problems, and they need to be addressed by the teacher-practitioner via CBT scaffolding means.

If the social world was not seen as having deep structured mechanisms that are transitive and indeterminate but was seen as being only determinate, then there would not be a sound position to emancipatory-orientated teaching practice and its psychological research, and the scaffolding position invented here to support a student's daily management of daily rhythmics to her individual managing of the open constrained social life

would be impossible and would be founded on method- or theory-driven dualist research. When the scaffolding approach in seeking collaborative teaching means was the practitioner's research objective, here there is no sense to elaborate and reach at concluding arguments of the social and other ontological mechanisms which maintained the unholy trinity of surface learning- instructive teaching – of theoretic knowledge of actualist norms.

This research does not discuss how the critical realist position to the external and internal world becomes seen as an approach to enrich and to search for adequate psychological conceptualizations in general discussions on the philosophical issues of critical realism and dialectical critical realism. For a psychologist and psychotherapist who uses CBT therapies and laboratory programming as psychological therapeutic and educational means, critical realist discussions so easily veer to having the ontological external world as the primary topic, it is a real lack that in psychotherapy work realms there do not seem to be practitioners who are keen on evaluating their work practice and envisioning and implementing richer conceptualizations of the social cube.

1.3 The practitioner's concurrent metacritical evaluation and revision of the research logics

The use of philosophical tools to evaluate the performed empirical research via dualist research logics (see Bhaskar, 1986) would not address the logics of this research. These transcendental idealist or empirical, realist research means, such as via inductive–deductive reasoning of the research steps to seek verification of falsification of the laid scientific hypotheses regarding the real laws and lawful regularities of the world, exclude the practitioner's direct referentially detached reflection on, and of, the real transformative social practice. This dualist evaluation of the problem area, and of scientifically adequate research ventures, cannot see the problem of inductive reasoning which can abolish the practitioner's transcendental and dialectical reasoning and view of the research objective as an open constrained and pre-existing deeply structured social world. For example, by enumerating some pivotal turning points in transcendental, realist research logics into social research here, it is crucial to see at first the primacy of the polyvalent constrained transcendental and ontologically pre-existing social world in its generative mechanisms as the constrained real template to the rise of individual anxiety disorders (such as rumination and worry).

Second, in the detrimental, psychologically practical educative position to dualist self-reflection and to empirical search of presupposed psychological mechanisms in human mind or biological and material mechanisms, the exclusion of the ontologically pre-existing and structured social life would directly exclude the reflective practitioners' work position to emancipatory-orientated practice in psychology teaching. In these latter practitioners' work positions real options would not emerge to strive for changes in transformative and, in the perspectives to social research, largely indeterminate social practices via seeking invigoration of the students' mindfulness, metacognitive learning behaviors. Therefore, the critical realist position to social life has a vital impact on CBT client practices in searching for means to support a client or a student to shed off her potential safety-seeking avoidance behaviors that occlude her reaching to the intentional

management of her social life in her alleviation of her largely tacit despaired and despairs-initiating self-reflections. From the open social cube perspective of an individual's anxiety behavioral activities, such as avoidance or real world obstacles, it is conceivable to see how an individual's sticking with self-reflection means loss of her seeing the social and all other mediated forces at work beyond and along with her internal forces of her concurrent behaviors.

Third, even the ontological mechanisms in the open, social transformative life that are causally efficacious forces and impact on the emergence of an individual's anxiety behavioral patterns become absented by a student's avoidances in her referentially detaching knowing acts and activities. Theoretic, dualistic knowing acts in her resurrection of theory–practice dualism via theorized, actualist presupposed laws of object matters do not invigorate or provide individual space in her reflecting or to her management to strive for abolishment and shedding of bad social constraints. To that purpose, means of metacognitive behavior monitoring were deployed and designed in this research; from the contradictory and tentative CBT-informed modality positions (see their philosophical derivation, Bhaskar, 2000, on dispositional and categorical realism) devised training means could be more functional than contemporary discourse-based psychotherapeutic means and they would address a client's open social daily rhythmics to her scrutiny and behavior re-modifications.

Fourth, in a philosophical sense, the introduction of behavior monitoring means to the students' daily behaviors in the practitioner's as well as a student's own use led to their eschewing of both anthropic fallacy (that is, "the exegesis of being in terms of human being", Bhaskar 1993, p. 205) and linguistic fallacy (that is, the analysis of being as our discourse about being, Bhaskar 1993, p. 206), which exemplify the lack of individuals' flourishing in their social life. The introduced and implemented training means guide a student to dialectical and transcendental reasoning of her behavioral matters that get her out of value–fact dualist reasoning and strengthens her a priori reasoning in her behavior management. Or, if not, at least the training means would not reinforce a student's inductive reasoning to illicit fusions and fissions in her seeking of generalizations along lines of dialectical universalizability.

Fifth, a dialectical, critical realist philosophical position to ontological, open social transformative life was crucial to have as the practitioner's primary work template in this teaching-research project in order to invent teaching and learning scaffolds for the students' metacognitive learning. It was crucial to have that learning template to a student's metacognitively managed learning in the search for educational means and learning templates that, in a student's tacit or conscious attempts would bring back her reflections and her intentional management of the social mechanisms that coerced and enabled her daily learning. The metacognitive behavior monitoring position is possible to explicate as coherent and ethically sound in search for a student's abolishing of inductive reasoning and of her having stronger dialecticized metacognitive understanding of the multilayered contradictory mediations of the social life.

Sixth, unfortunately there is no space here to dwell on either its philosophical elaboration, or on the reasoning, of the indeterminate social mechanisms that almost totally exclude lay educational and management debates on this educational life that has become seen as determinate and similar to the natural order of the deep material structures

of education. This largely ideologized, strong deterministic position to knowing and managing matters of the social world in forms of flat ontology and of ideal norm guidance, and even determining a student's lay learning behaviors, abolishes her discursive intellect activities in all novel and authentic forms; this had led to the objective of this research, that is for a student to perform CBT-informed behavior monitoring exercises to manage her daily deep social rhythmic. By these behavior monitoring and training protocols she might revise her appraisals and behavioral patterns to more functional ones in her management of social mechanisms, and shed off her identity thinking and theorizing in actualist terms about constant conjunctions of inductively presupposed world mechanisms.

Seventh, there is no space here to discuss how the practitioner's transcendental and dialectical reflecting of the educational open social life was adequate by itself and by the support of the four-step psychological research which soundly and logically verified feasible means to bring back causally efficacious forces to enable the invigoration of the students' reflective learning. Generative social relations, as strong lawful causalities by being deeply structured generative mechanisms in maintenance of the ideological normative educational practices, were seen and sociologically elaborated and somewhat also explained by the practitioner (and often by the students at least implicitly) in his long, teaching practice career. But sociological explications of them would not help the students attain preferred social changes in these deeply structured mechanisms of the social cube of education and its generative mechanisms that pointed strongly to practical confrontation and revision in a student's individual behavioral realm of her daily learning.

Eighth, every individual student in her referential detaching reflections, or in other words in her negating and absenting activities, knows and evaluates her many contradictory world lines and matters and, although there are no explanatory critics or meta-explanatory arguments, by changing her actions in this emancipatory approach her social life is not open to the undermining of dualist coercive norms. This is the real underlying ground to the deployment of CBT questionnaires to a student's assessment of her rhythmic behaviors, as well as to the practitioner's analysis and evaluation of her scores, and his seeking changes in the constrained practices in which he is not totally captured but able to go beyond inductive reasoning.

1.4 Depth social ontology as the template to psychological explanations for implementations of laboratory programs

In the first research project the practitioner addressed depth social ontology through psychological research work, and the problem required psychological conceptualizations of the object phenomena under research (the students' procrastination in their surface learning behaviors) that was accomplished by empirical demonstrations of the students' largely weak and broken, metacognitive behavior monitoring of their daily behaviors. Although the social educational life of the students' learning template is deep and multi-layered, the practitioner had to have a strong, behavior assessment position to do psychological research and apply changes to the template because this was the only way to have empirically verified optimal psychological explanations of the described object phenomena, such as a student's procrastination and surface learning. It was attained by turning to CBT conceptualizations on anxiety and uncertainty management in the second re-

search project, in which the students' disparate to opposite direction-tending behaviors were explained as their divergent, behavioral anxiety management competencies in which a large part of the students' with meager metacognitive competencies had latent anxiety behavioral problems such as rumination and worry. This type of a scientist-practitioner's work and its concurrent but totally independent empirical research on the performed teaching practice is not possible in dualist, empiricist psychological sciences.

In this practitioner's position to psychology teaching it is crucial to have behavior assessment as an approach to functional behavioral assessment, similar to contemporary, client CBT practices, so that optimal psychological explanations directly inform and guide the scaffolding of the students' daily learning. The assessment was attained within the realm of each student's functional and dysfunctional behavioral competencies that in large group settings required a strong assessment position to the social transformative life primarily on the students' social learning environments. A student's behavioral competencies do not refer to individual capacities or capabilities, such as abilities or to their determinate lack, instead they are deep individual psychological structures potentially open to continuous changes in a student's management of her daily rhythmics where uncertainty and anxiety behavioral issues reside at the heart of true individuality. There is not the space here to delineate an individual's all envisioning, evaluative decision making and all individual activities in the maintenance of the daily world lines to her expression of her true identity, or to how she engages in managing all tasks that have become taken and been taken as behavioral tasks by her. Fortunately, this uncertainty and anxiety management psychological realm was taken from the beginning in this four-step empirical research and practical teaching of psychology; and it was taken as the key learning objective in the third research project. It is a huge advancement on traditional, dualist modern psychological conceptualizations to mental health, and philosophically it is a valid position to strive to trustworthy and ethical life also in nursing practice along the lines of ethical naturalism and moral realism of dialectical critical realism (see ethical tetrapolity, Bhaskar, 1993, p. 262).

In the third research project, a psychological approach to functional and dysfunctional anxiety management in a student's daily learning of psychology showed directly the need for the practitioner's inventions and implementations of laboratory programs to invent and implement CBT treatment means via metacognitive, behavior monitoring recording templates so that the students could identify, revise and re-modify their daily learning behaviors. At the end, the practitioner's evaluation and validating arguments of the attained empirical pre- and post-test outcomes and his metacritical evaluation of the feasibility of the scaffolding means within the social cube position became possible. It became established that the invented and implemented laboratory program gradually evolved as workable and adequate but it was weak in enhancing the students' individual daily management in any of the three student subgroups. In the fourth research project the entire program was slightly positive and most optimal in countering the instructive, educational coercive forces via refinement of the program by means of more confrontational behavioral exercises, and when options arose via the practitioner's firm use of collaborative teaching means, such as coaching, psychoeducation, real-time feedback and supervision of an individual student's daily learning.

1.5 Some metacritical evaluations of the four-step research

The first research project described the students' divergent daily learning behaviors in adequate psychological terms (such as the students' procrastination, concurrent breakdowns in learning activities and route learning) as became possible by deploying research means to the critical realist-informed, metacognitive behavior monitoring approach. Without that practical position to the introduction of means to behavior monitoring recording a deeper psychological explanation reframe to the students' divergent learning behaviors in their daily (learning) behaviors in their rhythmic life would not have emerged. Without a critical realist-informed position to individual's 'out-of the blue' being in an entirely subject–object dualist world the practitioner would have veered into the original empiricist research logics in recourse to abductive reasoning, and to the optimal dualist theorizing of the students' capabilities and skills, but not onto non-dual assessment and measurement of the students' maladaptive and adaptive learning behaviors in their social life. Without behavior monitoring means the practitioner would not have had any practical way to shift his teaching means into more collaborative ones in scaffolding the students' teaching and learning.

In the second research project by staying with the open (social), totality ontological realm the practitioner by transcendental, dialectical argumentative lines explained the students' procrastinating and surface learning by his turning to a deep, critical realist-informed position to individual dual or non-dual managing of a student's ontological, dualist world matters in their daily rhythmics. By introducing CBT questionnaires, generally used in clinical client settings and research on contemporary empirical research of deep behavioral constructs, the practitioner could execute behavior assessment similar to CBT client settings. It was affirmed during the analysis of text comprehension of learning materials that by psychological conceptualizations students' divergent, daily learning behavioral activities and activity patterns, such as safety-seeking activities, could be better explained as their divergent and even disparate anxiety and uncertainty management competencies. It was empirically established that a student's metacognitive reflective learning is an unachievable educational objective if the only scaffolding to psychology teaching is via instructive dualist theory- or practice-informed methods.

This psychological explanatory reframe on anxiety management, common in CBT practice and research, deepened the practitioner's behavior assessment of the students' behavioral competencies that, in their psychological nature, were primarily metacognitive and not formal, and thus they were individual dispositions in their character. In the third research project the practitioner's quantum leaps through counterfactual argumentations led to the invention of practically executable behavioral programs in the students' daily learning of psychology for their identification of potential maladaptive rumination and other safety-seeking behaviors and, if feasible, to shed off their avoidant patterns thus giving rise to their smooth on-task performance of daily management activities.

In the third research project, the execution of the expanded behavior assessment of the students' daily behaviors in this educational, transformative, transforming constrained life, and seen as real constrained mediated forces within the open social cube, enabled the practitioner to see and empirically verify that the students' surface learning activities

were strongly reinforced, and the students were even forced by educational, structured coercive powers to superficial and broken, behavioral learning patterns. In the fourth project, the practitioner researched whether it was possible that the students could abolish their behavioral passive and greatly damaged learning activities through the introduction of confrontational behavioral training exercises, such as behavioral experiments and exposure training. As seen here, some slight improvement in the students' deep positive anxiety and uncertainty management competencies were attained during the course's time span, but evidently they were not more enduring in the students' future living and learning. Social structures in maintenance of the educational practice and the students' learning patterns in instructive dualist spheres were strong enough; the program was relatively nugatory in bringing out gradual social changes in the educational teaching–learning practices towards more non-dual collaborative ones. However, this traditional, empiricist, dualist critical position to evaluate the program is insufficient alone, rather there is a need for metacritical evaluations of how the ethically sound, emancipatory perspective to teaching practice is workable and internally consistent and logical in setting up and implementing learning scaffolds to enhance the students' metacognitive mindfulness learning in this real practice.

The basic logic of preformed scientific enquiry is that the constrained social world of teaching and learning practices is the realm of the practitioner's dialectical and transcendental reasoning, and from that understanding of the deep multilayered and constrained social life to the derivation and to empirical verification of adequate psychological explanations of the students' disparate, mutually opposing and viable behavioral competencies in anxiety management. The same uncertainty behavioral realm in scaffolding the teaching of psychology, and of a student's learning of psychology, provides empirical data for the practitioner-researcher; there are no theoretical and operationally defined ways (as theoretically derived variables to be measured) to seek resolution of theory and practice dualist issues in this kind of empirical work. The logic of scientific discovery in incorporating theory and practice in the scientist-practitioner's reflective work in his aim to have an optimal scaffolding template for the students' metacognitive learning resides in his deeper understanding of the constrained, real social life, and it is the realm of seeking validation of his assessments and evaluations by psychological empirical research. Hopefully, the reader, by reading each of the four separate empirical research projects both separately and mutually interwoven, will comprehend how the practitioner's concurrent integration of psychological theories and teaching interventions in CBT treatment means, and the practical measurement of the feasibility of scaffolding, was gradually made possible, and how the research projects gradually became enriched for the most optimal practical solution in the fourth teaching program.

To ground the deployed research and practice means in this research work there is a real need to integrate the many crucial, dialectical, critical realist philosophical tenets used by the practitioner to stay within an emancipatory research perspective. In an open, social constrained totality (in dialectical ontological realm of 3L), and in principle, the everlasting social transformation of the multilayered and vitally efficient forces would be one issue in these delineations and explicitly presented argumentations of the non-dual assessment perspective of the students' dual or non-dual learning and daily living. There,

at least implicitly, the practitioner's intentional means to promote education, as it is possible and necessary in an emancipatory-orientated teaching practice, would emerge into initiation of the students' absenting of coercive educational practices in their engagement with more intentional learning activities. This heavy scaffolding to their metacognitive learning surely provided learning guides and CBT exercising means either for their choosing of the most feasible absenting behavioral activities in their dual identity thinking (meaning the absenting in the 1M), or for their perspectival switches and to other differentiating activities (in the 2E), as well as for their multiprocess daily activities (in 3L) or to their spontaneous contextually arisen right actions (4D).

Many deep meta-issues on human knowing of truths were addressed during the elucidation of all kinds of individual learning; ethical issues require presentation where the world as empirical, actual and real, along with intransitive and transitive world domains, need to be part of the practitioner's work equipment. It is necessary to outline the truth tetrapolity and critical realist position to the philosophy of language in order to see that the dialectical critical realist and psychologically elaborated position to human agency, with its synchronic emergent powers and internally managed subjective intentionality, as an introduction to the metacognitive behavior modalities, and to devised behavior monitoring and its recording and training protocols, would be seen as adequate.

However, in order to have concrete utopian goals, the practitioner's practicing psychology teaching about human nature that sought invigoration of concrete and general singularity being, needed, at least implicitly, that the practitioner worked intensively through scaffolding and not through dualist instructive teaching discourses in order to have ethical sound bases and incentives for his work. It is worth recalling that it would not be possible to attain a direct elucidation of the scientist-practitioner's or a practitioner's work position in large group settings if the behavioral work template via metacognitive, behavior monitoring exercises had not been first attained through the strive for trustworthy teacher–student discourses. Therefore, the latter issue was the main objective in this report and not elucidations of a scientist-practitioner's general work position. In that reporting approach to gradual implementations of behavior monitoring means the reader can see how this research is connected to contemporary educational and CBT-informed research and its practice. In this kind of report there is the need to elucidate how, by dialectical critical realist metacritiques[1 and 2] (Bhaskar, 1993, see for example on p. 354) on omissive and explanatory philosophical critiques, it is possible to show what research tools have been amiss in this research, and more generally in contemporary empiricist psychological research, and what tools need to become rejoined in having emancipatory-oriented research in educational practice.

1.6 The practitioner's psychological theorizing in issue-driven research

This kind of issue-driven research to enhance the students' reflective behavioral competencies and metacognitive daily learning would be possible to elucidate and elaborate through a great number of heuristic, psychological behavioral models in CBT conceptualizations, but they are not presented in this research. Some of the models are only discussed in general terms on an expansion of the philosophical notion of self-reflection to cognitive behavioral matters in individual perceptions, interpretations, evaluations and

meta-evaluations by keeping open both the maladaptive and adaptive behavioral activity chains without theorizing individual internal activities.

Through and via dialectical, critical realist philosophical tenets, accomplished revisions of these CBT theoretical models became expanded into metacognitive human matters in which individual, higher mental operations in metabeliefs' realms can concurrently be maladaptive and/or adaptive as Wells' two-stage model (1995) to individual worry has elaborated. Recently, the theoretical approach of clinical CBT practices has evolved into Wells' metacognitive therapy (2007), which seems to have been the practitioner's tacit orientation to a practical integration of sophisticated problem-solving behaviors to smooth mindfulness behaviors via the invigoration of a student's metacognitive management of her social constrained rhythmics. The invigoration was accomplished by the practitioner's inventions and implementations of specific metacognitive, behavior monitoring exercises, such as guiding a student to smooth mindfulness management of her real learning activities, both in her text comprehension as well as in her monitoring of all her behavioral divergent forces in her management of her daily stressful and challenging daily situational and other specific moments (see the general elucidation of the stepwise behavior monitoring exercises in Appendixes IVa and IVb).

The critical realist philosophical position to guiding the students to their behavior monitoring exercises was to support the students' eschewing of actualist psychological theorizing and inductive reasoning behavioral activities. The dialectical critical realist position has philosophically elaborated that anxiety and behavioral problems are caused by empirical and actualist individual discourses, and all social practices, where TINA formations (There Is No Alternative) are addressed and countered via CBT treatment means such as safety-seeking behaviors. If a student is capable of identifying and remodifying her real, learning activity patterns it surely also means changes in her perceptive, interpretative, evaluative and meta-evaluative cognitions as well as in her cognitive structures. The metacognitive, behavior monitoring position is a huge import to contemporary CBT therapies in treatment and prevention of mild anxiety behavioral problems; how to enhance a client's or a student's mindfulness reflection and behavior management of all real contradictory social and all determinate as well as indeterminate forces. This report shows that a metacognitive behavior monitoring position, as a psychological psychoeducational practical approach, is the most optimal because in lay educational practice social discourses can (and very sustained as became established here) in themselves sustain irreal idealist transdictive complexes (in this instance: surface learning, instructional teaching and learning objectives). A dialectical critical realist position explains generally that behavioral deficiencies can be caused by an individual's actualist thinking patterns that occlude her reflection on the underlying social and all generative forces and powers. The CBT conceptualizations provide consistent explanations for this veering to reflection on theoretical issues, as shown in brief specific delineations in the project. The theories mentioned in this report provided the practitioner with a continuous guiding structure for his practical research steps, prior to the theories of self-regulated learning and action, of information processing and action control, and of specific behavioral patterns and models of described psychological mechanisms. If the report issue had been a theoretic one, then it would be suitable here to present novel elaborated models for dee-

pening the understanding of behavioral competencies for the performed software-managed scaffolding.

The more essential theories that provided the practitioner with guiding principles in his setting of the research objectives, devising of practical laboratory programs and in validation of the attained empirical outcomes in each of the four research projects were Wells' (1995) two-stage model of worry, Teasdale's (1999) three modes on mind, Rachman's (1976) initial suggestion of the specific avoidant behaviors, and the redefinition of safety-seeking behaviors by Salkovskis (1991, 1996) and his conceptualizations of the tentative behavioral modalities as a practical model for overcoming dysfunctional and despairing self-reflections. For the introduction of effective scaffolds for student monitoring, Segal et al.'s (2002) Mindfulness-Based Cognitive Therapy (MBCT) was significant, in particular the method of designing monitoring exercises that do not cause excessive stress to the students. In addition, Linehan's (1993) emphasis on psychoeducation encouraged the practitioner into individual psychoeducation and collaboration of a client's real situational behaviors and provided a formula for construction of stepwise learning materials, for example written manuals to behavior training protocols. However, none of the theories referred to above would justify the constructed teaching methods or the definition of the research problem in the realm of a student's learning behaviors in any of the four teaching projects: the theories were in the practitioner's metacritical and meta-evaluative use in his emancipatory approach of performing a lay teaching practice, and in its concurrent research in the constrained teaching and social practices which was deeply committed to sustaining ontological social life and all world matters where argumentations were only secondary and arisen and focused on these ontological things.

2. THE EMERGENCE OF THE FOURTH WAVE IN CBT METACOGNITIVE THERAPIES

This section shows that in large group settings of disparate clients there is no direct path towards low-intensity CBT practices, as is one current trend in CBT practices to preventive mental health care work, see for example Kenwright (2010) on internet-based guided CBT, which does not extend self-monitoring technologies to address a client's contradictory behavioral modalities and behavioral forces at work as was possible here through an integrated session-homework learning template.

2.1 Dialectical critical realist revisions of the teaching practice open rich, collaborative educative means

This section outlines how the four-step scaffolding teaching project in teaching psychology to large groups of students about human nature in their vocational studies opens up totally fresh and promising options to preventive health care work when intensive and specific practical designs for scaffolding a student's daily learning are set up to provide practical educational templates for that work. It is affirmed that preventive health care work requires an intensive and gradually evolving teaching practice that scaffolds the students' daily learning in its lay ordinary courses that are not separate to therapeutic

programs for students' daily learning. At first, in order to address the constrained educational practices, analysis of the teaching practice must be started from scratch in order to invent practical means to challenge the dualist (theory–practice, mind–body, etc.) and highly instructive and non-dialogic communicative discourses in daily vocational education. There is no way from a dualist research position to have deeper psychological explanations of the object phenomena (metacognitive reflective learning) to invent and implement practical laboratory programs that introduce changes because both structured human agency and structured deep social ontological life have been excluded from the beginning by mind–body psychological research positions in order to have a sound position in relation to the polyvalent pre-existing social world and its referential detachment knowing. Many researcher-practitioners favor tailored programs to enhance students' academic and mental performance, as for example Hogwood et al. (2007) summarize in an evaluative research of the targeted interventions.

In this research, a successful separation of practical teaching and its empirical research was attained so that the students understood that their learning outcomes were assessed only by four specific written homeworks. This fact also supported their understanding that behavior monitoring exercises were introduced only for their individual behavioral purposes in order to revise and improve their daily learning activities at their own pace without the practitioner's striving for high, intensive discourse practice. In fact, the third wave in mindfulness CBT therapies (Hayes, 2004a, 2004b), in conducting individually targeted, functional behavioral assessment of clients' problems for inferring adequate explanations of their target behaviors and from the explanations that emerged from the treatment means, became extended into their individual, open, constrained social rhythmics. It was not a loss but rather, with an intensive invigoration of collaborative scaffolds, the scaffolds eschewed linguistic and anthrophic fallacies via behavior modalities-based recording means. The fourth wave in mindfulness CBT therapies emerged as a therapeutic practice by extending metacognitive behavior monitoring via tailored training methods for the assessment of the students' core behavioral competencies and concurrent deficiencies within the pre-existing constrained social life. The metacognitive, behavior monitoring template enabled the practitioner to individually tailor scaffolding of the students' daily learning while students dealt with and managed all kinds of despairs, either related to strong on-task performance or to their veering into detrimental self-reflection and increased emotional despairs. Worth recalling is that this dimensional and primarily on quantity-based approach to individual, anxiety management behavioral constructs has empirical support in contemporary CBT research, see for example Broman-Fulks et al. (2010) and Olantunji et al. (2010), albeit that research positions to contradictory behavior nonlinear and multidimensional forces are not accounted for.

From that attained teaching–learning template in psychology studies and in its initial lay dualist teaching practice there now and then emerges implementations of individually tailored CBT means to scaffold a student's contextual daily learning behaviors. This is not ordinarily the case in contemporary pre-adult and adult educative practices, where dualist discourses dominate lay educational practices and it is not possible to directly introduce CBT-informed means to a student's use in her daily learning. This was also the case here in this research for a large part of the students: only approximately half of the

students in the large groups of about thirty students in the first research project to the fourth research project engaged now and then in intensive exercising and behavioral training protocols. If the training is to strengthen a student's individual, behavioral, uncertainty management competencies (as they emerge in her daily, constrained social rhythmics), then for the students with latent, anxiety management problems the scaffolding means in CBT treatment protocols are necessary to organize rich behavioral exercises and training packages that begin with monitoring of one's daily rhythmic behaviors, and from there evolve and expand to individual choice in practicing specific CBT treatment protocols. Therefore it is not a surprise that this kind of preventive health care work is not generally possible in contemporary educational practices because the gradual progress in scaffolding is not accounted for, as it would be in the social cube approach to social practice. Anyway and before all, when considering the current state of psychological educational research, this four-step empirical research shows that the critical realist position to emancipatory social research is an adequate way to confront and provide practical paths to eschew and enrich students' higher vocational studies in finding means to promote students' well being and innovation.

2.2 Uncertainty and anxiety management competencies enable flexible scaffolding in behavior exercises

In the invented, metacognitive, behavior-monitoring training position to a student's daily learning in her encountering of constrained social rhythmics and all daily rhythmics it is possible to incorporate the students' basic psychology studies about human nature. This position exemplifies the emergence of the fourth wave from the third wave CBT, mindfulness therapies (see Hayes et al., 2004a, 2004b) to preventive mental health work and practice in large teaching groups, where flexible and individually tailored collaborative psychotherapeutic means are richly utilized by clients' and students' in their own choosing of the most optimal exercises. The scaffolding and research setting in behavioral competencies also enables the practitioner's measurement of the workability and feasibility of the performed scaffolds. In behavioral competence realms it becomes possible that both functional and dysfunctional behaviors can be addressed by a student's own scrutiny of her real behaviors and she can see and evaluate her behavioral, ontologically arisen, behavioral regularities in her activity chains and patterns in her search for transition to increased positive behavioral activities in managing her real constraints. This practicing via behavior monitoring exercises is crucial when latent behavioral difficulties and behavioral problems in dealing with one's uncertainties and anxieties as activity chains and multijoined behavioral tendencies to divergent directions-orientated behavioral acts are not deeply guided and smoothly directed by one's metacognitive mindfulness activities.

It was empirically discovered in the first and second research projects that the students' divergence and disparate behavioral activity patterns in dealing with their uncertainties was a real thing that could be accounted for via CBT treatment means. These means would be targeted at students in three subgroups: strong latent metacognitive competencies, behavioral tendency to rumination and worry and other safety-seeking behaviors, and students with non-decisive behavioral activities and stuck with their original pre-adulthood non-responsibility behavioral patterns. Surely this separation of di-

vergent subgroups of students would require a practitioner's strong assessment position via CBT assessment protocols similar to functional behavioral assessment; it was possible to attain this here because a functional and dysfunctional behavioral competency position to assess students' behavioral competencies was achieved in the uncertainty and anxiety management realm. The psychological approach to individual anxiety and uncertainty management competencies required a scaffolding position to a student's real learning where either (1) she can identify and verify her quite advanced reflective competencies, or (2) she can identify some behavioral shortcomings that need some re-evaluation and re-modification, as well as (3) she can identify many mutually conjoined behavioral shortcomings and activity patterns in daily learning which are not manageable through the arisen learning program to behavior monitoring and training, and therefore it is necessary to redirect the novel scaffolds to individual daily learning while engaging in learning traditional learning objectives. It seems plausible that the attained one-dimensional assessment realm with two extreme contradictory positions is enough to differentiate between two, three or even more subgroups of students in the deeper explanatory reframe to anxiety management which guides the construction of, and sets the limits to, scaffolding all students' learning via CBT treatment means that are integrated with the metacognitive, behavior monitoring, software teaching template.

In this scaffolding position to teaching psychology in large student groups it was shown that, through the position to process-product and product-process, quadruple multiprocess social rhythmics, it is possible to introduce the students to daily learning behaviors in a way that even the students who did not find incentives and individual recourses to engage in these individually managed, deep, reflective behavioral activities in metacognitive, behavior monitoring designs can perform their ordinary surface learning in order to pass their traditional psychology course. This strong research position to all individual anxiety and uncertainty behavior in the practitioner's pre- and post-test assessments of the students' behavioral competencies, as well as flexible and tailored introduction and collaboratively executed scaffolding of the behavior-monitoring training means and CBT-treatment protocols that address this individual learning are summarized next.

2.3 Metacognitive behavior monitoring via cbt treatment means address individual avoidant behavioral patterns

An expanded behavior assessment with deeper psychological explanations of this behavior in the social life of education enables the practitioner's importation of tentative CBT-informed behavioral modalities into behavior monitoring exercises in performing practical laboratory programs for preventive health work purposes in the teaching of psychology. This software-managed platform to teaching and learning is not instructive teaching but strongly directed to teacher–student discourses collaboration, therefore it does enable empirical non-theoretic research of the feasibility of the gradual projects in practical scaffolding. If instructive dualist teaching and learning practice dominate in a similar way at the end of the fourth research project as they did at the beginning of the first research project, then it is clear and self-evident that the teaching means to collaborative teaching were inefficient and/or poorly utilized by a large number of the students.

However, as seen from the empirical outcomes from the first to the fourth research projects the students were able to adapt their learning for metacognitive behavioral realms, and this means that instructive dualist practices are not so deeply structured that they could entirely prevent this kind of teaching project to social emancipation.

It is conceivable that students' use of a single learning program, even rich and flexible scaffolds to a student's learning, stays restricted and is not sufficient to increase students' metacognitive learning. Rather, the scaffolding of the students' learning or in CBT-terms invention, employment and implementation of the therapeutic programs, requires the practitioner's smooth and flexible balanced work in the execution of scaffolds, such as supervision and coaching. There is not the space here to delineate the performance of the scaffolding in the real teaching practice, however some general features are elucidated in Section 3, but the general rule was that it was right not to engage in intensive and strong supervision of each student's real behavioral patterns before the student had a preliminary hint of the purpose of each exercise's protocols and had shown some progress in performance of the exercises. Therefore, before engaging in strong individual supervision and coaching of a student, the stress was laid on smooth and intensive psychoeducation that introduced behavior monitoring exercises in one's identifying and evaluations of individual anxiety and uncertainty psychological matters.

In the third and fourth research projects, the gradually intensifying package of the metacognitive behavior monitoring to a student's recording exercises seemed to be grounded and ethically sound and possible to be propagated to other educational spheres if many crucial guidelines of this research project become accounted for. Without turning to linguistic fallacy of (a form of the analysis of being as our discourse about being; Bhaskar, 1993, p. 206) modality-based behavioral monitoring this is a sound practical position to educative discourses, which are not necessarily addressed by psychotherapeutic discourses. The problem in validating a client's flawed and ontologically true appraisals and conceptions regarding her real behaviors and their determinants is an obstacle, but through the software template the students can have true divergent options for their interpretations and evaluations of their ontological world matters that are not often possible in emotionally laden, consultative client discourses. The constructed, behavior monitoring methodology is quite challenging for a student because it requires individually taken and chosen evaluation of how to see recent behaviors through one's internal imaginative behavior modality lenses. It is quite conceivable that students experience difficulties in behavior monitoring, which are not only focused on recording symptomatic or specific features in behavior.

It is argued here that focused or limited monitoring of symptomatic behavior, which occurs easily in superficial, instructive teaching discourses, is not sufficiently grounded for its application to teaching vocational psychology. The main tool of psychotherapists in enhancement of the validation, acceptance and commitment in a client's behavior is frequently performed by their self-reflection but not by their metacognitive reflection on all relevant opposite internal forces. It was feasible here to apply pie-chart technologies in behavior monitoring and recording exercises and they supported a student's seeing her behavior as a metacognitive mindfulness issue. Evaluation of opposite relations as behavioral forces also provided individual behavioral objectives and practical means for the

practitioner's collaborative supervision of a student's performance of behavior exercises; such an option is not manageable in instructive, consultative teacher–student discourses. Of course, if this program had more educational recourses available during the execution of the psychology teaching program, then the practitioner would have been able to implement behavior training protocols similar to CBT client practices to the students' exercising of their behaviors in a more dualist realm. For example, clients under stress and in their tacit tendency to avoid any anxiety peaks and despairing thoughts would greatly benefit from CBT recording exercises to improve their differentiation of contextually arisen negatively and/or positively ascribed anxiety peaks. In my clinical psychotherapeutic practice I have found these behavior monitoring protocols feasible in supporting a client's identification of their persistent engagement with task-performance activities that are an essential part to their commitment to, and acceptance of, their constrained living conditions and educational obstacles, as well a client's shedding of her ruminating and other safety-seeking behavioral activities.

The students' tacit and partial, safety-seeking behavioral patterns, such as avoiding internal and or external stimuli, which tacitly trigger strong emotional meanings, is a loose theoretic conceptualization but it could have its real strength in behavior monitoring exercises. In sustaining the mindfulness idea to broad individual reflection there is no grounded reason that supports the evaluation of this symptomatic behavior alone in enhancing students' metacognitive problem solving and the development of their general behavioral competencies. It was elucidated in each of the four separate research projects that to instruct a client to monitor just pre-theorized or other behavioral fragments would merely reinforce instructive teaching in these practices and thus occlude the practitioner's collaboration, CBT-informed behavior assessment, as well as extra scaffolding of a student's daily learning of psychology (e.g. psychoeducation, practitioner's acute overview of a student's home learning and virtualia supervision of a student's learning behavior).

With these novel and feasible options in higher vocational teaching of introductory psychology, the adequate approach is the general, and not theoretical but behavior assessment-inferred scaffolding for individual recording of all divergent and opposing behavioral modalities and safety-seeking behavioral patterns. Although the safety-seeking conception proves its effectiveness in a student's appraised orientation to her practical validation of avoidant, contextual behavioral patterns, it is relevant to address the notion of dispositional realism as the core human concern. For the emancipatory approach, which must be distinguished logically from theory- and method-driven practical attempts of nurturing specific skills of the students, a contextual, human behavioral template is required for an adult student's study. The psychological skills' perspective alone is inadequate: it restricts the practical programming of internal changes in an individual's thoughts and attitudes, and it does not enhance and encourage the embodiment of the students' behavioral dispositions as divergent core competencies.

In the fourth wave in CBT mindfulness therapies the gradual perfecting of the practical programming in treatment methods to address a student's tacit worry and rumination was crucial, and it got its strength in individually tailored programming through the critical realist approach to all dual and non-dual behavioral ways to individually maintain the basic ontological dilemma of subject and object dualist world. It maintained a

strong individual position towards a student's living conditions as a real state of the ontological world, as well as the epistemic and ontological differentiation in an individual's reflections, and an initial view of open social and other ontological matters as really existing (whether it is known by the individual or not). It was possible to introduce practical experiments and exercises of the feasible scaffolds into a student's behavioral experimenting. Although such an experiment is the template of one's behavioral scrutinizing in the open, transformative, social, material and subjective life, it signifies the fourth wave in mindfulness therapies, which expands a student's focus on the changes in social life from constraints to freedoms.

The applied mindfulness stance to human mind was not conceived as an entity of specific monadies, but as one comprising divergent behavioral modalities, specifically as dialectical critical realist philosophy attempts to maintain, of the conjoined and multilayered contradictory forces. Among the diverse and mutually exclusive mindfulness approaches (see Baer, 2003; Hayes, 2004; Lau et al., 2006; O'Donohue et al., 2003; Sternberg, 2000), O'Donohue et al.'s and Baer's positions are undoubtedly based on functional behavior analysis-induced assessment of clients' target behaviors and of flexible client-selected initiatives for behavior monitoring exercises. Because the students' target behaviors were the objectives of the laboratory programming they were defined differently in three subgroups, so that collaborative supervision through the software template provided a way to target the teacher's guidance and support differently in the subgroups. However, this practical program of the performed collaborative supervision is not the objective of detailed description and evaluation in this report. It is worth stressing that the supervision remained limited and poorly focused due to the students' insufficient completion of the behavior monitoring exercises. One subgroup of the students with passive daily living and active (social) support seeking were especially problematic and the identification of these students was viable only gradually during the course's progress.

2.4 Optimal scaffolds to a student's reflective learning

The lack of space here does not allow a detailed discussion of the established and empirically verified scaffolds, therefore, only the most crucial ones are listed. First, the scaffolding is a balanced work and an application of rich teaching methods that permits collaboration and coaching as a template for a student's learning activities.

At first, the earlier steps in CBT and mindfulness therapies consist in the application of behavior therapy via direct behavior assessment reinforcements; secondly, an initiation of a client's new behavior and obstruction of her dysfunctional patterns via CBT treatment means; thirdly, an expansion of the reinforcement approach to mind and all behaviors through CBT techniques and manipulation of its divergent forces that maintain dysfunctional behaviors, and then flexible assessment and rich and intensive use of tailored CBT treatment methods that have become feasible in mindfulness acceptance and commitment practices and in collaborative discourses in treating a client with severe clinical problems.

The fourth wave in CBT mindfulness therapies emerges directly from the earlier CBT waves and it employs implemented scaffolds for a student's learning and daily living in

large student groups if a scientist-practitioner's practice to collaborative teaching and its concurrent research work becomes possible, and if a revision of deep philosophical tenets towards non-dual practice are manageable in real constrained practice:

1. A sound, reflective practitioner's stance to emancipatory social practice and experimental research work in the social educational life, full and constrained pre-existing forces to be specifically addressed. In a polyvalent world, full of forces and everlasting change, generative social and psychological mechanisms need to be accounted for in the social cube reframe and specifically in the domain of a student's real, daily learning behaviors. In social health care studies it is urgent to enhance a student's exclusive and divergent behavioral competencies in the search for professional trustworthy client discourses.
2. The behavior monitoring approach evolves out of mindfulness and the dialectical critical realist approach to individual daily rhythmics or of world lines, and from enrichment and deepening of the constructivist approach to the tentatively and conceptualized and empirically researched behavior modalities. Throughout this report this practical program was empirically verified and justified as a crucial and comprehensive template to a student's metacognitively managed daily learning in meeting both the divergent students' inherent capabilities in learning, and in supporting their incentives to improve their metacognitive problem-solving behaviors.
3. Synchronic Emergent Powers Materialism (SEPM) and dispositional realism (behavioral tendencies as inherent competencies) were maintained. In addition, the behavior assessment and behavior monitoring methodologies, as CBT-informed and magnified towards encompassing metacognitive modalities, are to be targeted at an individual's contextual behaviors. It means taking an innovative and re-evaluative stance towards one's uncertainty behavioral issues in rich, flexible and individually chosen, behavior monitoring methodologies. The sophisticated CBT-enriched and required treatment techniques (and in treatment of latent anxiety problems) become feasible in the stepwise issue-driven research and via the teacher-practitioner's virtualia template recording of the students' real learning.
4. Through the practitioner's increase of a student's collaborative supervision of daily learning and all activities via software technology and via behavior monitoring exercises and tools for interactive teaching, the performed psychoeducation plays a crucial but latent role in inviting the students to take a direct stance towards their behaviors rather than to theoretical and abstract vocational nursing issues. By the same token, the instructive teaching and scaffolding of surface-learning educational practices would decrease in the core vocational studies.
5. Social, ontological, transformative life is the research objective and it aims at immediate but lasting changes (positive in the free flourishing sense) in an educational life full of stable oppressive forces in an individual's exploration and scrutiny of behavioral options to abolish coercive forces through one's own daily learning activities.
6. The deployment of a psychological 'laboratory' (the laboratory is the real social life, open to the scientist-practitioner's direct observation) research as it

emerges in the scientist-practitioner's practical work and research of the feasibility of implemented and performed teaching practice, where the practitioner-researcher is responsible for and works under the social transformative and coercive social mechanisms.

3. FEATURING THE IMPLEMENTATION OF SCAFFOLDED PSYCHOLOGY TEACHING AND STUDENTS' DAILY LEARNING

In this summary there is not much room to describe and explicate how the accomplishment of the scaffolding by gradually increased collaborative trustworthy means in coaching, supervision and so on was performed as an individually tailored teaching practice in psychology studies. Only specific outlines are presented to underscore the creative practitioner's individually tailored position, where the deep philosophical turning point was the practitioner's attempts to guide the students to metacognitively managed learning in their eschewing of lapses into flawed abstract theorizations. In these outlines, in which the practitioner partially traverses the practical ventures to scaffolding such as psychoeducation in real teaching practice and partially describes their use from a student's daily learning perspectives, it becomes underscored how behavior monitoring means in CBT scaffolds directly address a strong, collaborative communicative template in teacher–student discourses. Now and then, the critical realist work approach to daily teaching practice really brings back to the heart of individual daily learning the issue of one's contextual learning in all individuals' discursive behavioral activities.

3.1 The integrated practice to scaffolding psychology teaching and its concurrent research

A student's functional and dysfunctional behavioral competencies coexist and emerge in her daily management of her daily world lines and the practitioner's psychological-sociological perspective is of the holistic causalities of the transformative educational life. Therefore the scaffolding of this social learning practice via modality-based, metacognitive, behavior monitoring means provides natural and direct means and templates to a student's exercising of her recent and future-orientated behaviors without any need for the practitioner's general theoretic pre-formulations of the problem area. Therefore, all arbitrary theorizing and the application of the specific psychological concepts and theoretical categorizations, including conceptualization of empirical results as abstract generalizations into other social contexts regarding presupposed psychological mechanisms in human mind, are not the main issues. On the contrary, that kind of potential discussion, even as conceptually and epistemologically and internally consistent, would exclude the core of ontological and, most crucially, social things and matters as the coercing and enabling realm to the emergence of an individual's behaviors and of her existence (as argued in the first sections of this report). The behavior monitoring approach was the pivotal means in teaching to bring the external social world as an individual's emergence

of her true being, and the dualist psychological perspective becomes eschewed as an irreal base which gives rise to individual and social suffering.

The mindfulness psychological perspective, as the starting point of a student's behavioral assessment and as a template for her monitoring exercises, also comprises metacritical thinking; these competencies need to be included in an outline of an individual's retroductive and retrodictive scrutinizing activities in one's exercising of behavioral monitoring methodologies. Human reflectivity emerges, or becomes obstructed, in the ontologically differentiated and dualistic polyvalent world. In there an individual might or might not occasionally access her real ontological mediated things in her referential detaching activities. This is the scientist-practitioner's initial understanding and position in practical teaching that is affirmed as sound in dialectical critical realism. Traditional mind–body psychologies have already shown in many conceptualizations how limited self-reflection can be dysfunctional, and its direct instructional empowerment does not support a client to get rid of her emotional problems because it does not directly propagate her reflection and intentional actions in managing all real external and largely social matters.

The students' metacritical and critical generalizations regarding their contextual behaviors, such as their metabeliefs and maladaptive schemata, need to be identified by the students and be addressed via the practitioner's coaching, supervision and all scaffolding enterprises in order to gradually consolidate towards trustworthy argumentation in teacher–student discourses, if possible. That ethical psychological research position towards strict and increased trustworthy teacher–student collaboration eschews superficial instructive means that in contemporary psychological research become affirmed as somewhat efficient as well as inefficient and even malicious to some students. This stance to teacher–student discourses has no ideological origin either in the practitioner's assessments or in the import of specific empirical educational and therapeutic programs. In the four separate projects the implemented programs to real teaching practice are simultaneously the empirical research's objective of discovering the adequacy of the teaching and learning scaffolds.

Via the dialectical, critical realist, underlaboring philosophical means to revisions and refinements of a practitioner's practical teaching ventures the CBT understanding and conceptualization of human (learning) behavior remains flexible and rich so that a practitioner's tacit flawed recourse into injudicious empiricism, theory-driven research and general rigid methodological solutions is avoided. An individual's behavior entails both dysfunctional and functional behavioral activities; a practitioner's understanding launches the scientist-practitioner's strong practical position on a real path towards the comprehension of learning and teaching, which is focused directly on the issues of behavioral competencies and their deficiencies, as dispositions and behavioral tendencies, not only and primarily as forms and fixed abilities. In the psychology course, where human behavior is the core issue, the position enables direct pre-test and post-test measurements of the researched metacognitive behavioral competencies, in addition to design and implementation of practical programs for their enhancement. The practitioner-teacher's main initial endeavor was to perform practical work based on his observation; accordingly, a sound practical approach via specific CBT tools was used to assess the students'

learning and introduction of specific treatment methods to the students' behavior monitoring exercises.

Of course, all specific partial research steps in each research project and in the entire research project need to be delineated in more detail. A fragmented evaluation of specific research solutions would not discern the reliability and validity of the practical research as totally transparent; on the contrary, it would only conceal the general ethical position and a great number of the practical research steps and rich teaching ventures in teaching via concurrent management of the scaffolding of the students' learning. The observation and assessment of the students' behavior and definition of their target behaviors require to be addressed in this empirical practical scaffolding program. The workability of the program in a student's learning, and its feasibility in a student's basic behavioral and self-regulated learning competencies, also needs to be addressed.

The essential practical step to additional scaffolding for students learning psychology – a successful application of CBT questionnaires – was a demanding task that required an integration and utilization of both contemporary, educational psychological research and cognitive behavioral psychotherapeutic research. Nevertheless, it successfully validated the practitioner's functional behavioral analysis of the students' learning behaviors as an expanded behavior assessment of this specific ontologically pre-existing, social educational life. The latter point should be continuously borne in mind by the reader: the fact that this ontological social realm is a pre-existing social structure in its transformative forms and mediations that must be assessed and directly ontologically seen together with the students' internal behavioral forces that, with their dialectical and causally efficacious forces, maintain the dominant surface teaching and learning social practices. The scientist-practitioner's general knowledge of a student's mainly latent anxiety-related behavioral problems was a crucial factor in the design of the scaffolding means: it defines a student's target behaviors for the introduction of the rich and gradually proceeding behavior monitoring package and its incorporation into a student's individual daily learning. The practitioner observed and analyzed continuously, and what is crucial in order to have sound grounds to practical scaffolding, he metacritically evaluated potential social changes of the educational organization. This practitioner's reasoning supported the validation of the specific research outcomes, such as to why the students' self-regulated, reflective learning behavior was generally insubstantial or nonexistent, even at the end of the program. The evaluation encouraged the practitioner to invent new tools to enhance the students' basic behavioral competencies and to abolish their behavioral deficiencies. In addition, and apart and even contrary to the explanation of the students' behaviors arising from the deep, constrained, social transformative life, the practitioner's evaluation enabled derivation of practical programs for bringing out positive changes in the students' behaviors. The practitioner's a priori reasoning of the transformative educational social practice in nursing, such as how strong the social forces that sustained dominant instructive dualist teaching were, enabled the introduction of optimal behavior monitoring exercises and CBT treatment means into the students' learning of psychology.

3.2 The depiction of crucial practical frameworks in rich and multilayered scaffolding

This section recapitulates the main practical frameworks to performing emancipatory-orientated research into psychology teaching practice. The research issue is not which psychological theory is essential as an abstract generalization to the problem area, or which group of actual mechanisms as presupposed, psychological theoretic laws are true, or which scaffolds to teaching or learning would become affirmed as sound, but the empirical examination of the practitioner's reflections about the adequacy of the performed scaffolding. There is no need to specifically reiterate and evaluate the main empirical research procedures and empirical outcomes because they have been presented and evaluated in the four research projects in this report. The report needs to be read from the initial critical realist perspectives to solutions.

Without dwelling on specific practical descriptions and depictions of the many collaborative means in this teaching, such as CBT-informed psychoeducation to behavior monitoring, software-managed supervision of the students' recent learning, or without outlining the practitioner's tailored, creative working practice in the real practice, there is still a need for a lengthy discussion that outlines the main research ventures in each of the four research projects. It is unavoidable because this issue-driven research emerges from a dialectical, critical realist, research position to social research and more specifically to staying within a social cube reframe to the transformative educational practice. To grasp the real executed scaffolding the reader needs to first evaluate this critical realist research position before dwelling on the means, derivation and implementation of the practitioner's scaffolding procedures otherwise these could become muddled with rigid methods. It must be kept in mind that by attuning the scaffolding ventures to a student's individual learning, all the scaffolds, such as coaching, written psychoeducation in learning materials and their guides; real-time feedback to, and supervision of, a student's recent learning, are the practitioner's creative discourses. Therefore, there is no need here to elucidate the collaborative teaching procedures in supervision, in feedback or any other collaborative means.

Instead, the focus here is on the evaluation of the appropriate steps in scaffolding the students' learning, the invention and importation or design of deeper psychological explanations, as well as tailored implementations that empirically ensure that these counterfactual surface-oriented practices would not increase negative side effects that would annul the slight positive revitalization in the students' reflective mindfulness learning.

3.3 The dialecticization of individual being

All scaffolding endeavors are based on the practitioner's reflective position to real constrained social life and not on specific formal protocols. Therefore, there is no way to generally depict or ground a practitioner's universal position because emancipatory work is not based on ideologist utopias that abolish human discursive intellect but on concrete utopias that are individually reflected by the interlocutors and participators in this teaching practice. In this four-step empirical research there were dangers that the educational social life would abolish this emancipatory-oriented teaching practice completely by coercing it to traditional instructive teaching and general surface learning. But in each of

the four steps the dangers were slightly avoided. For example, one turning point in the first project was to find out if there would be an option to introduce metacognitive, behavior-monitoring recording means at all, and in the second research project the practitioner's challenge was to implement assessment means that would find optimal psychological explanations of the students' divergent, daily learning behaviors from a social ontology perspective. In the third project, the practitioner's pivotal challenge was to invent and implement workable, CBT-treatment, behavior training means to enhance the students' behavioral functional competencies and their shedding of safety-seeking dysfunctional behavioral activities and activity patterns. In the fourth project, another major challenge that the practitioner faced was whether, without sabotaging the students' daily learning, there were practical workable options to more confrontational trustworthy teacher–student discourses by introducing confrontational treatment means to the students' daily learning.

There is not the space here to dwell on how individual reflection becomes deepened in this research project; as is possible in the expansion of critical realist philosophical tenets and notions in negation and absence by the dialecticization of critical realism where true authentic being and non-dual reflection without dualisms between thoughts and overt actions has its place. The philosophical position is directly committed to having individual knowledge of, and an intentional action on, real world things without recourse to nomological concepts and theories at first. Broadening individual reflection from self-reflection and emotional and inductive reasoning to knowing of social and all generative mechanisms and even causal relations is still a crucial philosophical dilemma. In philosophical terms, dialecticized critical realist philosophy has shown how concrete singularity and concrete universality, individual being and knowing is a real thing.

CBT conceptualizations and empirical psychological research have shown that an individual's behavioral problems and weakened reflective learning are exemplified as an individual's decreased concreteness (Stöber, 1998). Flawed generalizations have been elucidated as an individual's conceptual thinking where one's imaginary thinking has decreased (for example Teasdale, 1999; Wells, 1995; Stöber & Borkowec, 2002). In philosophical terms these individual forces come into existence from her social constrained rhythmics. It is possible to see her safety-seeking and other activities as her negating and absenting activities from ontological object matters such as coercing or enabling social constraints. Addressing a student's behavior monitoring from a dialectical critical realist position to deep social ontology is the practical approach to strengthening her imaginary thinking in all her negation reflecting activities; similar to the way that metacognitive and CBT mindfulness therapies have delineated the treatment of clients with anxiety problems such as rumination and worry (see for example, Borkovec et al., 2004; Wells 2000, 2009; Hayes, 2004b). Because the practitioner had an adequate position to a structured human agency with contradictory forces, it is possible in real, educational therapeutic practice, through behavior-monitoring training means, that an individual who is managing her internal and often contradictory forces can be introduced to behavior scrutiny and, if feasible, then she can shed her contextually arisen, safety-seeking behavioral activities

In this report there is no space to delineate in more detail in what specific ways behavior modality-based, metacognitively scrutinized, behavior monitoring means are sound

to introduce to a student's invigoration of her reflective daily learning. In this research the invented behavior monitoring recording and CBT treatment means incorporated to the recording means and introduced to a student's individual learning are entirely new and they have their philosophical bases, where an individual in her reflection of her daily rhythmics becomes aware and takes strict responsibility for all the divergent features and characters of her daily behaviors. The individual being searches for lawful regularities in her behavioral patterns in her real social living contexts and focuses her search on what are her real internal and external constraints and options to her true being and actions. This reopening of reflective human agency with metacognitive and metacognitively managed forces and individual capacities introduces many new enriching ideas to contemporary psychology on human problem solving and well being. The objective here was, through stepwise emancipatory-oriented psychological research into the teaching practice of psychology, to find behavior monitoring means suitable for all the students' using exercises and training tailored individually for their divergent behavioral competencies.

3.4 The practitioner's work position to open, constrained educational life

In this research the practitioner is committed to a transcendental, realist, stepwise empirical approach in the open, social educational life to find and devise adequate and theoretically sound (psychologically explainable) practical means to scaffold the teaching practice and the students' contextual learning. The open social life is multilayered and mediated where a student's individual daily learning behaviors in all their dysfunctional and functional forms and viable relations are one realm in the practitioner's reflection on all the relations of the open social cube of education. From that practitioner's position to his social educational practice it is ethically sound to strive for social changes by an individual's own choosing and actions for individual and social freedoms. The practitioner's reflection on the mediations and regularities of holistic social causalities of the educational practice (social cube) is a real thing in many ontological multilayered matters. More specifically, his reflection on the absented/absenting differentiations and diffractions of things, and on contradictory processes along the lines of 1M, 2E as well as in having broad reflection and intentional agency in 3L and 4D on the educational life is the starting point to his practical endeavors. These reflections are not based on, or initiated by, theoretic deductions but are of, and on, real ontological polyvalent things beyond sensate experiences.

In order to have practically workable options to scaffolding students' daily learning and scaffolding of teaching, the scaffolding position requires two mutually conjoined research ventures. On the one hand, there is the need for the practitioner's reflection for psychological explanations of the students' behaviors (at least at subgroup levels) in order to define the students' target behaviors because they are the objectives for the practitioner's laboratory programming. In the second research project, explanations were attained in forms of the students' disparate anxiety-management competencies, and that behavior realm to anxiety management was needed in order to have a structured notion to human agency with contradictory internal forces. On the other hand, the practitioner's reflection in dialectical-transcendental argumentations, if some constructions to scaffolding of the students' real, daily learning behaviors by means of empirical pre-test/post-test

outcomes were to be workable and feasible to fostering the students' metacognitive and mindfulness learning.

The learning templates for a student's learning at home and in the classroom remained separate and the learning domains of both, which were under her own reasoned management, remained untouched and became resurrected by the strict software or other educational, instructional, superficial normative guides which restricted her learning in closed and deterministically conceived work practices. That poor state in the students' reflective mindfulness learning was confirmed in the first and second projects in this research, and the situation in their behavioral competencies did not improve significantly in spite of the highly grounded scaffolds in the third and fourth research projects.

The highly grounded and efficiently implemented scaffolds to teaching psychology for enhancing the students' self-regulated or deep learning remained poorly applied by a large part of the students with deficient reflective competencies to deep learning and intensive daily management. Even the students with strong competencies to intensive intentional learning did not engage in all pivotal sophisticated and incrementally increased, deep learning activities. It became affirmed that the students' theoretical and metacritically informed conception to individual creative learning was impaired. There is no way to non-dual reflective learning when learning emerges as fixed identities and single individual and formal differentiations, such as perspectival switches being exemplified philosophically in ontological modes 1M and 2E. There the open, social transformative life in its mediated vital rhythmics (3L ontological realm) becomes abandoned by the individual actor, and where an individual's intentional (learning) behaviors (4D ontological realm) become abolished and unaddressed by the learner's intentional reflections and other behavioral activities.

3.5 Cbt-behavior assessment guides to the integration of cbt treatment means to scaffold students' daily learning

In this summary there is no space to elaborate the second, third and fourth projects' gradual evolution of the CBT-informed assessment into an expanded behavior assessment. The assessment evolved in the open, social cube life as it became deployed, devised and implemented in this teaching practice as an expanded, functional behavioral assessment of the student's daily behaviors. This assessment position provided the practitioner with rich data of each student's omissions of specific homework studying and classroom learning activities. The dialectical, critical realist, philosophical position lays sound grounds for functional behavioral assessment and expands the assessment to open, social rhythmic life that is not reflected by individual perspectives and interpretations, but is reflected in referentially detached dialectical and transcendental arguments on the open social cube.

The practitioner's general conceptual reframe was to see a student's rich daily activities as her negating, that is absenting behavioral acts and activities, at least at the level of an individual's conjoined, specific activity chains in managing with individual daily projects. It became clear that some students did not have the energy and behavioral means to manage their constrained educational life intentionally and therefore they were forced to surface learning and safety-seeking behaviors that often contaminated and even totally impaired their daily learning behaviors.

At the beginning of each teaching program, the practitioner's behavioral assessment, through his observation, was quite sketchy with its initial focus on evaluation of whether the students' daily learning behaviors were similar to the previous teaching projects so that no sudden abrupt, specific, compulsory, safety-seeking behavioral patterns emerged to disturb the students' smooth and dynamic execution of the teaching program.

3.6 Metacognitive, behavior-monitoring cbt exercises as crucial to collaborative teaching of psychology

After the previous elucidations of a practitioner's behavior assessment position into scaffolding of a student's daily learning it will now be shown how metacognitive, behavior-monitoring, practical training means incorporated to a student's daily learning of psychology were discovered and inferred without relying on dualist methodological or theoretic positions. In the first research project the practitioner relied on dialectical critical realist conceptions to epistemological and ontological behavioral realms. In philosophical terms, his keen search for seeing all empirical, actual and real behavioral domains to understanding and explanations of how an individual's smooth behavior monitoring in her social behaviors remains as broken and a hazard to one's contextual behavioral determinants. At first, in order to find a sound conceptualizing perspective and approach to the students' broken behavior monitoring the CBT perspectives were the most adequate where uncertainty issues in all maladaptive and adaptive behavioral forms are core behavioral matters. In these conceptual reframes to individual human behaviors, and its management, all dualist and non-dual positions become taken into account and integrated because the practitioner's observational basis to individual human behaviors is the approach in his assessments of a client's behaviors.

A non-dual position is needed in order to assess all of an individual's maladaptive and adaptive behaviors. That position to maladaptive and adaptive behaviors is not possible if a psychological approach to individual behavioral competencies is not used.

In dialectical critical realist philosophy, the practitioner's behavior assessment of a student's and the students' behaviors becomes possible as a sound approach where the practitioner in his transcendental-dialectical arguments and reasoning via an empirical route can explain the students' daily (learning) behaviors in deeper psychological terms and conceptualizations (here uncertainty and anxiety management). In fact, the original reflective-practitioner's (elucidated by Schön, 1983) or the scientist-practitioner's (its being only a rough idealistic sketch without real essence in contemporary psychology) approach to multilayered social life was not given but became attained in the stepwise research by the practitioner's sticking with dialectical critical realist tenets (such as referential detachment and transcendental arguments) in the third research project. There the practitioner's aim was not only to focus on deploying teaching means and methods, but also to have changes in the students' behaviors and, by that line, to have changes in social constrained practice in abolishment of bad constraints occluding the students' deep reflective learning.

The non-dual position calls for the practitioner's reflecting of the social cube and his elaborations for having sound bases to his practical programming of his teaching and of the students' learning. The practitioner intervened to deepen the psychological approach

to individual behavioral competences in individual management of daily rhythmics and he introduced four tentative behavioral modalities to a student's monitoring of her contradictory behavioral forces at work behind those behaviors. Thus the practitioner's invention continued with the broadened, metacognitive, behavior-monitoring exercising and training means which as a sound practical position had explicit grounds in individual management of subject–object, ontological dualist world matters where an individual being has its emergence in all ontological modes 1M, 2E, 3L, and 4D, as they emerge in all modes of individual learning. Worth noting is that the dialectical critical realist approach and elucidation to individual learning is broad, for example, in 2E mode individual learning is of normative knowledge about constant conjunctions without one's seeing if the real object becomes covered or not in that individual knowing. From that dialectical critical realist position to perform teaching and psychotherapeutic practice also emerged sound means to integrate CBT treatment means used in generalized, anxiety behavioral problems when at first finding reasons that this explanatory realm was the most feasible one.

3.7 The practitioner's non-dual scaffolding of the teaching practice

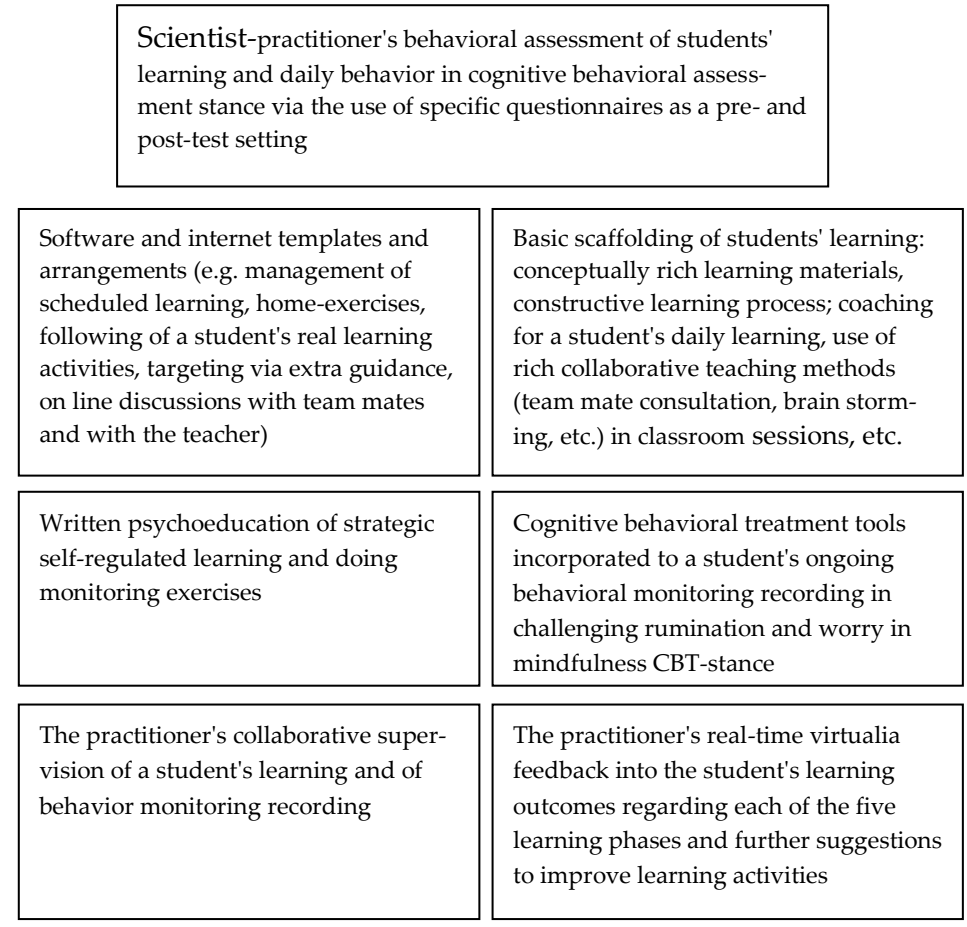
This report is a deep elucidation of the gradually evolved practitioner's and, in the third and fourth research projects, a scientist-practitioner's work position. It is directly based on the practitioner's options to non-dual reasoning of the work matters as became possible by taking social life as an ontologically pre-existing template to his work being depicted in dialectical critical realist philosophy and in its elucidation to emancipatory-oriented social research. This practitioner's work position does not arise in explicit terms in dualist, empiricist research logics and its psychological research endeavors at all.

At first, the dialectical critical realist tenets that underpinned the philosophical tools and guides to the search for emancipatory-orientated teaching, and for deepening the practitioner's collaborative orientation and work in the deeply instructive teaching practice and its educational structures, are briefly enumerated. It is shown how the teaching gradually evolved into initiation of a student's metacognitive behavioral competencies in the open social life, which is not possible to take as a teaching objective and template at all in dualist research positions. By the practitioner's transcendental arguments an emancipatory teaching practice emerges to open tensed social life in all four ontological dialectical modes 1M, 2E, 3L, 4D and for the practitioner's transdisciplinary real practice 5A. The practitioner focuses on a student's individually and contextually (or de-contextually) managed daily rhythmics and modality-based approach to human behaviors by means of metacognitive, behavior monitoring exercises. They become accomplished by the practitioner's reflective, creative, counterfactual argumentations in finding and creating collaborative means to scaffolding the students' learning, more specifically through CBT-informed psychoeducation, classroom coaching, and a student's virtualia (-software) supervision of her home-exercising in metacognitive behavior training means.

That discussion and theoretic depiction of the constructed and practical, basic teaching scaffolds in rich learning materials, in homework behavior monitoring exercises, classroom coaching, real-time feedback and supervision of the students' daily learning are not the main issue; it is presented in Figure 1. Instead, the main issue is at first to

elucidate that this non-dual teaching practice is possible and grounded and it maintains, and even gives rise to, all the students' divergent learning competencies in pace with their performed, daily learning behaviors. Therefore, the scaffolds to the teaching of psychology and to the students' learning are not theoretically deduced and grounded teaching means. Through having rich data of the students' individual, daily learning behaviors and their pitfalls (both being absences and even their absenting real activities) the practitioner in his transcendental counterfactual arguments tries to support the students' adequate identification, ascription and re-modification of their recording and training and of their learning activities. All along in his teaching practice to performing and executing the scaffolds in lay teaching practice the practitioner works through his behavioral assessment of the students' daily learning behaviors, and searches for a student's attainment of her novel behavioral experimenting and other re-modification learning activities.

Figure 1. The attained and verified optimal scaffolding of key elements in enhancement of the nursing student's self-regulated and metacognitive learning in psychology studies



Bhaskar's (1993) elaboration of individual daily rhythmics and of their individual daily management in all multijoined problem-solving activities and activity chains becomes the assessment objective, where the practitioner by his counterfactual encouraging arguments pinpoints some optional strategies and ways to a student's engaging in behavioral experimenting, and behavioral training and other learning activities.

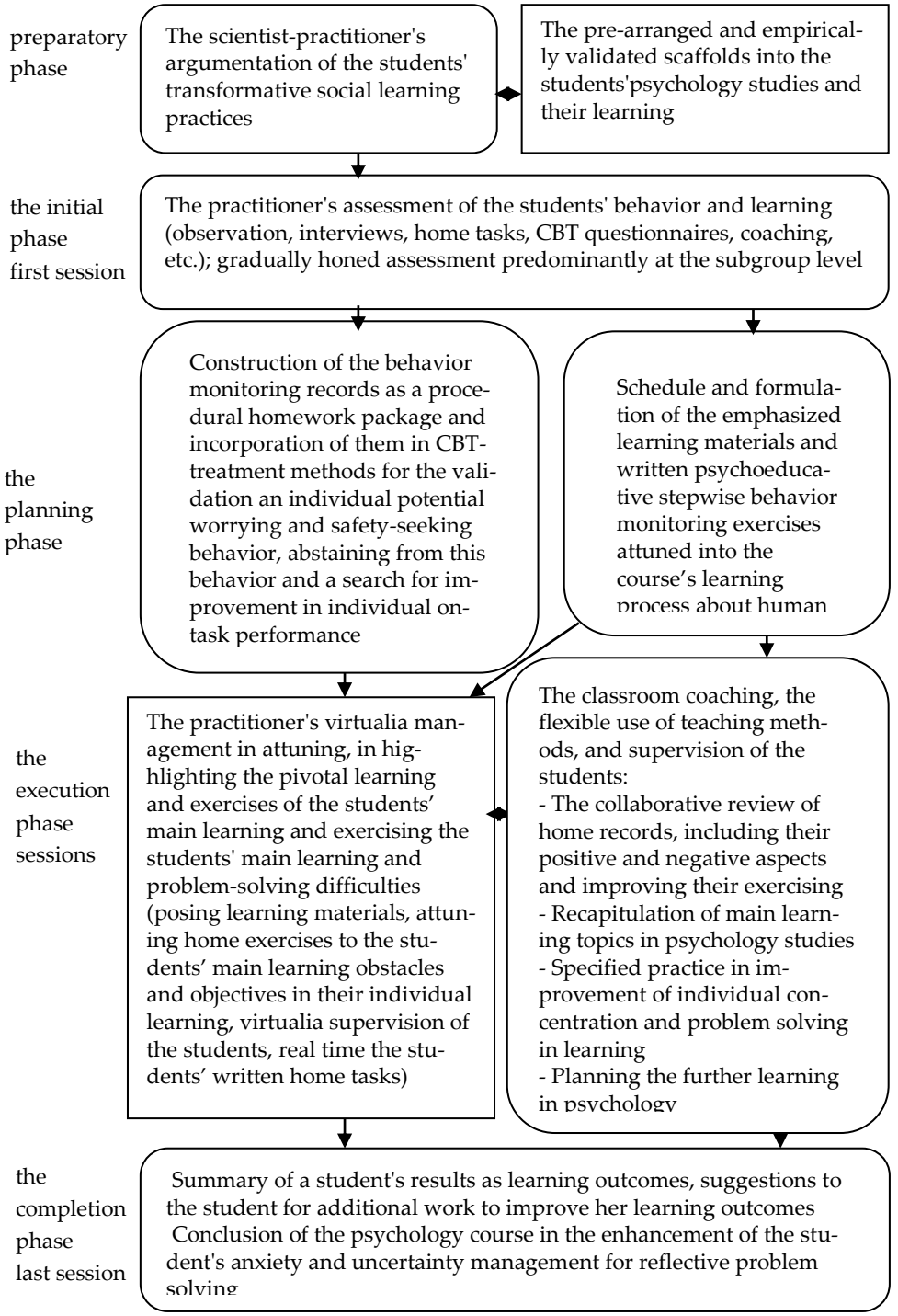
In this transformative social life and daily rhythmics' educational approach to teaching students, and especially to focusing on a student's daily learning, the practitioner is well aware of the nature and shortcomings in a student's real learning behaviors by the behavior-training recorded exercises which are not possible to have in language-based, client psychotherapeutic discourses. The practitioner thus really understands within the transformative transforming practice or social cube position what a student's pivotal learning activities are and what are their shortcomings and failures in their performance of the behavior training protocols in the search for a self-trustworthy position. From his reflected position to the real forces and determinants of, and behind, a student's behaviors the practitioner, by motivational interviewing and by collaboratively managed requesting of the purpose of the real nature of her very recent behaviors, has options to guide the student to accept and commit to her functional albeit aroused anxiety feelings comprising behaviors, and to encourage her to engage in new behavioral experimenting and in re-modifying her behaviors into functional one(s). This practitioner's creative psychotherapeutic work in the execution of the scaffolds is not the reporting objective in this report.

3.8 Scaffolding of students' learning of psychology through behavior monitoring means

This section summarizes how metacognitive, modality-based, behavior-monitoring recording designs open up the rich and individually chosen exercises in CBT treatment protocols by software-managed psychoeducational introduction to the students' daily learning of psychology. Figure 2 outlines how the written psychoeducation of the students' performance of their psychology studies and especially of their embarking on metacognitive behavior monitoring and training protocols is the dominant deep underlying current of the teaching–learning practice whereas the other was by the invented scaffolds to do basic teaching of vocational psychology. The latter realm and objective to the teaching practice does not belong to the reporting themes.

In his reflecting of a student's behaviors in her daily rhythmics by rich data acquirement via his observation and all other imported scaffolds to a student's learning the practitioner has access to a student's real all divergent behavioral activities and activity patterns, not only to her specific formal and normative learning activity patterns on formal learning tasks in the classroom, but also to a student's daily learning and before all, to a student's omissions or restrictions on her real, recent learning activities. That non-dual practitioner's position directly opens up an intensive and creative implementation and execution of the learning scaffolds, where all scaffolds are managed largely as tailored to each student's real behaviors in collaborative lay discourses. Therefore there is no way to depict the creativity of the teaching endeavors without lapsing into a dualist methodological position in theoretic elaborations of the real performance in collaborative scaffolding

Figure 2. The constructed psychoeducative model: the basic elements in investigating the transformation from instructive teaching to the collaborative supervision of the students' real learning behavior



were many and became accomplished in mutually reinforcing teaching ventures where instructional teaching discourse had its specific role to guide the students' superficial learning for achieving their minimal educational objectives. Primarily they were: literary software-managed psychoeducation on behavior training protocols, classroom coaching means. These collaborative teaching means in scaffolding the students' daily learning to a student's planning and engaging on some pivotal learning activities, software-managed supervision of a student's recent and future-orientated learning behaviors, the practitioner's software-managed, real-time feedback of a student's evaluation of her real learning outcomes in the deepened and metacritically refined learning outcomes (identification of forms such as concepts, taking distance by one's divergent activities, reflecting on the open totality perspective of all conceptual issues in seeing and interpreting of polyvalent ontological world matters, embarking on specific and persistent operational activity chains to gain a deepened understanding of real life matters).

Only some recapitulations of some pivotal practical ventures in these collaborative means are enumerated here without elucidation of how the basic scaffolds to teaching were preliminary executed and how they paved the way to collaborative teaching. Needless to repeat specifically but it is crucial is to note that the students performed behavior monitoring exercises either intensively, only rarely and occasionally or did not perform the exercises at all. It demonstrates that the written psychoeducational guides to engage individually chosen, behavior training protocols were adequate at least for the students' with more learning skills in deep learning, such as text comprehension. The written psychoeducational guides to do learning on vocational psychological matters, and concurrently in that learning to perform metacognitive, behavior monitoring exercises, required a student's motivation to improve her deep learning skills and to engage in behavioral training that were also the learning objectives in the psychology course. Therefore behavior-monitoring training means and psychological learning issues were strongly interwoven with each other which somewhat supported a student's learning of psychology as well as her practicing on behavior training.

Literary psychoeducation in a student's embarkation on metacognitive behavior monitoring and exercising protocols as her essential part to homework in software-managed learning materials were performed similar to CBT-psychotherapeutic client practices as they were accomplished, for example in dialectical therapy (Linehan, 1993) and in conventional CBT-client practices, to motivate a client to focus on her real contextually arisen recent behaviors to search the adequacy of her internal and external behavioral activities, and to engage in specific training and behavioral re-modifying protocols to shed her dysfunctional behavioral activities.

The practitioner's real-time feedback on the adequacy and outcomes of a student's recent learning activities in relation to individual's learning goals and suggestions to other possible learning activities to a student's recent learning became executed during the course's deepening process, from orientations to deepening and evaluation of the conceptual issues in real life, and lastly, to embarking on specific, real, daily behavioral exercises on deepening of one's understanding of human, contextual behavioral matters. As was discovered in the four research projects the students had difficulties in seeing the practition-

er's feedback as constructive suggestions via coaching means to go on or even, if found urgent by a student, to improve and intensify her specific learning activities.

The practitioner's coaching of a student's and the students' daily learning was an essential and primary objective to improve classroom teaching to collaboration. The practitioner's assertively executed teaching discourse sought empirical verification and identification and re-modification of individual recent learning behavioral patterns, such as safety-seeking behaviors and on-task performance behaviors of a student or the students' in given subgroups. The tailored means as a collaboratively managed, confrontational teaching discourse aims to challenge a student's recent contextually managed, daily learning behaviors and when the student by experiencing self-esteem problems and other emotional difficulties has not been accustomed to that teaching discourse, her emotional loads can increase which could give rise to her safety-seeking behavioral activities. As seen in all the four teaching projects, classroom coaching of a student's recent learning became only partially executed because some students often concentrated on their attending to, and pinpointing of, specific conceptual and general explanatory models to manage daily vocational issues. However, the practitioner's coaching was practically manageable at least covertly for an alleviation of the dualist, teacher–student instructive discourses. By having strong support of the consolidated teaching template in learning materials, and in the three-step constructive teaching and learning software-managed template to self-regulative or self-directed learning, the practitioner quite successfully declined from emotionally driven and inductively conducted teaching discourses only to affirm and conform to a student's expression, but to revising and exemplifying a student's expressions to a student's individual, behavioral management issues along the lines of CBT client discourses.

The practitioner's supervision of a student's daily, rhythmically managed learning through software-managed, metacognitive, behavior monitoring and training protocols was possible to perform in a relatively similar way to contemporary CBT client practices. The practitioner, by his following of a student's daily behavioral problems and via evolved behavior-monitoring software recordings, was able to see her beliefs, attitudes and behavioral orientations and ascriptions in his evaluation of her recent learning behaviors. Now and then, and at least with the students who used the exercises more frequently, the practitioner was able to see and to guide by software-managed supervising software feedback how an individual student managed her recent daily behavioral tasks and projects, from which behavioral projects she tacitly or even compulsively abstained that might have been more feasible to take on gradually intensifying confrontational activities. But due to dominant, dualist, instructive, untrustworthy teacher–student discourses the practitioner's supervision of the students' daily learning behaviors was not the practitioner's primary objective when the primary objective was to have an intensified foothold on psychoeducation and coaching. It was argued that the increased intentional exercising in behavior monitoring means via psychoeducation and coaching would pave the way to the practitioner's intensive collaborative supervision.

The software-virtualia, teaching–learning framework is a flexible practical template as seen from the fourth research project's picture to the entire scaffolds on page 342-343 above and in Appendix V; it enables the multilayered scaffolding of the teaching of psy-

chology as well as of a student's individual learning presented in Appendix V. The implementation of the software-based scaffolding in all teaching activities in the realm of self-regulated behavior is similar to Quintana et al.'s (2005) general theoretical outline. In devising software-managed learning templates to individual metacognitive learning and its monitoring this execution goes beyond theory-driven scaffolds such as Woodward's (1998) self-regulated learning which also was Zimmerman and Tsikalas's (2005) approach to a computer-based, monitoring instructive program to three cyclic self-regulated learning (forethought phase, performance phase, self-reflection phase). In this project, by providing a rationale for these exercises, selection methods for specific stepwise technologies in exercising and guiding a student in her evaluation of the workability of her home practice about its negative and positive aspects, and her progress in individual ongoing monitoring exercises, the exercising platform is not an instructional rationale or a formal practice. This collaborative stance has already become delineated, for example by Whitfield and Williams (2004) and Whitfield et al. (2006) in their overviews of the CBT-informed collaboration with a client by software technologies. The collaborative approach to guidance in re-validation and revision of a student's evaluations and behaviors corrects itself, and according to Kirschner et al. (2006), this activity is the crucial requirement for self-regulated learning. Both home monitoring exercises as managed and supervised through the virtualia-software template and classroom coaching and practice, served as the template for the practitioner's real-time feedback on a student's real learning behavior, not as a single instructive method, but as rich perspectives and methods. It is the objective of the gradual behavior monitoring protocols to maintain an issue-driven strategy, advocated by Mooney et al. (2005). In the main template, in problem-solving studies in human behavior or in knowledge of human nature, it was feasible to maintain the CBT-informed behavior assessment approach by the employment of CBT treatment protocols and to incorporate them into a student's daily learning of human nature.

The software teaching and learning template. The flexible structure of the implemented CBT treatment and training protocols in the invented behavior monitoring and software recording template was presented to the students' learning objectives together with all learning objectives in their learning of vocational psychology. Many behavior training protocols were directly integrated to the learning issues of the course, and some protocols were specific behavioral exercises to identify and re-modify one's individual learning activities in real, daily learning contexts. The importations of CBT treatment and training protocols were managed by the practitioner's on-going management of the teaching practice via a software template and its specific sections, such as:

- the practitioner's scheduling and setting timetables to classroom sessions and presentation of the learning issues in each classroom setting, as well as the obligatory four written homeworks for evaluation of the students' learning outcomes and the practitioner's real-time feedback to a student's homework;

- little by little presented learning materials into the psychology course, from orientation to practicing and to application of the psychological conceptualized reframes in developmental individual behavioral and vocational learning matters;

- metacognitive behavior monitoring and training protocols in individual daily learning tasks via the use of CBT treatment means in managing individual rumination and worry (see Appendixes IVa and IVb);

- a student's software-managed presentations of her individual practicing in behavior monitoring and training protocols as well as the practitioner's options to suggested supervising comments perhaps being in need to be accounted for in going on with her behavior training protocols in her managing with her ruminative, all other safety-seeking and on-task performance behaviors in her daily learning activities;

- a section for practitioner's news for the students on actual and urgent practical, as well as on general, crucial issues in doing individual studying and learning in the psychology course;

- a column for classmate and teacher–student discussions, dialogs, suggestions and advice related to one's individual learning issues with classmates and/or with the practitioner.

It is noteworthy to see how without theoretic derivations the pivotal introduction of behavior-monitoring training protocols directly became introduced to individual daily contextual learning via a software-managed framework to teaching and learning. For a student it provided means to strong and individually managed integration of distant and home studies for a student's classroom learning. In other contemporary, international research reports into the use of software technologies in psychology studies this kind of an integrated and collaboratively managed use of software means does not emerge, which is conceivable and logical when the open transformative social life becomes excluded as the template of a student's learning of psychology. It seems that modality-based introduction of behavior monitoring means is the needed piece to take full advantage of software technologies in improving education in pre-adult and adult studies.

3.9 Incorporation of cbt scaffolding means in behavior-monitoring training protocols

In the critical realist position to human behaviors and its contextual management the crucial issue is how an individual encounters and reflects on her ontological external and internal things where her self-reflections are at work at least as her experiential thinking, as individual negating absenting activities. Her monitoring of her contextual behaviors is the template for an individual's reflecting of her continuous behaviors in her daily rhythmics. Here, in delineating the general logic to introduce the students to their stepwise, intensifying behavior training protocols, the issue is not a philosophical one but an issue in psychology to human behaviors, as to how to start from one's daily behavior monitoring and its recording and training via specific CBT-informed exercises, monitoring of one's daily activity patterns and activity chains. From that activity scheduling, practical perspective an individual can see and appraise her daily loads tackled with her activities, specific contextual moments and situations of her general behavioral patterns and orientations, without dwelling on self-reflection of her emotional or other situational matters as forms without mediations of the many behavioral determinants.

Traditional, CBT clinical practices begin with guiding a client to record and follow her specific problematic, difficult behavioral situations where her symptomatic behaviors

emerge. It was not adequate here because of the students' vast discrepancy in their behavioral competencies. It gradually became clear from the preliminary investigations and from the first research project that the students' metacognitive mindfulness competencies are largely different: some students reflect spontaneously on their behaviors in all past, present and future world lines compared to other students who reflect on their momentary behavioral sensate and emotional matters. Therefore in order not to lapse only into self-reflection of forms and identities, or into reflecting on one's differentiating processes needing their blocking via engaging on other self-reflective activities in a student's search for her behavioral regularities and underlying generative social-psychological-material forces, it is sound to start from the activity scheduling and behavior monitoring by recording from one's daily rhythmics. To these training exercises, modality perspectives provide contradictory behavioral monitoring criteria. In this research of one's identification of one's on-task performance and safety-seeking behaviors as mutually related a student might be aware of the nature of her recent behaviors for her daily living and have, via virtualia-software introduced behavioral means, to (1) encourage a student to perform daily monitoring diaries, (2) proceed to validate her real learning behaviors in each contextual learning task and (3) retarget this monitoring towards an individual's confrontation of her potential procrastinating behaviors and safety-seeking and other problematic situational moments by tailored monitoring and behavior exercising tasks. Some students might directly utilize the monitoring protocols to expand their behavioral activities as well as focusing on taking new behavioral means to their shedding of their avoidant behaviors in their daily contexts and situations by specific CBT treatment protocols in the next exercises.

In this critical realist position it is clear that an individual's management of her daily rhythmics is the basic behavioral issue that partially determines an individual's choices to allocate her mental capacities and activities to many behavioral issues and tasks and projects at the same time.

3.10 The targeting of metacognitive, behavior training means to disparate students in three subgroups

In the fourth research project the research's main objective towards the students' metacognitive learning and problem solving remained uncompleted, and it was only the starting point towards addressing and re-challenging the students' daily learning behaviors via more tailored, CBT treatment means in three specific subgroups of the students. Here the assessment, as an expanded functional behavioral assessment, was accurate enough for tailoring the intensive, collaborative teaching means in coaching, psychoeducation, supervision, and so on in the three separate subgroups, but the urgent problem was to promote the reflective capacities in the students with moderate and deficient on-task performance-management activities. To that purpose, there was a need to deepen the expanded functional behavioral assessment which more adequately addressed a student's individual safety-seeking behavioral patterns where the general CBT-informed perspective to defining her behavioral problems in rumination and worrying is too diffuse and where treatment means to direct confrontation of avoidant behavioral patterns remain rather unfocused. However, if were possible in the program, albeit it's turning

out to be highly grounded and sufficient in gradually evolving individual training protocols, to execute via more officially accepted, collaborative teaching protocols in all the students' supervision of their metacognitive behavior training protocols it arguably would be more hugely efficient than it was in this project. However, improvement of it would be impossible in this social practice while there are no administratively laid goals to improve education in this deep beyond postmodern, dualist philosophies, crystallized, individual, reflective, human problem behavioral realms to nursing vocation.

Although in this research in all the four projects the students tacitly often consciously embarked on their mutually reinforcing safety-seeking behavioral activities, these students had continuous difficulties in directing their attention to the many and more urgent environmental stimuli and learning issues, and they even continuously had strong and long breaks in their conscious sense-making of the practitioner's lecturing and instructions in classroom teaching. This kind of rather compulsive safety-seeking behaviors of turning to internal emotional stimuli is a common behavioral problem and it is exemplified as thought suppression (see for example Wentzlaff & Wegner, 2000). The scaffolding program in this research was rather weak to the practitioner's addressing and confronting of these individual behavioral deficits, as is also the case in CBT client practices; thought suppression can totally divert clients to having psychotherapeutic advice and support for their abstaining from compulsive thought patterns. In this scaffolding program there were metacognitive, behavioral-monitoring recording means towards a student's exercising of her thought suppressive strategies which intruded into her daily learning when doing text comprehension, but these exercises were only seldom utilized even by the more competent students. This real search showed that the students could divert their behaviors from learning issues and matters in classroom teaching to more increasing and intensifying degrees. These behavioral patterns can be more detrimental to a student's learning than her absence from classroom learning because she could strengthen her dysfunctional and maladaptive ascriptions to the learning issues to more negative, discouraging and punishing ones.

APPENDIX I. THE RATIONALE FOR BEHAVIOR MONITORING RECORDING IN THE FIRST RESEARCH PROJECT

Monitoring your daily contextual behavior

Description of main measurement tools on behavior monitoring (main excerpt of many measurement tools):

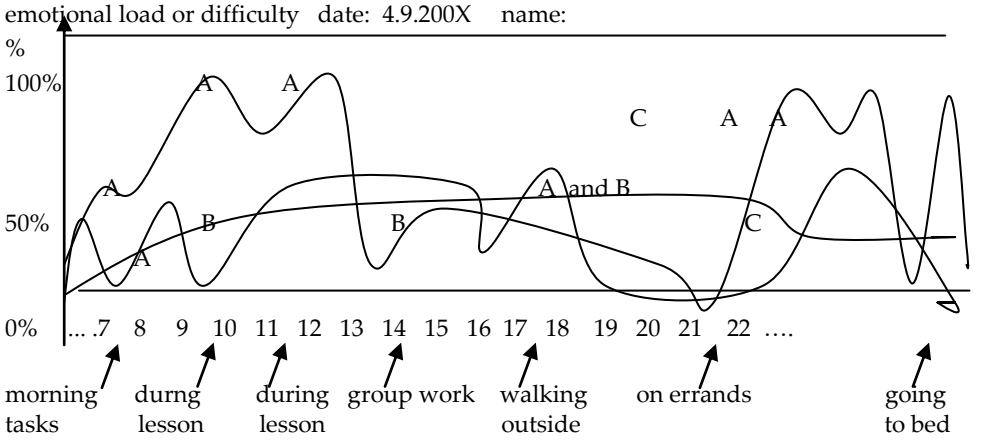
Task 1) Diary exercise for homework: recording emotional load and negative emotions

You might face difficulties in recording your daily tasks, or a part of it, or on a certain day. The way is graphically illustrated below. You might find the following example too rigid and not suitable for you; in this case, you can use, for example, the curriculum form and mark there the time and the date that you performed the specific activities you mentioned.

The example below suggests that you focus on a certain emotional load and on daily variation whether you regard it as positive or negative. This emotional load in your given daily activities could be, for example: (A) worrying and worries; (B) high anxieties and despairs; and (C) depressive thoughts, feeling low, bad mood, interruptions to your self-awareness such as experiencing extreme emotions or no emotions. You can register them by using lines or other marks to point the time and context of the action, where you recognize changes in your daily life and these emotional loads.

Below is presented some examples of this behavior monitoring and its recording techniques, of course you will use your own ways to see and record your given day's sequential progress, do not directly follow any of these three recording techniques, it is suggested that you will only do one sketch of your present day's loads and their variations.

Example:
the level of your
emotional load or difficulty date: 4.9.200X name:

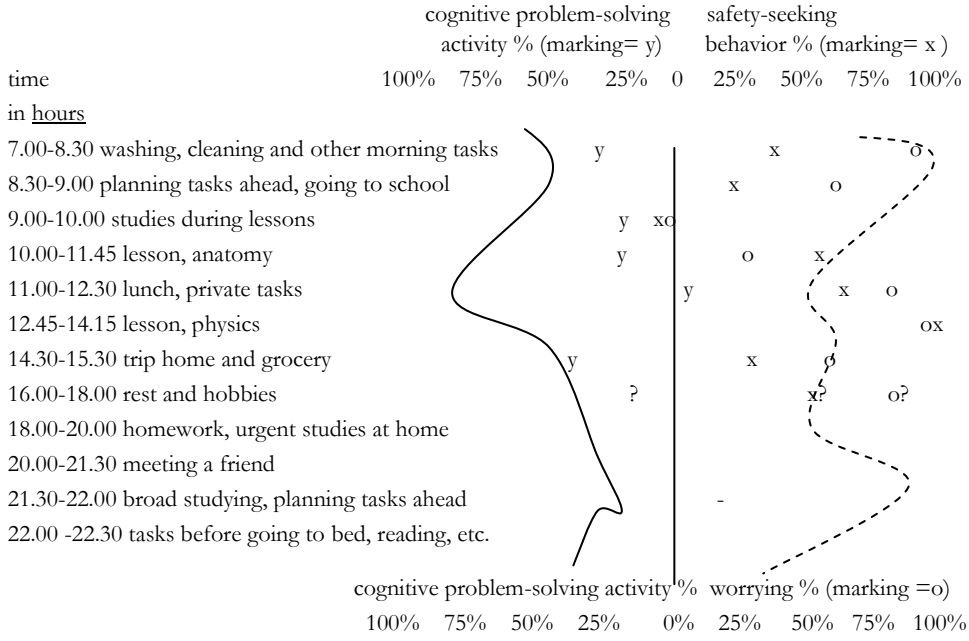


Task 2) Your attributions in a selected situational and behavioral context, and its moments in your increased loads, when you noted them in your graph above:

Select one part of your load and activity curve or of your day's situation, which you'll find interesting to concentrate on as a problematic or challenging daily situation. That situation or moment in your curve is when you have often confronted a sudden load increase and experienced difficulties in performing your daily routines. Elaborate in some sentences below, how you saw and evaluated this challenge and your corresponding behavioral activities in this daily situation.

APPENDIX II. THE MAJOR RATIONALES TO BEHAVIOR MONITORING RECORDING AND EXERCISING IN THE THIRD AND FOURTH RESEARCH PROJECTS

Appendix IIa. Recording exercise on mindlessness and mindfulness problem-solving activities in daily living and learning (presented as an example of instructions for performing this monitoring at home) (two examples, one with lines the other by using special marks)



Appendix IIb. Monitoring mutually contradictory learning activities in reading psychological texts and evaluating learning

Using the strategy of behavioral monitoring introduced earlier, monitor various behavioral modes in contextual reading activity, for example (look at your own presentations):

name: date

time	the nature of the learning activity	problem solving percentage			safety-seeking percentage		
		100%	50%	0%	50%	100%
Mon 17.15–17.40	glimpsing at theme 6		o		+/ -	
Tue10.45–11.40	detailed reading in main topics in theme 6	o+		x		
Wed 20.00–20.45	reading theme 7 while watching TV		o		x	
Wed 22.15 –22.35	thinking about the internal coherence between the issues of 6 and 7		o	*	+ x	
Thur 13.00–13.30	mental exercises and applications in real life		o		- x	

Markings:

o =problem solving x = safety-seeking behavior

+= positive anxiety in mental planning - = negative worry and rumination

* = the strength of text comprehension in reading

Register your learning outcomes in the specific learning themes by using a pie-chart method.

Using the pie chart you are forced to take a more accurate approach to your learning outcomes and their effectiveness, below please add the specific outcome – you should have 100 percent outcomes in total outcomes

Possible learning outcome	theme 6	theme 7
1. I was not able to tackle the issue at all in my mind	_____	_____
2. I identified some concepts and viewpoints	_____	_____
3. I confronted some ambiguities while trying to formulate an idea about inconsistencies in learning issues in sorting out these inconsistencies	_____	_____
4. I faced and intuited obstacles in my problem-solving behavior, in seeking to look at it from the nursing or other contextual and specific perspective	_____	_____
5. I began to develop and apply these views and conceptualizations to my lay communication and client practices	_____	_____
Total Percentage	100 %	100%

Appendix IIc. Registering cognitive re-structuring and its interruptions in reading learning materials

You might spontaneously, and without knowing, control or manage your emotionally laden thoughts in certain patterns. You might attempt to suppress them – try not to think threatening and other sudden thoughts – or you might try to use distraction, for example think of other things, or daydream. Or you might try to concentrate on your commitments and more earnestly on your thought contents, accepting the fact that anxiety-related feelings and arousals are a normal part of your deep learning process and of your real things in your life.

The following exercise is targeted at strengthening your spontaneous awareness of many divergent thinking activities; they do not directly improve your text comprehension skills or increase your learning outcomes with regard to this psychological course's outcomes. Remember that when you gradually start to use this technique more often, you can become more aware of your thoughts, and you might more spontaneously accept your problems in text comprehension and understand that normally text comprehension is a disrupted thinking process in itself. So gradually you can abolish your extra worries in these difficulties of understanding, you might also become more competent in rapidly refocusing your diverging attentions and thoughts to a learning task when you see it as necessary.

So, when reading the learning materials as the tasks for the next sessions, try to record the flow of your thoughts. During recording of your cognitive restructuring (e.g. your interests, your own opinions, and their occurring remodeling), please take notice of the instances when your thoughts were suppressed and you were not able to follow your reading. Also, please record when you decide it is positive to divert your thoughts and evaluations to the learning task and content again. If your learning activities are shorter than fifteen minutes, then it might not be possible or beneficial for you to record them by using the following model as an example, and so you may chose your own marking. Elaborate them, if they are different from the example below. Now and then, you will, of course, take breaks and have disruptions in your cognitive restructuring: it is an essential part of innovative learning and taking notice of it belongs to the learning itself.

Example (you concurrently record through your real learning activities)

learning issue and the nature of your learning activities	time	recording your learning activities
having a glimpse at the topic 6	2.10. time 8.45-9.00	too short time for recording it
concentrating on the main issues in topic 6	2.10. time 17.30-18.00	start + + / - - - - + - + / end
some of my re-evaluations of the issues in topic 6	.10. time 8.00-8.45	start +/ + / + / - - - - + / - - -- - - + / end
construing my initial ideas and their literary formulations about the purpose of this learning topic 6	3.10. kl. 12.15-12.40	start +/ /+---+/+---/+/-/+/--/ end
general look at topic 7	3.10.12.40-13.10	start / + / +/ +/ - - - - / end
etc.		

Description of my markings:

/ = noticing the break in your restructuring process

- = lapsing into worrying thoughts, managing your despairing moods, your safety-seeking behaviors

+ = succeeding in returning to your cognitive restructuring activities in the learning issue at hand

( ) = blank, not possible to record, no disruptions in your thoughts, or no successful evaluations whether your learning activity was safety-seeking behavior or cognitive restructuring

APPENDIX III. THE STUDENTS' END-STATE DIVERGENCE IN CORE BEHAVIORAL COMPETENCIES DURING THE FOURTH RESEARCH PROJECT

Appendix IIIa. Group D1 (N=30): Varimax solution (rotated)

	Factor 1	Factor 2	Factor 3	Communalities
BDImean		0,46	0,19	-0,45	0,450
ACQemotcont		-0,05	0,24	0,78	0,672
ACQthreatcont		-0,32	0,19	0,78	0,745
ACQstresscont		-0,46	0,38	0,52	0,633
ACQtotal		-0,28	0,31	0,97	1,102
IUS(uncertainty)		0,51	0,37	-0,33	0,510
deepmotstyle		-0,01	0,88	0,21	0,822
deepstratstyle		-0,08	0,89	0,20	0,834
deeptotalstyle		-0,05	1,01	0,20	1,059
surmotstyle		0,82	-0,04	-0,16	0,701
surstratstyle		0,79	-0,14	-0,21	0,695
surftotalstyle		1,05	-0,12	-0,14	1,136
eigen values		5,40	2,74	1,21	
variance explained by factors		57,7	87,7	100,0	
percent of total variance explained		45,0	67,8	78,0	

Factor 1 = latent worrying and surface learning
Factor 2 = deep learning and strong orientation to improvement in self-management
Factor 3 = strong latent competencies, leaning on their original schematic bases and diffuse learning

Appendix IIIb. Group D2 (N=27): Varimax solution (rotated)

	Factor1	Factor 2	Factor 3	Communalities
RRSdepress	0,05	0,82	-0,26	0,744
RRSworry	0,03	0,70	0,05	0,491
RRSreflect	0,07	0,82	0,11	0,687
ACQtotal	-0,15	-0,04	0,99	0,997
IUS (uncertainty)	0,98	0,08	-0,17	1,003
deeptotalstyle	0,45	0,01	0,89	1,002
surftotalstyle	0,92	0,06	0,38	0,998
eigen values	2,50	1,99	1,43	
variance explained by factors	42,2	75,9	100,0	
percent of total variance explained	35,7	64,2	84,6	

Factor 1 = despaired mood and surface learning
Factor 2 = active worrying, diffuse learning
Factor 3 = reflective learning and problem solving

Appendix IIIc. Group D3 (N=19): Varimax solution (rotated)

	Factor 1	Factor 2	Factor 3	Communalities
reappraisalTCQ		0,23	0,96	-0,32	1,082
worryTCQ		0,66	-0,10	-0,28	0,526
socsupportTCQ		0,10	0,02	0,83	0,697
ritualTCQ		0,66	0,14	-0,24	0,511
punishTCQ		0,23	0,15	-0,48	0,302
distractTCQ		0,84	0,20	0,08	0,756
ACQtotal		-0,73	0,06	0,24	0,598
deeplearn totT-S		-0,30	0,47	0,34	0,429
surflearn totT-S		0,62	-0,07	0,13	0,412
eigenvalues		2,97	1,28	1,07	
variance explained by factors		55,8	79,8	100,0	
percent of total variance explained		33,3	47,1	59,0	

Factor 1 = avoidance and worry
Factor 2 = challenging thought patterns, vigilant control in learning
Factor 3 = social support and seeking orientation to deep learning

APPENDIX IVa. THE BEHAVIOR MONITORING AND EXERCISE PACKAGE IN THE THIRD RESEARCH PROJECT

Phase of the course	Learning issue and learning materials	Behavior monitoring as a recording technique	The nature of the teacher's coaching and supervision, primarily in virtualia and, secondly, in the lesson
Phase 1: Psychological orientation, knowledge and understanding of human behavior	Subjective understanding of knowledge of individual and general problem-solving behavior	1. Records: daily self-monitoring by recording behavioral divergent modes (the intensity of contextual on-task performance in relation to the safety-seeking behaviors) 2.Records: recording and challenging negative and intrusive automatic thoughts	Review of each student's records and help to the students in appreciating difficulties in describing and explaining human behavior
Phase 2: Psychological recourses in problem solving behavior	Rich conceptualizations of psychological, theoretical key factors in human behavior: "arousal"/"cognitions"/ "motivations" /"control"/"personality"	3.–5. Records: recording the completed learning activities in divergent and competing behavioral modes 4.-5. Records: recording learning activities in specified behavioral modes and in relation to assessed and achieved learning outcomes as pie charts	Suggestions and comments on honesty, individual real safety-seeking and acceptance of positive worries, the need for a positive attitude to individual utilization of these records
Phase 3: Application of the gained psychological knowledge to a student's problem-solving behavior on a daily basis	Psychoeducative learning materials as discussion and specific monitoring strategies in identification and challenging of individual behavioral obstacles in self-monitoring daily behavior; abolition of dysfunctional safety seeking and the need for acceptance	6. Records: re-identifying, re-validating and re-modifying individual daily behavioral shortcomings in divergent behavioral modes (on-task performance and its relation to and the nature of individual safety seeking) by applying introduced monitoring exercises in individual daily living and learning.	Encouraging students to accept and to evaluate opposite approaches to self-monitoring and reflective problem-solving behaviors
Phase 4: Orientations to human development and maintaining its idiographic approach	Learning issues of many diverging (modern-post modern constructivist) developmental psychologies and conceptualization of individual development in daily behavior and life	7., 8., 9. Records: evaluation development, text comprehension during reading of the instructed learning materials at home; evaluation of learning outcomes; the application of other options for records in evaluation of problematic learning and other daily problems	Teacher's suggestions and feedback towards understanding the application of the instructed and selected techniques and improvement of accuracy in their utilization

Phase 5: Application of the acquired psychological and developmental psychological knowledge on the enhancement of human development in selected contexts	Learning of the therapeutic tools, specific professional practices in individual understanding and supporting individual development, problems and their management in real life	10.–13. Records: subjectively selected records as the attempts to redirect them for improvement of individual cognitive restructurings during studies and in idiographic developmental (also professional) issues in selected developmental and behavioral contexts and conditions	Cautious and individually tailored supervision both in validating individual real learning behavior and real learning outcomes based on the idea of constructivist psychologies and critical realist psychologies/Innovative teacher–student discourses, if feasible

APPENDIX IVb. THE BEHAVIOR MONITORING AND EXERCISE PACKAGE IN THE FOURTH RESEARCH PROJECT

Phase of the course	Learning issue and learning materials	Behavior monitoring as recording technique	The nature of the practitioner's coaching and supervision, primarily in virtualia and, secondly, in the lesson
Phase 1: Psychological orientation, knowledge and understanding of human behavior	Subjective understanding of knowledge of individual and general problem-solving behavior	1. Records: daily self-monitoring by recording behavioral divergent modes (the intensity of contextual on-task performance in relation to the safety-seeking behaviors) 2. Records: recording and challenging negative and intrusive automatic thoughts	Review of each student's records and help to the students in appreciating difficulties in describing and explaining human behavior
Phase 2: Psychological recourses in problem-solving behavior	Rich conceptualizations of psychological, theoretical key factors in human behavior: "arousal" /"cognitions"/ "motivations" / "control"/ "personality"	3. –5. Records: recording the completed learning activities in divergent and competing behavioral modes 4.-5. Records: recording learning activities in specified behavioral modes and in relation to assessed and achieved learning outcomes as pie charts	Suggestions and comments on honesty, individual real safety-seeking and acceptance of positive worries, the need for a positive attitude to individual utilization of these records
3. Phase 3: Application of the gained psychological knowledge to a student's problem-solving behavior on a daily basis	Psychoeducative learning materials as discussion and specific monitoring strategies in identification and challenging of individual behavioral obstacles in self-monitoring daily behavior; abolition of dysfunctional safety seeking and the need for acceptance	6. Records: re-confronting worrying and safety-seeking behaviors with the help of learning behavioral experiments and standard exposure procedures and trying to use them in re-evaluating individual problematic (despaired, etc.) living and learning situations	Encouraging students to accept and to evaluate opposite approaches to self-monitoring and reflective problem-solving behaviors
4. Orientations to human development and maintaining its idiographic approach	Learning issues of many diverging (modern-post modern-constructivist) developmental psychologies and conceptualization of individual development in daily behavior and life	7., 8., 9. Records: evaluation of development, text comprehension and individual flow of thoughts during reading the instructed learning materials at home; evaluation of learning outcomes; the application of other op-	Teacher's suggestions and feedback towards understanding the application of the instructed and selected techniques and improvement of accuracy in their

		tions for records in evaluation of problematic learning and other daily problems	utilization
5. Construing psychological and developmental psychological practical stance on the enhancement of human development in chosen contexts	Learning of the therapeutic tools, specific professional practices in individual understanding and supporting individual development, problems and their management in real life	10.–13. Records: subjectively selected records as the attempts to redirect them for improvement of individual cognitive restructurings during studies and in idiographic developmental (also professional) issues in selected developmental and behavioral contexts and conditions	Caution and individually tailored supervision both in validating individual real learning behavior and real learning outcomes based on the idea of the constructivist psychologies and critical realist psychologies / Innovative teacher–student discourses, if feasible

Appendix V. The multilayered structure of psychology course

Psychology study module → Developmental psychology study module

Phase 1 →	Phase 2 →	Phase 3 →	Phase 4 →	Phase 5
Phase 1: Orientation to daily behavior management; knowledge of individual daily reflections of perceptions, interpretations, thoughts, evaluations about human nature and behavior; Experienced stress impacts on individual acquisition of information, as on individual daily behavior monitoring and on individual client communication ----- **Learning materials** for daily behavior management and it's acquisition of information (e.g. management of daily stress load via behavior scheduling, behavior monitoring and its recording methods, automatic thoughts, cognitive restructuring, exposure methods, behavioral experiments), themes 1-5 ----- **Monitoring exercises** by psychoeducation: monitoring daily load and daily management, via stepwise recordings and continuous practice -----	**Phase 2: Human resources, their identification and validation in individual daily contextual learning and being;** self-regulated learning competencies and their training in academic studies and deep learning; text comprehension, strategic learning, etc. Uncertainty and anxiety management via recording techniques (on-task performance problem solving and assessment of the functionality of individual real behavior, safety seeking, worrying, rumination, mindfulness ------ **Learning materials:** key factors as nodal points in self-regulated and in all daily behavior (arousal, cognitions, motivations, behavior regulation, personality), themes 6-12 ----- **Monitoring exercises** by robust psychoeducation: monitoring and appraising of behavior load and its outcomes (as for example the vitality of cognitive restructuring) via recording of these psychology studies ----	**Phase 3: Training concentration by acceptance and commitment recording techniques** in the nodal difficulties in individual daily monitoring and daily activities and learning of practice and deepening and applying of the acquired psychology knowledge in individual daily behavior management (based on the understanding of exposure-related behavior activities and its continuous practicing and on stepwise training to behavioral experiments in individual pinpointed daily and learning problems) ----- **Learning materials:** applicable themes and psychoeducative examples in behavior monitoring of individual daily learning and of daily and learning activities ---- **Monitoring exercises:** psychoeducation on taking the ownership of individual nodal daily behavior problems, based on exposure related techniques and on revalidation of the functionality of increased concern and worry in individual daily management	**Phase 4: Modern, postmodern, constructivist psychological positions on human development and human change;** Search and identification of novel approaches for individual conceptions and beliefs of human change; idiographic acquisition of information on the feasibility and deficiencies of individual's daily psychological development ----- **Learning materials:** contextual development, and its divergent meta psychological approach, holistic conceptualization of individual development, life phases and their conceptualization as developmental tasks and challenges, layperson emotional problems in daily management, divergent approaches in identification and conceptualizing of developmental and behavioral problems, common daily problems in the encouragement of a child's development, themes 1-6 ----- **Monitoring exercises:** taking ownership and developing of individual daily learning behavior (main obstacles: supporting individual own choice of a recording technique and the validation of thought suppression-related behavior activities and their feasibility; supporting the identification and improvement obstacles in individual self-regulated learning activities -----	**Phase 5: Encouragement to take a robust idiographic approach to developmental and behavioral problems**, on the divergent layperson and professional position in supporting an individual development under real life conditions, practice of main consultative and collaborative approaches in conversations of a target person ----- **Learning materials:** behavioral problem-solving therapeutic approach; divergent policies and strategies and their contradictions and constraints in client practice in education, health care, and in other related practices; client consultation for an individual and anxiety-related client's problems; themes 7-10 ----- **Monitoring exercises:** guidance for students for accurately targeted behavior monitoring and for on-going practice and evaluation of its feasibility ----

Appendix V. The multilayered structure of psychology course

Psychology study module → Developmental psychology study module

Phase 1 →	Phase 2 →	Phase 3 →	Phase 4 →	Phase 5
Classroom training: teacher traces and guides each student's behavior and learning activities via student's completed monitoring exercises selected by a student out of several options **Home assignment:** No literary work to be evaluated as a learning outcome --- **Teacher's virtualia feedback to her monitoring exercises:** encourage a student to take a realistic approach to her studies and its real fulfillment	**Classroom training:** Coaching, instructing, training in homework and classroom learning of current learning issues **Home assignment 1** Written report of individual completed recordings and of the validated and conceptualized requirement for their training and practice in individual daily management and abolishment of procrastination. Assessment scale: 1-5; satisfactory outcome: some conceptions and awareness of the divergent psychologies, their conceptualizations; good outcomes: validated and revalidated practice and conceptualizations of individual daily psychological life and its management of worries and problems; excellent outcomes: more intensive and flexible practice of monitoring in individual learning or assessment of the advance in individual learning in psychology studies **Teacher's virtualia feedback, in particular for student's literary home assignment:** Support a student to demonstrate the success of her real studies, not her theoretical psychology knowledge; identify for a student her obviously uncompleted learning activities and encouraging to undertake an honest review of the reasons for crucial limitations in individual learning behaviors **Teacher's virtualia feedback in her monitoring exercises:** encouragement to a student to take a realistic approach to her studies and their real completion	**Classroom training:** coaching, encouragement to students in their practicing of recordings and techniques for the utilization of confrontational, mindfulness, acceptance and commitment behavior strategies in daily behavior management **Home assignment 2:** Report of the implemented learning strategies, of their validation, re-elaboration and revalidation via CBT monitoring and its exercise in individual daily behavioral and learning activities Assessment scale: 1-5; satisfactory: some conceptions and awareness of the divergent psychologies, attempts to have a constructivist, non-empiricist approach to individual real behavior problems, some basic psychological conceptualizations; good: validated and revalidated practice and/or metacognitive conceptualizations of individual daily psychological behavior management; excellent: intensive and flexible practice of monitoring in individual learning or assessment of the advance in individual learning in psychology studies **Teacher's virtualia feedback, in particular for student's literary home assignment:** Demonstration to a student of the feasibility of her home studies (if she considers them required) to be further enhanced via recording and via taking a new approach to her procrastination Teacher's virtualia feedback in her monitoring exercises: encouragement to a student to take a realistic approach to her studies and their real completion	**Classroom training:** coaching students to validation via recordings of their real daily learning activities, enhancement of acceptance and commitment approach, encouragement of the increase of self-regulated learning activities in academic studying via the introduced behavior monitoring methodologies **Home assignment 3:** Acquirement of information on individual development, appraisal and assessment of individual development in holistic approach, including uncertainty issues. Assessment scale (1-5): satisfactory: conceptualization of daily life; good: divergent developmental options and an individual view of things in daily behavior management and tacitly demonstrated awareness of the emotional and anxiety issues in an individual daily life and its management; excellent: evaluation of the methods for real knowledge of an individual's real behavior and conditions, aimed for deeper conceptualization and to internal orientations of a target person herself **Teacher's virtualia feedback, in particular for student's literary home assignment:** Guidance to a student in a search for holistic conceptualization, for metacognitive conceptualization, and support of a student's focus on an individual daily management and its enhancement	**Classroom training:** coaching and consultative supervision of individual identification of developmental issues and real individual behavioral problems; encouragement for a student to integrate anxiety developmental and behavioral issues into her comprehension of an individual human change; encouragement for a student to apply novel methods in knowledge acquisition in elemental issues **Home assignment 4:** Evaluation, planning and consultative experiments in support of a target person's development in a given social context. Assessment scale (1-5): satisfactory: delineating a formal developmental line in psychological terms with its normative support views; good: demonstrated attempts to evaluate divergent optional developmental views and their therapeutic requirements; excellent: demonstrated attempts to confront practical difficulties in individual human development **Teacher's virtualia feedback, in particular for student's literary home assignment:** Feedback for a search of divergent views on individual development and perception of deep individual positions, support of a students' focus on vocational development in real life with its divergent and contradictory health and developmental policies

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The study shows that a critical realist approach to emancipatory teaching practice of vocational psychology enabled the implementation of cognitive-behavioral therapeutic means to scaffold a student's daily learning. Over a period of five years, the implemented and gradual intensification and refinement of the psychology learning scaffolds provided the practitioner-teacher with means to supervise and support each student's own surface or deep learning in step with a student's own behavioral dispositions. The long report shows that the addition of critical realist-informed tools to software-managed behavior monitoring and behavioral training means to address a student's potential worry and rumination is the required extra recourse to scaffold a student's metacognitively managed learning in these dominant surface-oriented and dualist teaching discourses and evaluative practices. According to the results, to at least a small degree the invented and implemented robust scaffolding, as a dialectical critical realist philosophical position to a discursive human intellect learner, strengthened the metacognitively managed mindfulness learning of those students with divergent behavioral competencies.