Preparing Students for Success in Blended Learning Environments:

Future Oriented Motivation & Self-Regulation

Inaugural-Dissertation
zur Erlangung des Grades
Doktor der Philosophie (Dr. phil.)
an der Fakultät für Psychologie und Pädagogik
der Ludwig-Maximilians-Universität München

vorgelegt von
Joel T. Schmidt

Evaluators:

Prof. Dr. Rudolf Tippelt (1^{st} Reader)

Chair for General Education and Educational Research

Prof. Dr. Hartmut Ditton (2^{nd} Reader)

Chair for General Education / Developmental and Socialisation Research

Date of the Oral Defence: January 15, 2007

Acknowledgements

After my daughter asked me what I was doing on the computer all the time, I explained to her that I was writing a big story about how to help my students want to do better at school. She thought about this for a while and then came to me again with an idea: "Why don't you just get a big bucket of suckers. And then every time they do something good, they can have a sucker." – this, from a five year old.

For increasing my motivation on this project, I extend my thanks and appreciation to many special people…

To my wife, Dorothy whose love and encouragement, probing questions, and awesome management skills carried me along over the complete process. To my daughters, Magdalena and Sara who always came running with a hug, listened for a while, and then continued with their playing, giving me the space and love I needed for my project.

To my supervisor (doctor-father – what a great way to say it) and mentor, Dr. Rudolf Tippelt, for his constant encouragement, support, guidance and expertise. No obstacle was insurmountable, and his patience and flexibility helped to ensure my success.

To my "family" at the University of Applied Management (myfham), especially Dr. Dr. Christian Werner, I am grateful for his mentorship and friendship. And to all of my colleagues, for being excellent examples of life-long learning – your support allowed me to reach my goals.

To Dr. Ditton and Dr. Fischer, my readers and evaluators, for providing a community of knowledge and excellence where I could share my gifts and talents. And to the extended community of fellow students and peers, I am thankful for the exchange of ideas and motivated exploration of knowledge, both during our colloquium and afterwards.

To my family (in Canada and Germany), thank you for your love, encouragement, and for knowing when not to talk about my project. And thanks to Paula for being a sounding-board of common sense and straight forward argumentation.

To my friends around the globe, thanks for motivating me through your own pursuit of excellence in many different fields. And special thanks to the Friday night choir – Jubilation Singers – for sharing the gift of song.

To all the students who participated in the research project – your willingness and commitment to open reflection and exploration of your learning over two semesters enabled me in the completion of my project.

All of <u>you</u> are the secrets to my success.

Table of Contents

List of Tables

List of Figures

1 INTRODUCTION

1.1 Statement of the Problem

The reason for this study arises out of the increasing focus on key competences that are inter-disciplinary in nature and affecting many facets of life. The growing body of literature on competence indicates a need for instructional measures. There is a large emphasis upon personal skills of self-regulation, goal-setting, and being actively engaged in what one does. These qualities have become the "requirements" for success in many situations and social contexts, perhaps none so more as in educational environments. New trends and developments are finding ways to incorporate and foster these concepts in practice.

Advances in educational theory – two major advances have impacted the rationale for this study: multi-dimensional theories and the marriage of competence and achievement. Multi-dimensional theories encourage the inclusion of multiple factors when examining the complexities of education, learning and instruction. Bandura's (1986) social cognitive theory incorporates the factors of person, behaviour and environment, and their interactions which will provide the theoretical basis for this study. A recent work by Andrew J. Elliot and Carol S. Dweck (2005) reconfigures the canon of research on achievement motivation under the term "competence". This generic, but powerful term has significance in areas of performance, ability, expertise, and intelligence. The use of such a term connects achievement motivation to a longer time continuum that extends past the specific task, project, course, program etc. into the future. Motivation to learn is connected to a future more distant than task completion, and the term competence helps to solidify this connection.

Career relevant education – increased competition in the job market, on both international and regional levels, has lead to changes in curriculum that emphasize the career relevancy of education and training. The study of business and management has been incorporated into many traditional fields (e.g. psychology, education, health, etc.), in order to better prepare students for success in the job market.

Independent and self-directed ability – skills enabling individuals to take responsibility for their activity, be it work, social, leisure or education related, are a major part of key competency.

Learning over the lifespan – as education is seen as more than just formal schooling, training and higher education, the incorporation of informal learning leads to a concept of continuous education across the lifespan. Competency is a lifetime endeavour, and individuals are able to independently "steer their own course".

Increased learning opportunities – in response to the lifespan concept of continuous education, new possibilities for formal and informal learning are increasing, especially in the area of educational technology (e.g. e-learning and online learning, distance education, Internet, etc.). Success in these new environments often calls for increased levels of independency and self-direction than in traditional environments.

1.1.1 Supporting Students in Online Learning Environments

Since the dawn of the Internet and the world-wide-web (WWW) in the late 1980s and early 1990s, possibilities of using computer technology and ICT for supporting and enhancing teaching and learning have increased dramatically. Yet after more than a decade of developments, the revolution of computer and online instruction is developing at a slower rate than initially expected.

In many ways, computer and online learning environments were originally regarded as supportive in the development of independent learning skills, active engagement and self-regulation, due to the open-endedness of the learning environment and the amount of control that is given to each individual learner. However, for many students, this “freedom” is inhibiting, especially in online learning environments where possible knowledge sources are almost limitless. Feelings of being overwhelmed, “lost in cyberspace”, isolated and apart from community are often expressed. These aspects are also potential causes for the consistently high drop-out rate (Schmidt, 2004; Wang et al., 2003) in online learning programs (some report levels as high as 50%). What was intended to be competency promoting has lead to new challenges and obstacles to overcome in educational experiences.

Blended learning is a format that combines the best of both onsite and online learning environments – it provides possibilities for open-ended and learner controlled activities, promoting active and engaged learning that is self-directed and regulated in online phases, while at the same time offers the opportunity for face-to-face interaction with instructor and peers, along with instructional events that are focused and structured from the expertise of the instructor or teacher. What is lacking in many purely online environments is adequate support and infrastructure for the advantages of exploratory learning to be fully realized; traditional classroom environments often lack freedom and flexibility in terms of when, where, and what learn. Blended learning has potential to address both sides of the coin, resolving the problems in each instructional format. Yet how exactly these learning competencies are to be supported and encouraged in blended learning environments is still not clear.

Two important constructs need to be integrated into learner support structures, namely motivation and time. The connection of motivation to active engagement, self-direction, regulation and independence is clear: all of these become easier when the learner is motivated and wants to learn because the task or activity has value (regulation and monitoring of performance becomes even secondary). Time has a more complex function that relates to the aspect of freedom and flexibility in learning: the challenge lies in making things happen when they need to and planning for the future.

Goals (learning goals and personal goals) and value beliefs are potential connections between motivation and time, for goals are set for things that are wanted, desired and valued (or at the least believed to be necessary) that will come to fruition at a later date. Furthermore, task value increases when a present task is perceived as being "instrumental" in achieving a goal farther in the future (instrumentality). Self-regulation is included in this interaction in terms of performance awareness, including strategies for performance, planning and goal-setting, as well as monitoring and evaluating to see if goals have been successful. One possible form of supporting the learning process in blended learning environments is to place a stronger emphasis on these relationships in teaching and learning activities.

1.2 State of the research on future time perspective in blended learning programs

An individual's time perspective (attitude and orientation toward time) is flexible and adaptable: it is neither fixed nor permanent. Time perspective is learned, allowing for a flexibility of behaviour influenced by individual values and beliefs, and the demands of a specific situation or context (Boniwell and Zimbardo 2004).

According to Husman and Lens (1999), in order to achieve successful performance in school related tasks, a student must be able to function effectively within a future time perspective. Furthermore, new educational environments, such as online and web-based learning increase this future requirement in the necessity for intense self-directed functioning.

Research on motivational issues in education involving future time perspective (FTP), instrumentality, intrinsic motivation and task value is growing, but further research is necessary to more fully understand the relationships between these constructs and what impact they have on learning processes. Perceived instrumentality has been confirmed as a valid predictor of key motivational factors: task value (Miller et al 1996); intrinsic motivation (Husman, Derryberry, Crowson, & Lomax, 2004); volitional and self-regulatory strategy use (Husman, McCann, & Crowson, 2000); and achievement (Malka & Covington 2005). Much of the research has focused on establishing FTP and instrumentality as valid and unique constructs worthy of continued research in the educational sciences and other related fields. Development of reliable, valid instruments and scales to identify these constructs has been a major focus of research over the last decade.

Limited research has occurred applying these constructs to instructional interventions, which is a need expressed in many studies (Malka & Covington, 2005; Miller & Brickman, 2004; Husman, McCann & Crowson, 2000). No research has occurred involving application or operations of these constructs within online or blended learning environments. This is typical regarding research in blended learning, for since it is a relatively new format for learning, detailed investigations involving motivational constructs (including self-regulation) are only just beginning to emerge (see Astleitner, 2003 for a motivational research review, and Hodges, 2004 for a review of self-regulation research).

1.3 Purpose

According to Pintrich (2000c), there is a recognizable need in the field of educational psychology for use-inspired research designs in the effort to bridge the gap between theory and practice. The category of use-inspired research is taken from a heuristic model for scientific enquiry known as Pasteur's Quadrant (see Stokes, 1997; Schneider, 1998; Stark & Mandl, 2003 for reviews) that classifies research using two goal dimensions: usefulness and understanding. Use-inspired research represents one of the four quadrants (see Figure 1.1), and is simply research that aims to achieve both scientific understanding and to develop useful processes or products (Pintrich, 2000c).

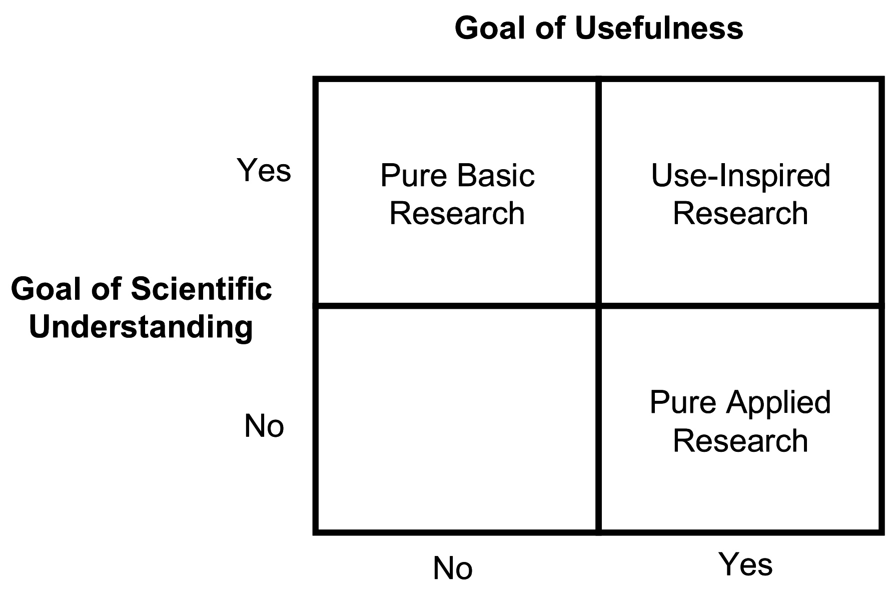


Figure 1.1. Pasteur's Quadrant (adapted from Pintrich, 2000c)

Responding to the need for use-inspired research in educational psychology, this current study intends to promote understanding of factors influencing motivation and self-regulation in order to improve instruction and learner support in blended learning environments. To accomplish this purpose, the current study seeks to achieve the following goals:

- To illicit change in student perception of time perspective through instruction focused on future orientation
- To gain insight into individual differences in self-regulation and motivation by examining differences in future time perspective
- To examine the students' changing perception of metacognitive self-regulation, motivation, and future time perspective over time (2 semesters)
- To make recommendations for the preparation of students for participation in blended learning environments

1.4 Research Questions

RQ 1 Is it possible to illicit a change in student future orientation through instruction?

RQ 2 How does change in future orientation affect student motivation and SRL?

1.5 Structural Overview

The structure of this dissertation continues to unfold with a detailed theoretical overview of the factors and constructs upon which this study is based. Each theoretical section begins with an overview of background and history, followed by new developments and trends, and finally a summary outlining the specific aspects that are important for the application of the theory to this study. Major sections are presented for future time perspective, motivational theory (including goal orientation and motivational beliefs), self-regulated learning, and blended learning. After the theoretical section, the study continues into the operation and application of these theories in an empirical investigation employing an instructional intervention on future orientation within a blended learning environment in a college setting (first semester students) over two semesters. Results and discussion follow the method and procedure to complete the study.

2 Future Time Perspective (FTP)

> "Space and time not only affect but also are affected by everything that happens in the universe. Just as one cannot talk about events in the universe without the notions of space and time, so in general relativity it became meaningless to talk about space and time outside the limits of the universe".
>
> (Hawking, 1988)

The significance of this citation from Stephen Hawking's book entitled "A Brief History of Time" to this current research project is the necessity of using multi-dimensional and contextual constructs for examining and interpreting our own reality. From an educational perspective, it is meaningless to talk about learning and achievement without considering interactions and multiple influences taking place within the learning environment.

Applying this reasoning to the examination of goal-setting in learning activities, it is a limiting approach to only consider the immediate or proximal nature of goals for an immediate task; what a person does in the present has a relationship to what will occur (or what is hoped will occur) in the future. The influence of time within the learning process has received little attention within educational psychology, although recently there has been an increase in research on this topic exploring the relationships between time perspective, instrumentality and various learning processes, such as motivation, and self-regulation (Simons, Dewitte & Lens, 2000; Miller & Brickman, 2004; Simons, Dewitte & Lens, 2004; Simons, Vansteenkiste, Lens, & Lacante, 2004; Husman, Derryberry, Crowson & Lomax, 2004).

2.1 Background and History

The study of time perspective deals with how the flow of human experience is parceled into temporal categories, or time frames, usually of past, present and future (Zimbardo & Boyd, 1999). Although there is a growing body of literature focusing on time perspective, lack of unity on definitions of concepts and terminology is an inhibiting factor in development of the theory – one literature review has identified 211 different conceptualizations of time perspective (McGrath & Kelly, 1986).

Two groups of authors have presented similar, yet distinguishable, overviews of the development of time perspective research that have influenced their unique instruments for assessing future time perspective. A generic concept of time perspective is presented by Zimbardo and Boyd (1999) who begin their exploration with philosophers such as Kant, Heidegger and James and identify Lewin as a key figure involved in time perspective research within the field of empirical psychology. Husman and Lens (1999) focus clearly on future time perspective and begin their exploration from the beginnings of motivational psychology with Frank and Lewin. The life-space model from Lewin is important for both groups due to the fact that it embraces all three elements of past, present, and future. From this common basis, different authors are mentioned expanding the tradition of time perspective research (see Figure 2.1).

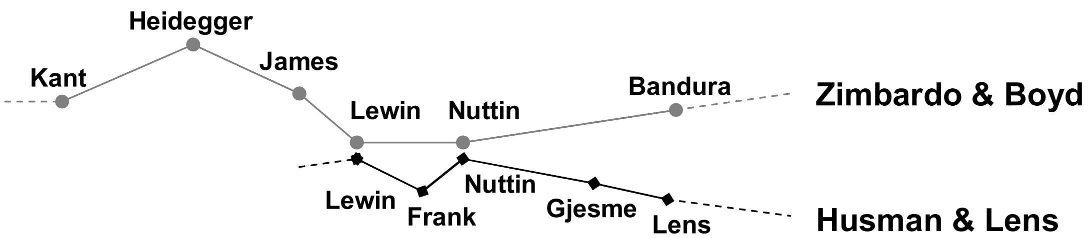


Figure 2.1. Strands of time perspective – a historical overview

After Lewin, the next common figure in both overviews is Nuttin, who in the 1960s firmly grounded the construct of time perspective in cognitive and motivational psychology – his research views future as the "primary motivational space" (as cited in Husman & Lens, 1999, p. 114).

This current study combines aspects of both strands of research: Zimbardo and Boyd's efforts to develop a theory including all three temporal time frames, and Husman and Lens who focus specifically on the construct of future time perspective.

2.2 Time Perspective

Zimbardo and Boyd's theory of time perspective (1999) sub-divides the time frames of past, present and future into 5 different possible perspectives (see Figure 2.2). This theory operates on two primary assumptions: first, that both individuals and environments operate with identifiable time perspectives; and second, that individuals will function optimally when they are able to act congruently with the time frame of a given environment.

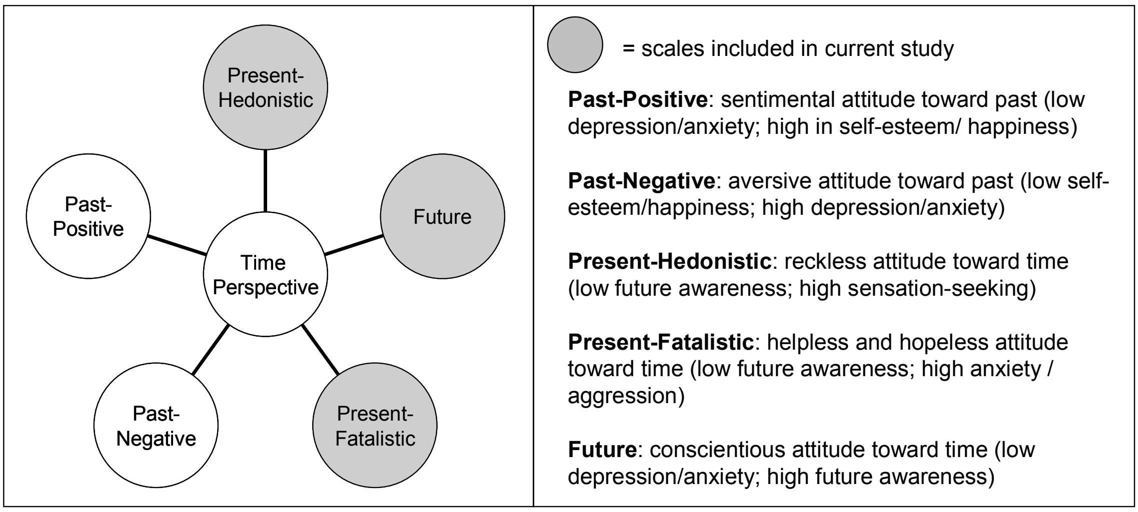


Figure 2.2: Five distinct time perspectives according to Zimbardo and Boyd (1999)

Consequently, the theory does not focus on one perspective in particular, but rather encourages the adoption of a flexible time perspective that acknowledges the influences of all three time frames. It is important to note that Zimbardo & Boyd's construct of time perspective is not just limited to individuals, but can be applied to larger segments of society (e.g. institutions, organisations, social groups, etc.). This has a profound impact on research in the field of education, which has been identified as having a strong focus on the future. While Zimbardo and colleagues offer insight into future time perspective (FTP), it is rather superficial (see Figure 2.2) and does not have the rich connection to motivation as it is defined by Husman and her colleagues.

2.3 Future Time Perspective

Husman and Lens (1999) define FTP as the integration (method and degree) of the chronological future into the present life-space of an individual through motivational goal-setting processes. Four important figures from the overview presented in the strands shown in Figure 2.1 have all included a common feature of future time perspective in their theoretical concepts, namely the importance of goals and planning for the future (see Table 2.1).

Table 2.1: Fundamental concepts found in foundational literature on FTP

Theorist	Fundamental Concept Relating to FTP
Lewin:	goal setting is closely related to time perspective – individual goals include future expectations
Fraisse:	importance of individual beliefs in the possible realisation of the future
Nuttin:	connection of psychological future to motivation (future = time quality of the goal object)
Gjesme:	FTO = capacity to anticipate the future (including cognitive elaboration of plans and projects), reflecting concern, involvement and engagement in the future

According to Nuttin and Lens (1985), it is important to think of individual FTP in terms of its extension, density and degree of realism. *Extension* (also referred to as habitual time space) refers to the amount of time that is considered when making plans, resulting in goals being located either inside or outside of the "habitual time space". The importance of "inside" goals is much greater than goals that are "outside" in terms of how close and distinct they appear[1]. Therefore, having an extended habitual space will influence the perception of long-term goals, making them appear to be closer and more important. *Density* relates to the amount of goals that an individual plans to achieve, and *realism* refers to whether these goals and plans are realistic or not.

Goals themselves also have a characteristics of time attached to them. Future qualities of goals are obvious (all goals come to fruition at some point in the future), however the amount of time is seen as a crucial component of goals and goal-setting. Proximal goals refer to goals that are achieved in the immediate future, while distal goals are achieved in the more distant future. From a social cognitive perspective (Bandura, 1986), Miller & Brickman (2004) explain the importance of goal proximity through self-regulatory processes. Another term for proximal goal is "target goal" – it is the immediate goal (cognitive representation of desired action) and consequently, initiates self-regulation. Through Bandura's concepts of outcome expectations (what a person expects to achieve) and self-efficacy (belief in one's own ability to succeed at a task) the pursuit of goals is supported and continued. The literature implies that goals taking less time to achieve (proximal and target goals) will produce higher levels of

[1] Simons and colleagues (2004) use similar concepts to those from Nuttin and Lens (1985) with the terms "long" and "short". In their explanation extension refers also to *depth* (which is a helpful metaphor for better understanding of these concepts).

achievement than goals taking longer to achieve (distal goals) (Locke et al, 1990; Schunk, 1990; Zimmerman, 1989). This could be a logical conclusion considering the aspects of challenge, difficulty, and perseverance, but only if FTP is not accounted for (especially the aspect of extension). Unfortunately, this misconception that thinking of the future interferes with current motivation has resulted in a minimal amount of studies examining the impacts of distal goals and future orientation on learning and instruction (Simons, Dewitte & Lens, 2004). Efforts are being made to remedy this neglect, and recently there has been an increase of future oriented research, including this current study. Miller, De Backer & Greene (1999) clearly state the importance of integrating both proximal and distal goals:

> "Having a context of personally valued future goals in which proximal subgoals are imbedded not only makes pursuit of the future goal possible and attainment feasible, it gives meaning to our proximal behaviour; for without future goals to guide the generation of proximal goal systems, human behaviour would be guided only by immediate needs and immediate consequences." (p. 251)

Finally, two central functions of future goals are presented by Miller and his colleagues (1999): 1) that future goals provide the impetus for the formation of systems of proximal subgoals; and (2) that future goals represent important motivation for present action, but only when the immediate tasks are perceived as being instrumental to achieving the future goals.

2.3.1 Instrumentality

Research on FTP in learning environments are concerned with examining how individuals perceive and express their relationship to the future within learning activities. An important construct in FTP research is instrumentality. Instrumentality refers to the "instrumental value of a present behaviour" (Husman & Lens, 1999, p.116). At a deeper level it pertains to the perception that completion of a task or a proximal task goal is instrumental to future goal attainment (probability of goal achievement is increased). Essentially it distinguishes the type of value ascribed to an immediate task. The value judgement is defined by chances for realisation of a future goal.

Instrumentality is grounded in two theoretical traditions – FTP theory and Expectancy x Value theory. Expectancy x Value theory (Eccles and Wigfield, 2002) will be discussed in greater detail in chapter 3, but for now it is enough to understand that this theory deals with task or achievement motivation operating on the assertion that motivation for a task is a product of the value held for the task outcome along with the expected probability of success task operation (hence the equation expectancy x value).

Husman and colleagues (2004) elaborate on the development of instrumentality recognizing these two traditions. Raynor's (1981) work on future orientation integrated expectancy/value concepts in that immediate tasks are simply steps toward the realisation of a future goal, which may entail a series of tasks before it is achieved. In this way, there are two types of value: value for the immediate task, and value for the future goal. Eccles and Wigfield's Expectancy x Value framework (2002) portrays four types of task value: utility value, attainment value, intrinsic value, and cost. Of these, task value has received the most attention in literature, and cost the least. Utility value is the only type of value in Eccles and Wigfield's theory to involve a connection to future orientation (Husman et al, 2004). Instrumentality provides this connection, since focuses on the utility of a present task for a future goal, expanding the significance of utility value to more fully understand what occurs in the learning process.

Miller and Brickman (2004) describe the connection of instrumentality to other motivational constructs, namely goal orientation, intrinsic motivation, achievement motivation and self-regulation, which further supports the strength of instrumentality and its inclusion in empirical research. The importance of personal value and purpose that arises from perceived connection between immediate activities and a relevant future goal is necessary for students to adopt a mastery goal orientation and to be intrinsically motivated. “Human beings simply do not pursue competence in every area open to them” (p.19). Instrumentality functions as a selection or filtering mechanism as students select topics to pursue that are interesting, valuable and have meaning to their own development. Intrinsic motivation does not occur simply by matching level of difficulty with skill and ability – there must also be personal value and interest, so that what is being accomplished has meaning. Accomplishments that are viewed as a series of tasks along a path toward a valued future goal help to sustain intrinsic motivation. Since instrumentality helps to maintain the stability of goal orientation and motivation, efforts of self-regulation and strategy selection are also supported. Success does not come from doing a task just for “doing its sake”. Without instrumentality, school achievement can be a meaningless endeavour and a waste of time and energy.

2.4 New Developments

Instruments for assessing future time perspective and related constructs have been developed and tested by many researchers. The trend over the last decade has been to validate FTP constructs with empirical research that combines other motivational and self-regulatory factors (*control beliefs* – Shell & Husman, 2001; *task value* – Miller, DeBacker & Greene, 1999; Husman et al, 2004; *strategy use* – Simons, Dewitte & Lens, 2004; Husman, McCann & Crowson, 2000; *self-efficacy* – Malka & Covington, 2005; *goal orientation* – Simons, Dewitte & Lens, 2000; Malka & Covington, 2005; *delay of ratification* – Bembenutty & Karabenick, 2004).

Efforts have also been made to expand and increase the significance of FTP factors by differentiating between various types within a specific construct. This has been the case for instrumentality, for since it has such a profound impact on student learning motivation, understanding can be furthered by interpreting this construct in more detailed and differentiated ways.

Husman and Lens (1999) differentiate between two types of instrumentality: exogenous (expressing an instrumentality that attributes utility to future goals that are extrinsic in nature and closely related to a performance goal orientation, such as obtaining good grades not for the individual purpose of knowledge expansion, but in order to be accepted in continuing programs of studies or entry into the job market); or endogenous (expressing an instrumentality that attributes utility and value to intrinsic future goals and mastery goal orientation, such as pursuing learning activities purely for enjoyment and interest regardless of final performance outcomes). Husman and her colleagues have continued to research these two types of instrumentality in order to verify the independency of these constructs within academic environments (2004).

Simons, Dewitte and Lens (2004) present a framework of instrumentality that focuses on two dimensions out of which four different types emerge. The first dimension refers to the utility value of goals within chronological time, resulting in utility that is either immediate (proximal) or distant (distal) future. The second dimension relates to the reasons for engaging in learning activities operationalised in terms of regulation that can either be external (grades, status, rewards, etc.) or internal (interest, personal/professional development, etc.). These different types of instrumentality provide further insight into how the relationship of instrumentality to motivation, cognition and achievement, and that the type of instrumentality that a student perceives will yield different approaches to learning (especially strategy use). This type of framework results in a differentiation of goals that is very similar to the 2 x 2 goal orientation framework presented by Elliot and McGregor (2001) which will be discussed in section 3.3.2 (especially Table 3.1).

Current research is now attempting to apply these valid constructs into instructional interventions in order to increase understandings of relationships and connections to processes affecting learning even further. Movement toward instructional interventions has been slow, due to the complexity of FTP constructs. This current program of research offers a much needed entry point into future oriented instruction. A viable framework is to design instructional interventions that are supplemental in nature that can be inserted and applied to already existing courses, regardless of content. Further detail regarding the design of future oriented instruction will be discussed in the instruments section (see section 8.5).

2.4.1 Social Cognitive Model for Future Orientation

In an effort to further the understanding of the relationship between future orientation (including FTP and instrumentality) and motivational and self-regulatory processes in learning, Miller and Brickman (2004) developed a model synthesizing aspects of contemporary social cognitive theory and aspects of the various theories focusing on future goals (see Figure 2.3).

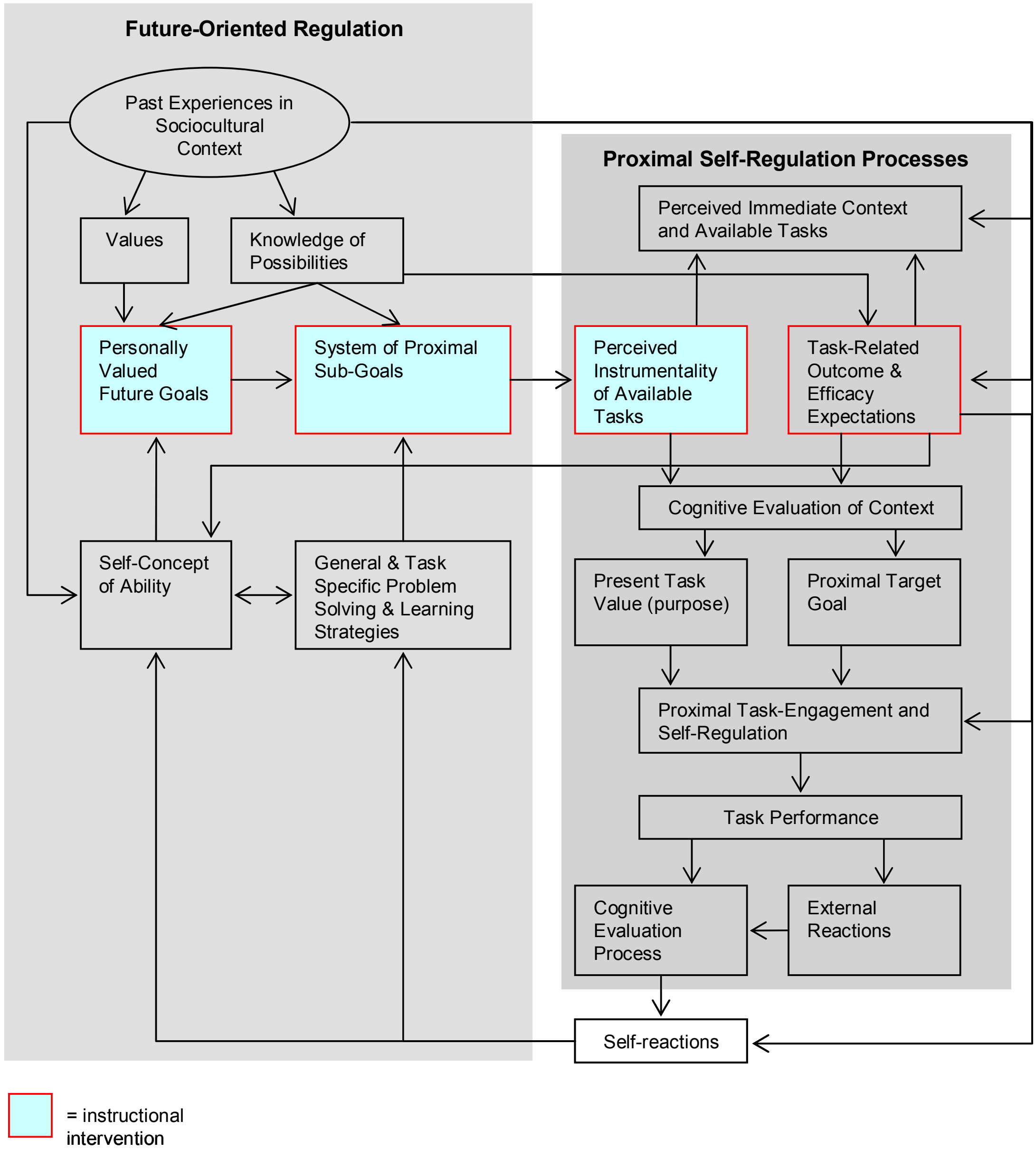


Figure 2.3. Model of future oriented motivation and self-regulation (adapted from Miller & Brickman, 2004)

This social cognitive model presents a description of motivation through the connection between future oriented and proximal self-regulation processes. The key element in this model is the system of proximal sub goals that are future oriented because they extend farther into the future due to their connection with personally valued future goals (career and educational aspirations, relationship development, contributing to society, etc.)[2]. These future goals emerge during the developmental process and are socially influenced (including past experiences and sociocultural contexts). The two main influences represented in the model are values and knowledge of possibilities which also influence the development of subgoals as part of their realisation process. Before deciding to pursue future goals, a value judgement is made relating to perceived possibilities of action as well as the feasibility of goal attainment. This judgement tends to be based on self-efficacy beliefs, ability concepts and self-schemas rather than on detailed analysis of the eventual outcomes.

Although future goals have incentive value (seen as worthwhile to pursue), they are too distant to have impact on and guide actions in immediate situations, therefore Miller and Brickman (2004) incorporate Bandura's (1986) notion of "proximal guides and self-motivators" for actions leading to future goal attainment. These proximal subgoals are the target goals that initiate self-regulation (through specific behaviours and standards of performance). As these goals are completed and the system continues to develop, the commitment to the future goals grows stronger. Furthermore, when the proximal subgoal is viewed as instrumental to future goal achievement then this leads to an increase in motivation and incentive value.

Once a system of proximal subgoals has been established for the realisation of future goals and tasks are undertaken, processes of proximal self-regulation can begin, including self-observation, self-evaluation and self-reaction. "Together, perceived instrumentality and individual perceptions of task-related outcome and efficacy

[2] This model is concerned with regulation, which ultimately is a proximal and immediate occurrence. The intent is to show how future goals influence proximal regulation, therefore the arrows flow from future goals to subgoals to instrumentality, rather than in the opposite direction.

expectations contribute to the cognitive evaluation of the immediate context, and through it, influence the proximal target goals individuals choose to pursue" (Miller & Brickman, 2004, p.17).

The current study deals with the blue boxes for the instructional intervention. Supplemental material is provided to students encouraging and promoting the formation of valued future goals, development of a subgoal system, and reinforcement of immediate task instrumentality. Other aspects of the diagram are incorporated in the study as effects of the instruction, in terms of reported self-regulation and strategy use by the participants. The main value of the model for this current study is in how the personally valued future can encourage, support and foster motivation for immediate tasks when these tasks are seen as instrumental for the future goals (see Figure 2.4). What this model is missing is a representation of this circular building of momentum that occurs when subgoal systems are aligned with future goals.

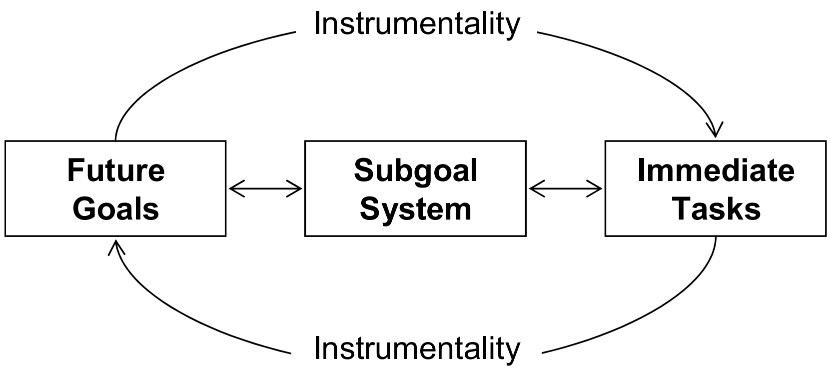


Figure 2.4: Influence of future goals and instrumentality

2.5 Summary

That FTP constructs such as instrumentality and future orientation can influence learning processes (prediction of achievement, relationships to motivational constructs, supports self-regulation) is well documented by the literature. What is not so clear is how exactly this influential theory can be applied and used in educational practice. Currently no prototype for instructional interventions is available for use in teaching, although efforts are being made to rectify this; Miller and Brickman's model is an example. Upon consultation with Raymond Miller in January 2006 regarding the existence of instructional applications of their model, he indicated that his team were preparing such research, but none existed at that current time. Other researchers also recognize the need for instructional interventions representing the next phase of research in FTP.

3 Motivational Theory

Throughout its development, motivational theory has struggled to incorporate both inner and external forces in its explanation, and consequently some theories have emphasised one over the other. Behaviourist theories emphasize external elements and view motivation as a response to stimuli limiting motivational research to only that which is observable. Cognitive theories, in contrast, apply an approach acknowledging the role of individuals' thoughts, beliefs, values, and emotions in motivation. Processes are examined rather than products alone. Many famous scientists and psychologists are connected to both of these theoretical approaches, and while the intent of this study is not to offer a detailed historical review of motivational psychology[3], a few prominent figures warrant mention.

3.1 Background and History

Early research on motivation saw the development of individual theories focusing on inner forces such as instincts, traits, volition and will. Research during the 50s and 60s was dominated by behavioural conditioning theory, and since then there has been renewed interest in the examination inner mental processes. These different approaches to the study of human motivation will be briefly addressed in this section in order to establish how they relate to the focus of this current study. The field of motivational theory is vast, and it is equally as revealing to identify approaches which do not comply to the requirements of this current research project, as it is to examine the

[3] Many opportunities are available for a comprehensive study of the history of psychology in general, including motivational theorists. Resources are available in both print (Wiener – *Human Motivation*, 1985; Zimbardo –*Psychology: Core Concepts*, 2002) and online (http://psychclassics.yorku.ca/index.htm) media.

theory which has been selected as the main theoretical foundation, namely social cognitive theory (which will be presented in section 3.3 of this chapter).

3.1.1 Motivation and Instincts

The research of Sigmund Freud (see Freud, 1966; Weiner, 1985; Zimbardo, 2002) refers to motivation as psychical energy, and that unconscious inner forces (instincts) within a person are responsible for behaviour. The theory centers on the attainment of basic needs through the id (the main personality structure of an individual). The primary goal is to satisfy the needs, but they can also be repressed (expressed in the theory as a predominantly unconscious activity). This is an extensive theory and far more complex than what this simplistic reduction is able to convey. It has influenced the development of other psychological theories either through continuation of its concepts or through rejection of its premises. Such a theory is not relevant for the current program of research due to the focus on primarily unconscious aspects that do not incorporate the factors of individual cognitions and environmental factors. According to Pintrich and Schunk (2002, p. 24), "to improve students' motivation, teachers need to know their goals, interests, and values; how students are affected by teachers and other students; and how to design instruction that teaches and motivates. Freud's theory offers no guidance on these points."

3.1.2 Motivation and Traits

Trait theories attempt to explain observed consistency of behaviour across situations through traits (unique realities within individuals). Gordon Allport (1937) distinguished between common traits (used for comparing groups of individuals – culture, etc.) and personal dispositions (unique determining characteristics) in his theory that defined traits as a determining tendency or predisposition to respond to the world in certain ways (Engler, 1995). An important aspect of his theory is the notion of functional autonomy (implying that motivation is not necessarily tied to the past) contradicted ideas presented by other psychologists and theories maintaining that motives derive from forces in early childhood (Freud) or from particular classes of needs (Maslow's 5 basic needs) or instincts (McDougall's 18 instinctive tendencies). A problem with trait theories such as Allport's for the current study is the static and exclusive qualities of traits. Contemporary learning theories incorporate developmental aspects to the processes and skills involved in learning (developing expertise, life-long learning, deliberate practice). The key issue for educators is that intelligence, ability or other individual characteristic relating to academic achievement cannot be viewed as fixed or static; such a view limits the effect of instruction and individual learning activities on the acquisition of increased knowledge and/or skill.

3.1.3 Motivation and Volition

Volition and will are both closely connected to motivation, and there is an extensive body of literature drawing upon the classical philosophical traditions of Plato and Aristotle with conceptions of the mind including knowing (cognition), feeling (emotion) and willing (motivation). Human will reflects desire, want or purpose; volition is the "will" in action (Pintrich & Schunk, 2002). The notion of combining the concepts of both motivation and volition in a model of human action is well documented in the work of Hugo Kehr (2004). He describes motivation and volition as consecutive phases of action, drawing on the pioneering research of Wundt and Ach, using the well known Rubicon Model from Heckhausen and Gollwitzer (1987). According to Kehr, such models focus on the two main phases of human behaviour: a decision-making phase (selection from various possible options), and a decision-implementing phase (putting the decision into action). Kehr found similar concepts in the early work of Wundt (described as resolution and activity) as well as Ach (described as an act and actions of will), which after a long period of research inactivity have been reintroduced by Kuhl in the 1980s using the terminology of selection motivation and realisation motivation. The metaphor of crossing the rubicon presented by Heckhausen and Gollwitzer represents the development of intention through which the two phases (both motivation – pre-consideration and post-evaluation; and volition – taking action) are at the same time separated and connected. Although two distinct factors, motivation and volition are difficult to differentiate in terms of empirical research, and models and theories allowing for the inclusion of both increase in effectiveness. These concepts are part of social cognitive theory, and the chapter dealing with self-regulation will continue to development these ideas – not just focusing on examining actions for the attainment of goals, but also for the examination of processes involved in the formulation of goals and the commitment to follow through to their completion.

3.1.4 Motivation and Operant Conditioning

Behavioural theories focus on external forces in the understanding of motivation, usually in terms of a response (behaviour) to environmental events and stimuli. Motivation is defined in terms of rate or likelihood of behaviour (Pintrich & Schunk, 2002): using the example of academic motivation, students who are motivated to learn are more likely to engage, persist, and expend effort for task completion than students who are unmotivated. The operant conditioning theory (Skinner, 1953) assumes that behaviour is initiated due to specific antecedents, and followed by consequences (any stimulus or event influencing rate of future response or the likelihood of response when the stimulus is present). This theory demands close examination of the effects of behavioural consequences, and various tactics are presented to encourage/discourage wanted/unwanted behaviour. Reinforcement is one such tactic used to increase the likelihood of response, and can be either positive or negative. Positive reinforcement (often referred to as reward) relates to the addition of a (positive) stimulus following a behavioural response that increases future response; negative reinforcement involves the subtraction of a (negative) stimulus following a behavioural response increasing the likelihood of future responding. Punishment is another tactic used to decrease the rate or chance of response by either removing that which is of high value or by presenting that which is of very low value. Skinner's theory emphasizes the necessity of external forces for continued response, and accounts for this through the concept of extinction (non-response due to non-reinforcement). Operant conditioning and other behavioural theories are inappropriate for use in this research project due to the neglect of internal processes (especially cognitions). Internal processes such as needs, drives, cognitions, emotions, to name a few, are not necessary to explain behaviour from this theoretical position.

By excluding such inner forces, operant conditioning and other behavioural theories are not compatible with the theoretical foundation of this current project accentuating the need for self-motivated, internally controlled and managed active processes on the part of the learner. Behaviourism places the instructor or teacher at the center of educational processes, whereas the purpose of this research hinges upon a framework allowing for the learner to be the central figure in education.

3.2 New Developments

3.2.1 Competence and Motivation

Elliot and Dweck (2005) propose a comprehensive revision of what until now has been classified as "achievement motivation" into a new body of literature under the umbrella category of "competence". Two main reasons are identified for this transformation: the first is a lack of conceptual clarity that is evident in both theoretical development and empirical operationalisations of theory. The second is the narrow and limited scope of achievement motivation literature that in reality has focused only on the domains of school, sports, and work. Under the "umbrella" of competence, any number of pursuits engaged in throughout the lifespan can be included as valid forms of achievement. This inclusive approach is very important for it recognizes that claims and conclusions found with one sample population may not directly transfer to other groups, or especially other societies or cultures (Heine et al., 2001; Li, 2003). A broader concept, according to Elliot and Dweck (2005), is also necessary for the integration of other fields of research inquiry that are closely related to motivational processes, such as creativity, cognitive strategies, self-regulated learning, coping and disengagement, and social comparison, among others.

The attempt to broaden the acceptable theoretical parameters of achievement motivation to include a "multi-domain" perspective echoes similar efforts within the area of intelligence research (Sternberg, 1994; Gardner, 1993) over the last decade to consider a multi-dimensional approach resulting in the identification of a vast array of "intelligences" (for a more detailed explanation of this development refer to Gagné, 1993; Sternberg, 2005).

Beginning with a simple dictionary definition of competence (a condition or quality of effectiveness, ability, sufficiency, or success), Elliot and Dweck (2005) apply this construct within a motivational framework where competence accounts for how behaviour is energised and directed:

> "Competence can be seen as a basic psychological need that has a pervasive impact on daily affect, cognition, and behaviour, across age and culture. As such, competence would seem to represent not only an ideal cornerstone on which to rest the achievement motivation literature but also a foundational building block for any theory of personality, development, and well-being" (p.8).

3.2.2 Intrinsic & Extrinsic Motivation

From a social cognitive perspective, intrinsic motivation refers to "motivation to engage in an activity for its own sake" whereas "extrinsic motivation is motivation to engage in an activity as a means to an end" (Pintrich & Schunk, 2002, p.245). Individuals who are intrinsically motivated work and continue working on tasks out of enjoyment; the task itself is the reward, and no other external reward or constraint is necessary. Extrinsically motivated individuals become involved in tasks because participation leads to attractive outcomes, rewards, praise or even avoidance of punishment or incompetence.

Pintrich and Schunk (2002) recommend a viewpoint that separates these concepts each on its own continuum rather than a polar-dichotomy including both concepts. People can range from high to low on each for any given activity. An essential quality of both intrinsic and extrinsic motivation is the dependency on time and context.

They can change over time, and are unique to a situation and person. In a learning situation, this has important consequences, because intrinsic motivation enhances learning, and learning enhances intrinsic motivation.

The concept of intrinsic (and extrinsic) motivation is a key element that is related to many of the core constructs for this current research study, including the ability to self-regulate learning processes, to adopt an appropriate goal orientation, and to feel in control as a learner to set goals encouraging task completion, among others. The origin of the concept has been influenced strongly by the theories mentioned already in the historical motivation section, and its development will be briefly described in this section[4].

The concept of intrinsic motivation arose, in part by the inadequacies of instinct and drive theories to deal with the human behaviour of exploration and play. No drive or instinct could successfully explain excitement (even in rats) related to exploring new stimuli. White (1959) was the first to propose a psychological motivation[5] called *effectance motivation*, which was “based in the central nervous system rather than non-nervous-system tissue deficits” (Deci & Moller, 2005, p. 582). Effectance motivation referred to a universal or inherent need to feel competent and interact effectively with the environment. Within the competence motivation put forward by Elliot and Dweck (2005), White’s effectance motivation theory is seen as being the initiator of a innate

[4] For much more complete overviews of the origins of intrinsic motivation, please refer to Deci and Moller (2005); Pintrich and Schunk, (2002); and Eccles and Wigfield (2002).

[5] Although it has widely become accepted to describe White’s concept as a need, it is necessary to realize that he purposefully avoided the term if possible. Deci and Moller (2005) point out that it was used only once, for it was a laden term since concurrent psychological research viewed needs as well-learned behaviour or reflexes.

need for competence (Elliot, McGregor, & Thrash, 2002) that is the motivational basis of healthy development. And although he did not use the term, it is generally accepted that White's effectance motivation was essentially intrinsic motivation (Deci & Moller, 2005) since it "motivates activities in which the sole rewards are the spontaneous feelings of interest and enjoyment that occur when one engages in the activities" (p. 582).

Other theories are important and necessary for understanding the modern concept of intrinsic motivation:

- *Mastery motivation* (Harter, 1981) – expanded White's effectance motivation through the construct of perceived competence, which was domain and situation specific rather than generic in nature. Harter's development of scales to measure intrinsic and extrinsic classroom motivational orientation furthered research in these areas. It also helped to identify key characteristics of intrinsic motivation in the learning context which other theories have incorporated – namely, a preference for challenge, and an incentive to work in order to satisfy one's own interest and curiosity instead of working to satisfy the teacher or to get a good grade (Pintrich & Schunk, 2002).

- *Locus of control* (Rotter, 1966; Phares, 1976) – the degree to which a person feels in control of his or her behaviour, especially task engagement and outcomes can have great influence on learning. An individual's locus of control can be either internal or external – depending on perceived source of origin. Internal locus of control can be compared to White's effectance motivation regarding a similar quality of mastery over environment (Pintrich & Schunk, 2002). It is a construct that is also situational, and therefore may differ contextually for an individual. In general it is associated with the motivational effects of increased engagement in academic tasks, and high effort and persistence in the face of challenging tasks.

- *Personal causation* (de Charms, 1968) – connects to the previous theories presented in this section as it deals with the initiation of behaviour that is intended to alter the environment. The research of de Charms maintains that people are causal agents motivated to produce changes in the environment. Using the interesting terminology of origins (people who determine their own behaviour) and pawns (people who believe their behaviour is determined by external forces), his theory is similar to internal and external locus of control concerning the advantages in learning that are ascribed to origins. However, de Charms incorporates clear and applicable implications for teaching and offered training in how to foster and encourage origin behaviours (de Charms, 1976). His methods included exercises intended to enhance achievement motivation, self-concept, realistic goal setting, and personal responsibility. Positive results from this intervention and other subsequent efforts offer a solid foundation for this current program of research focused on soliciting change in student motivation through a "classroom" intervention using a blended learning format.

The two theories of self-determination (Deci & Ryan, 1985) and flow (Csikszentmihalyi, 1988) are especially interesting in terms of their applications of intrinsic motivation, and although they are not specifically operationalized in this program of research, examination of the main premises sheds light on and accentuates elements of intrinsic motivation that are employed in this study, especially the advantages of intrinsic motivation when used as a standard for regulation of performance (self-determination), and the ability to act in one's own best interest to monitor and regulate learning metacognitively (thinking about learning) in order to create a situation/environment that is conducive to “optimal” functioning (flow).

Flow theory defines intrinsic motivation as the immediate subjective experience occurring when engaged in an activity that offers a match between high level of challenge and personal ability (Csikszentmihalyi, 1992). Flow is an emotional state characterised by five main elements:

1. A holistic feeling of being immersed in, and carried by, an activity
2. A merging of action and awareness
3. Focus of attention on a limited stimulus field
4. Lack of self-consciousness
5. Feeling in control of one’s action and the environment

When there is no match between challenge and ability/expertise, then the result is either boredom or anxiety. Within a learning context, flow theory demands skill, expertise, concentration and perseverance from students and learners, while for educators it is the responsibility of creating and designing conditions facilitating the match between tasks and student expertise increasing the possibility of optimal functioning.

Self-determination theory incorporates the notion of “will” (conscious choice of action) in terms of deciding how to act on their environment (Deci & Ryan, 1985). Three innate psychological needs are posited: competence (to masterfully interact with the environment and others), autonomy (to be in control acting as an independent agent), and relatedness (to belong to a group). Intrinsic motivation, therefore is the human need (present at birth and developing with age) to be competent and self-determining in relation to the environment (Deci & Ryan, 1985). Pintrich and Schunk (2002) make the observation regarding implications for learning that it is the process of self-determination that is intrinsically motivating, and offer the following example:

> "A person may have an inherent need to learn and may manifest it by reading books. Intrinsic motivation is satisfied when that person decides which books to read and when to read them, although the actual reading may provide further satisfaction" (p.258).

Kehr (2004) points out an issue of contention with Deci and Ryan's model due to the two criteria used to distinguish between intrinsic and extrinsic motivation. The first criterion is that activity will satisfy basic human needs, and the second is added to this in terms of the self-determined quality of the activity: intrinsic motivation is self-determined while extrinsic motivation can be both self-determined and externally determined. Kehr examines these criteria further, through consideration of an activity that is initially determined externally, but which after a while becomes enjoyable and fun – and questions whether "at this moment is it still externally determined?" (p. 65). In order to solve this dilemma, Kehr imposes two additional requirements for intrinsic motivation: 1) any action must comply with immediate affective preferences; 2) absence of simultaneous external cognitive preferences. This is similar to the process dependent model from Higgins and Trope (1990) because it makes intrinsic motivation dependent on psychological processes.

However, Eccles and Wigfield (2002) in their review of motivational beliefs, values and goals posit a feasible resolution that is less stringent and complex than the one suggested by Kehr. Eccles and Wigfield identify a similar weakness with Deci and Ryan's theory, however it is presented by making a direct comparison with Csikszentmihalyi's (1988; 1992) flow theory, and applied through the example of play behaviour. While self-determination theory relies on innate/basic human needs to conceptualize intrinsic motivation, flow theory emphasizes instead subjective experience. According to Eccles and Wigfield, this is not necessarily problematic since it is an issue of reconciling ultimate and immediate goals (self-determination theory is seen as promoting ultimate goals, while flow theory promotes immediate goals). The premise is that intrinsic behaviour can promote ultimate goals even if the actor is motivated by immediate incentives. Using the example of play, it is a behaviour that promotes an ultimate goal (e.g. competence), but is often engaged in due to immediate incentives (excitement, pleasure, enjoyment, etc.). Intrinsic motivation need not be limited to a specific moment in time (immediacy), but can be viewed on a spectrum, acknowledging a less definable point in the future, as in repeated flow experiences that can be seen as a reward encouraging the continued seeking of competence development Csikszentmihalyi (1992).

3.3 Motivation – A Research Framework

3.3.1 Definition

According to Pintrich (2000b) in his social cognitive approach, motivation is the process whereby goal-directed activity is instigated and sustained. Motivation involves goals for purposeful action with an intended direction; action or activity is essential, and it can be either physical or mental; and finally, it requires taking a first step and committing to sustained action. Motivation has potential to influence the what, when, and how of learning (Schunk, 1991b), and increases the likelihood of engaging in activities that will help them learn and achieve better performance. Motivation bears a reciprocal relation to learning and performance; that is, motivation influences learning and performance, and what students do and learn in turn influences their motivation (Schunk, 1991b).

The model presented in Figure 3.1 illustrates the conceptual framework for this current program of research on motivation and cognition in blended learning instructional environments. It is based upon a similar framework presented by Pintrich and Schrauben (1992), however, since their research examined traditional classrooms items listed beneath the main headings have been adjusted to meet the concerns of the current research project. Starting at the far right is the outcome of student achievement, and all items to the left are viewed as being important and relevant to this outcome. Involvement in learning is indicative of achievement and is a result of both motivational and cognitive components (Pintrich & Schrauben, 1992). Both of these components are influenced by task characteristics as well as the kinds of instructional processes that the student is faced with. These processes include environmental aspects that form the social context of the instructional situation, to which students bring their unique and individual characteristics shaping the interactions between personal, task, and instructional processes within unique learning situations.

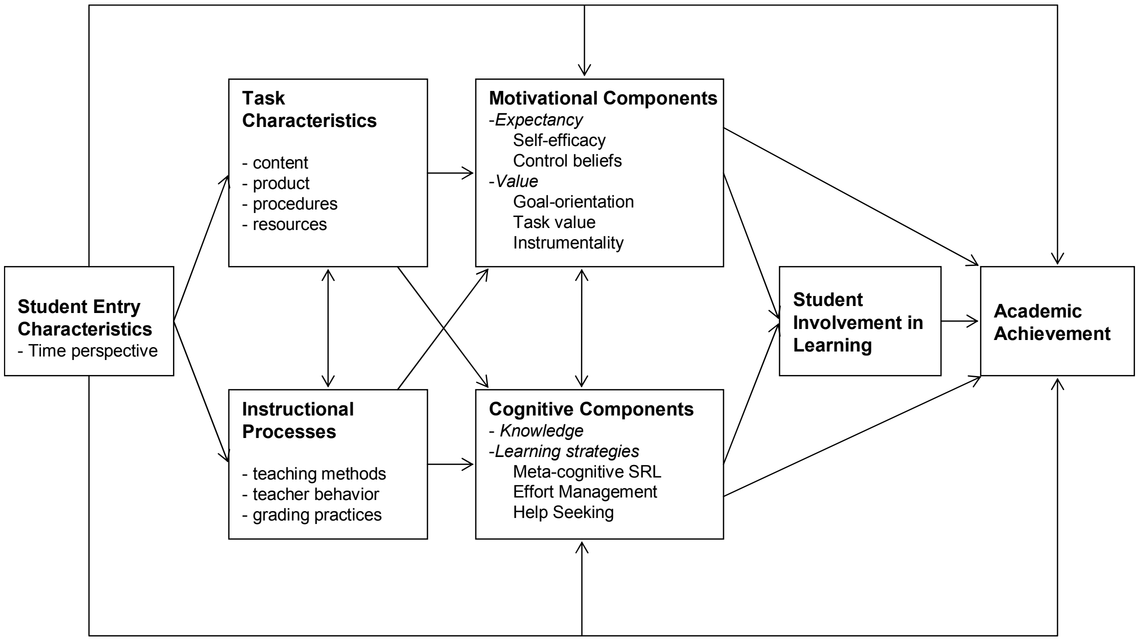


Figure 3.1. Social cognitive model of student motivation applied to current study (adapted from Pintrich & Schrauben, 1992)

There are two main types of motivational beliefs presented in the model: expectancy and value beliefs. According to Eccles (2005), these beliefs are directly related to educational, vocational, and other achievement related choices and decisions that people make. These choices can be immediately acted upon, in terms of task action, or can be acted out more gradually over time, in terms of personal goals for the near and/or distant future. Eccles applies this time-flexible aspect of task and value beliefs in an educational context with the specific example of student enrolment decisions[6], where students select courses that they are confident in their ability to succeed and master, and that have a high task value. Eccles maintains that expectations "depend on the confidence the individual has in his or her intellectual abilities and on the individual's estimation of the difficulty of the course" (pp. 105-106). These beliefs are based on the

[6] Although Eccles elaborates specifically on the example of course enrolment, it is equally possible to apply her argumentation to enrolment in a specific degree program.

sum of previous experiences with the content (prior knowledge) and the subjective interpretation of those experiences (effort or ability success attributions). Factors influencing value beliefs for a specific course include enjoyment, whether it is a prescribed requirement (program requisite), instrumentality (take an active role in achieving proximal or distal future goals, affective associations (fear or anxiety, etc.), social comparisons (appropriateness or eligibility), and also interference with other more valued pursuits (academic or recreational).

The original model (Pintrich & Schrauben, 1992) on which Figure 3.1 is based, incorporated also the important aspect of affect. While this is a valid component to include in motivational research (for a very comprehensive examination of the importance of affective factors in motivation and cognition, refer to Pekrun, 1987), the emotional responses to performance have not been addressed in this current program of research. This is something to be considered in subsequent future research projects in blended learning environments.

Expectancy components involve student expectations related in task performance and success. Based on social cognitive theory, self-efficacy and control beliefs are key elements that are linked to cognitive engagement – students who perceive themselves to be capable and in control of their learning are more likely to cognitively engage as seen through strategy use, effort regulation and persistence (for a comprehensive review see Pajares, 1996). As discussed previously in the introduction to social cognitive theory, control beliefs are directly related to the aspect of self-directed action and self-regulation which is a key concept of Bandura's theory. The section dealing with self-regulation will go into greater detail on this important component that has such a strong relationship to student motivation.

Value components involve student beliefs about the importance, utility and interest of a task (Pintrich & Schrauben, 1992; Pintrich & Schunk, 2002; etc.). These beliefs about the reason for engaging in specific tasks provide a framework of self-directed action influencing the selection and use of cognitive strategies (Pintrich & Schrauben, 1992). Two main components are being addressed in this current research: goal orientation and task value. Utility of task has been identified as a central aspect in the literature (Eccles & Wigfield, 2002), however it is not often realized in empirical research interventions (Pintrich, 2000c). This factor represents a central aspect to this current study, and is realized through the concept of instrumentality and the connection to future time perspective. The relationship of instrumentality to the other motivational and cognitive components has already been addressed in the introduction to this paper.

3.3.2 Goal Orientation

Essentially, goal orientation theories are concerned with explaining achievement behaviour through an achievement goal framework that integrates both cognitive and affective aspects. An *achievement goal* relates to the reasons for and purposes for engagement in achievement behaviour. However, there is a vast amount of literature on goal constructs offering diverse statements on the definition and meaning of achievement goal and goal orientation. Efforts have been made to unify the body of literature emphasizing similar aspects, as indicated previously in the work of Elliot and Dweck (2005), but others have also made integrative efforts (Ames & Archer, 1987; Pintrich, Conley, & Kempler, 2003). This section will provide a brief historical overview outlining the development of terminology and constructs that are being applied to this current program of research. After the brief overview, advantages (and disadvantages) will be presented as found in previous literature for the achievement goal constructs included in this study.

It is generally accepted in the body of literature that research on achievement goal constructs have developed and benefited from early efforts by Carol Dweck as well as John Nicholls (Elliot, 2005). Dweck's (1986) construct was developed from her research with school children regarding "helplessness" in achievement settings, and identifies two types of goals: performance goals (purpose of behaviour is to seek favourable judgements of competence or to avoid negative competence judgements) and learning goals (purpose of behaviour is to increase their competence and to understand or master something new). Her research positioned these two types of goals within either adaptive (mastery-oriented) motivational patterns characterised by challenge-seeking and persistence, or maladaptive (helpless) patterns characterised by challenge avoidance and low persistence.

The achievement goal construct from Nicholls (1984) resulted from his research on children's developing conceptions of ability and effort, and was also expressed with two types of goals: task involvement (purpose of behaviour is to seek ability through learning or mastery of task) and ego involvement (purpose of behaviour is to demonstrate ability by outperforming others with less effort). His construct views the two goals as being either undifferentiated (no distinction between effort and ability) or differentiated (effort and ability are distinct, with ability having a fixed capacity).

Often, the constructs from Dweck and Nicholls are seen as similar enough to combine under the common terminology of mastery and performance in an effort to integrate the two theories (see Ames & Archer, 1987). Elliot (2005) has identified seven similar characteristics that have been very foundational in his work on incorporating approach/avoidance terminology into achievement goal literature.

- First, both Dweck and Nicholls developed their constructs in response to limitations of motive and attributional constructs. Their ideas responded to previous research and literature focusing on motive and attribution, and were seen as an integration of what had come before, and not necessarily as a completely new theory.

- Second, both incorporate the idea of purpose (the reason for behaviour in an achievement situation, and outcome or aim for an academic situation) into the achievement goal construct.

- Third, each theory adopts an inclusive approach when examining the effects of academic goals (such as demonstrating ability and self-preservation, among others).

- Fourth, both achievement goal dichotomies are very comparable with similar hypothesized effects: learning/task goal focused on ability development and task mastery, assumed to produce positive processes and outcomes; performance/ego goal focused on demonstration of ability and the desire for normative competence, and assumed to produce negative processes and outcomes.

- Fifth, both were committed to the conceptualization of their achievement goals as distinct and separate forms of self-regulation.

- Sixth, achievement goals were viewed as being influenced by situational and dispositional elements, but tended to focus on situational aspects.

- Seventh, both Dweck and Nicholls made a conscious effort not to use the approach and avoidance dichotomy to explain their achievement goal construct.[7]

The integrative effort by Ames and others has resulted in an expanded conceptualization in which achievement goals are characterised as networks or patterns of beliefs and feelings about success, effort, ability, errors, feedback, and standards of evaluation, and often uses the term "orientation". However, there is still disagreement regarding interpretations of the terminology surrounding achievement motivation.

The achievement goal construct and goal orientations are cognitive representations of what individuals are trying to do or what they want to achieve, and are specific to domain, situation, and/or task (Pintrich, Conley & Kempler, 2004). From its very beginnings research on achievement goal constructs has maintained a strong separation from the more general constructs of achievement motives regarding the arousal of the individual in all achievement situations, which are implicit, less conscious, more affective in nature (Pintrich, Conley, & Kempler, 2004). A study by Thrash and Elliot (2001) goes into much greater detail regarding the distinction between achievement goal constructs and achievement motives, maintaining that achievement goals and goal orientations are not motives in the classic achievement motivation tradition. Similar efforts to separate achievement goal constructs from other motivational terminology have been made, especially regarding goals and goal setting

[7] If the approach/avoidance terminology was used at all, the positive "approach" version of competence was applied. Nicholls and colleagues (1989) have described task and ego goals as being "two forms of approach motivation" (p. 188). However, to use an old cliché – "easier said than done" – these two constructs are still unique and must be viewed independently, as they arise from different environmental or instructional demands and lead to qualitatively different motivational patterns (Ames, 1987).

(Pintrich & Schunk, 2002), and mastery learning (Ames, 1987), which refers to a model for the delivery of instruction (e.g. Bloom's Taxonomy, as described in Bloom, 1985). Increasing the complexity of achievement goal literature, some studies have included other dimensions when examining achievement goals in an effort to emphasize compatibility with various relevant motivational and cognitive constructs. However, as stated by Pintrich, Conley & Kempler (2003): "goals are clearly distinct from attributions, theories of intelligence, success, failure, and affective reactions" (p. 321).

Pintrich and his team (2003) present a helpful overview of "goal" terminology in achievement motivation theory on three levels relating to time (distance from the present). Figure 3.2 presents a visual depiction of this explanation.

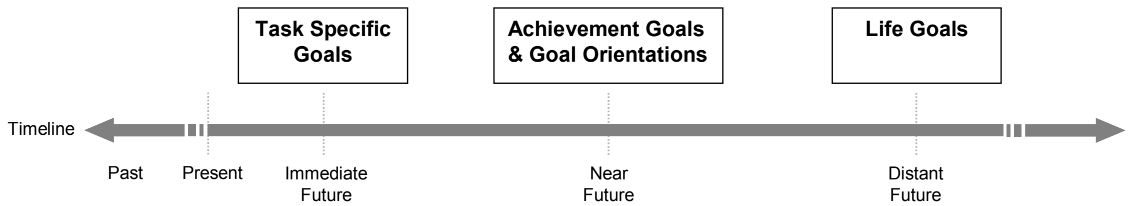


Figure 3.2: Overview of goal terminology on a timeline

Task specific goals (or target goals) are specific ends or results that individuals want to achieve. *Achievement goals* and *goal orientations* represent an individual's "orientation" (cognitive representation) to the task or situation and the general focus or purpose for achievement (such as mastery or performance), including standards or criteria used to define goals. *Life goals* represent broad, general goals over the life-span (such as happiness, intimacy, friendship, material gain, etc.). For a detailed description of many different possible life goals that have been identified empirically, see Wentzel (2000).

Elliot's own research encouraged the introduction of approach/avoidance dichotomy to achievement goal literature, due to conflicting results from many empirical studies regarding the advantages of mastery and performance goals – which construct is optimal bringing the most successful results and positive consequences? The problem was mainly regarding the label of performance goals as a "maladaptive" motivational pattern having no positive effect on achievement or otherwise. Research supported the claims regarding the positive ("adaptive") consequences of adopting a mastery goal, but research on performance goals was providing mixed results. Elliot points out in his review that "performance goals sometimes had negative consequences, sometimes had no consequences, and sometimes even had positive consequences" (p. 58). These inconclusive findings prompted researchers interested in achievement goal constructs to explore other possibilities and even combinations of goals in different domains (such as industrial-organizational psychology). Unable to agree as to which direction to maintain ("high mastery-low performance" goals vs. "high mastery-high performance" goals), research expanded on other kinds of goals than just the "big two" (Elliot, 2005), including work avoidance goals, extrinsic goals (seeking reward or punishment), and social goals (focusing on interpersonal relationships – for a detailed review see Urdan & Maehr, 1995).

Elliot and colleagues have been researching the inclusion of classical approach/avoidance motivation theory into the achievement goal constructs in a very innovative way (see Elliot, 2005 for a comprehensive review). An explanation for the mixed results in achievement goal literature, was based on the realisation that many studies were unable to distinguish empirically between performance goals focused on the possibility of a positive outcome (representing approach motivation) and performance goals focused on the possibility of a negative outcome (representing avoidance motivation). Without such distinction, "studies combining these types of goals together under the (omnibus) performance goal rubric would produce the mixed empirical pattern observed in the extant data" (p. 59). The dichotomous achievement goal construct (mastery/performance) was transformed into a trichotomous framework applying approach-avoidance motivation to the performance goal construct and leaving mastery goals intact. Within such a framework the three-way achievement goal constructs are defined as follows:

> "Mastery and performance-approach goals were characterized as approach goals, because they focused on potential positive outcomes (improvement/mastery and normative competence, respectively), whereas performance-avoidance goals were characterized as avoidance goals, because they focused on a potential negative outcome (normative incompetence)" (p. 60).

For individuals adopting a performance-approach achievement goal, a primarily positive motivation is displayed in their efforts to try and outperform others as proof of their competence and superiority. While in contrast, individuals who adopt a performance-avoidance achievement goal, a mainly negative motivation is displayed as they try to avoid failure and any negative ability judgements, or proof of their incompetence.

Although the trichotomous framework has been accepted as a viable solution (Pintrich & Schunk, 2002; Eccles & Wigfield, 2002), recent research has extended the approach/avoidance rubric to mastery goals as well (Pintrich 2000a; Elliot & McGregor, 2001). Mastery-approach achievement goals embody all positive characteristics of what has been previously described under the label "mastery" achievement goals (seeking to develop one's own skills and abilities, learning and understanding, etc.). Now, in this new framework, a new variation is added to the mix – mastery-avoidance achievement goals. These achievement goals function through the application of extremely high internal standards of excellence expressed through an over-compensatory focus on avoiding incompetence (self-judgement or task performance judgement) self-referential or task-referential incompetence. Students who exhibit such goal orientations are not concerned about mistakes or failure in comparison with others (this would be performance-avoidance), but rather in terms of their own internal standards of excellence (Pintrich, Conley, & Kempler, 2003). Individuals who adopt mastery-avoidance goals typically are concerned with avoiding loss of skill and abilities (stagnation or cessation of development), forgetting what has been already learned, misunderstanding, or unfinished or incomplete tasks, projects, etc. According to Elliot and McGregor (2001) these goals were labelled "mastery" due to the focus on development and task-mastery; the label "avoidance" was applied because of the potential negative outcome of incompetence. Even though mastery avoidance goals are thought to be less frequent, Elliot and Thrash (2001) have identified these goal constructs in the elderly (gradual loss of skill and ability due to age); athletes, students, or employees who have reached a high level of performance (peak-performance) and consequently focus on not displaying sub-performance levels; similar aspects apply to "perfectionists"; people who consider themselves to have a poor memory or to be very forgetful.

The significance of competence as the "core" of achievement goal constructs is important to this study. Elliot (2005) identifies two ways to examine/differentiate competence: definition and valence. The *definition* of competence is derived from the standard used in its evaluation, which can be separated into three unique forms: an absolute standard (based solely on the requirements of the task), an intra-personal standard (based on either past levels of achievement or on achievement potential), and an inter-personal standard (based on normative comparison). These three standards as applied to the 2x2 achievement goal framework are outlined below in Table 3.1. In this framework, the absolute (task mastery) and intra-personal standards are combined due to conceptual and empirical similarities (Elliot, 2005) so that competence can be defined in "absolute-intrapersonal" terms (expressed via mastery achievement goals) or using "interpersonal" terms (expressed via performance achievement goals).

Table 3.1: Elliot's 2x2 Framework and Competence Factors

		Definition	
		Absolute-Intrapersonal Standards	*Interpersonal Standards*
Valence	*Possible Competence*	Mastery-Approach	Performance-Approach
	Possible Incompetence	Mastery-Avoidance	Performance-Avoidance

Adapted from Elliot (2005)

Competence implies and aspect of value – expressed in either positive terms (competence or success) or in negative terms (incompetence or failure). In this way, Elliot (2005) establishes the necessary concept of approach/avoidance, for achievement goals are either approaching the possibility of competence or avoiding the possibility of incompetence. Elliot's heuristic elegantly unites the theories surrounding achievement goals and goal orientations in his 2x2 framework:

> "That is, definition and valence are construed as necessary features of achievement goals, because it is not possible to formulate an achievement goal that does not include, implicitly or explicitly, information as to how competence is defined and valenced" (p. 62).

The fundamental concept of viewing achievement through the lens of competence encourages and supports the current program of research. Value, or its perception by students, is a key element to this study and is operationalized through the concept of instrumentality (task-value and at the course level, "course relevance").

3.3.3 Intrinisc Value & Task Value

This current program of research focuses on two aspects of value components that have been previously introduced. A fundamental question (Schmidt, 2004) to be considered is why some children seek the challenges of learning and persist in the face of difficulty, while others (even with seemingly equal ability and potential) avoid challenges and withdraw from obstacles or difficulties? Examining the construct of intrinsic value can shed light on this question.

Intrinsic value can be examined in terms of two constructs: goal orientation and task value beliefs (Pintrich, Smith, Garcia, & McKeachie, 1993). Goal orientations, as discussed previously, on a very general level lead students in one of two very different directions relating to the quality of task engagement that is defined either by standards set by the "self" or by "others", and that seeks either to move toward competence or to move away from incompetence (see Table 3.1). Intrinsic value in the most recent version of the expectancy-value model (Eccles & Wigfield, 2002) is defined as "the enjoyment the individual gets form performing the activity or the subjective interest the individual has in the subject" (p. 120). This definition incorporates elements from a number of motivational theories that are concerned with the reasons individuals have for engaging in different achievement tasks, or more specifically the reasons for valuing these tasks: Deci and Ryan's (1985) self-determination theory; Csikszentmihalyi's (1992) theory of flow or optimal experience; theories dealing with individual and situational interest (Schiefele,1991) incorporating an evaluative orientation towards certain domains and an emotional state aroused by specific features of an activity, respectively; and achievement goal constructs and goal orientations. It is important to keep these relating theories in mind when dealing with the complexities of motivation. Task value may be identifiable in a construct such as intrinsic value, but it must remain connected to these other aspects that are grounded in social cognitive theory.

Task value beliefs facilitate more readily a quantitative approach since observable higher value levels have related to increases in academic motivation. In this way, task value beliefs provide insights into reasons for engagement (Eccles & Wigfield, 2002; Pintrich & Schunk, 2002), and can be examined more specifically in terms of task *interest* (personal interest and liking of the course material), *utility* (perception of the usefulness of the course material), and *importance* (perception of significance for the course content at present and for future goals).

Bong (2001) in her recent study examining self-efficacy, task value, and achievement goal orientations found that task value was more distinct across the academic domains of Korean Language, English, Math, and Science. Furthermore, Bong posits that her results indicate that importance, usefulness, and intrinsic interest students perceive in the school subject may play a more meaningful role in guiding students to the mastery goal adoption. This is a key aspect that is examined in this current research study, which examines the motivational effects of an intervention providing instruction on self-management and future orientation.

3.4 Summary

Research on motivation in educational environments has a long and rich history incorporating many complex aspects of the many processes affecting learning. Models for the study of motivation in learning environments, referred to as competence motivation, incorporating contextual factors offer a more complete picture of what occurs in learning processes as students interact with multiple constructs. The social cognitive framework (see Figure 3.1) employed in this current study includes the key elements of student entry characteristics (time perspective), instructional processes and task characteristics (specific instructional intervention within a blended learning environment), motivational components (expectancy factors of self-efficacy and control beliefs; and value factors of goal orientation, task value and instrumentality), and cognitive components (relevant knowledge and learning strategies, including metacognitive, effort management and help seeking).

4 Self-Regulated Learning (SRL)

4.1 Definition

SRL is a process of activating and sustaining cognitions, behaviours, and affects all of which are systematically oriented toward goal attainment (Zimmerman, 1989). Simply put, it is student ability to regulate individual learning. Metacognition (awareness, knowledge, and control of cognition) plays a crucial role in SRL as students are cognitively active in three phases: preparation, performance, and appraisal (see Figure 4.1).

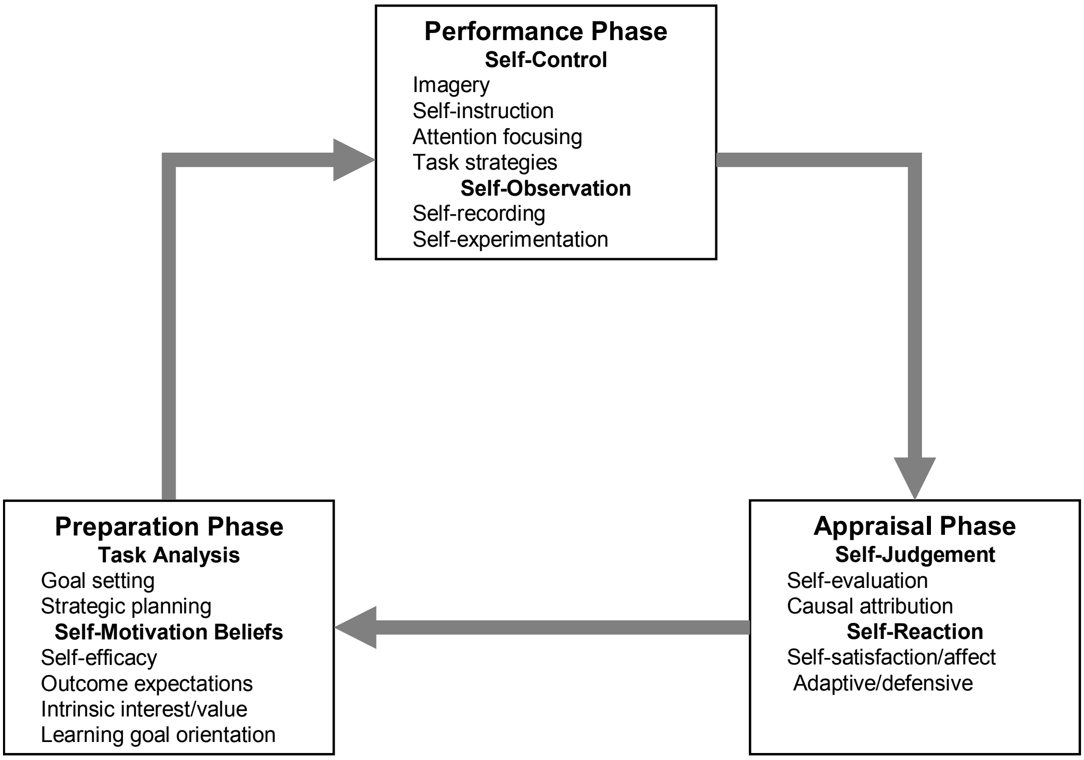


Figure 4.1. Phases of self-regulated learning (adapted from Zimmerman, 2002)

According to a recent review of literature (Puustinen & Pulkkinen, 2001), these three phases are incorporated in many of the major theories of SRL. Preparation involves task analysis, goal setting, planning, and strategy selection; performance is the application phase that includes monitoring and possible adaptation of strategies; appraisal involves reflection on the performance which may mean revision if the process continues into further cycles (Nesbit & Winne, 2003). The extent to which students are able to self-regulate these phases influences the success of learning. This type of behaviour is essential in blended learning environments, and needs to be fostered, encouraged and modeled in such settings.

4.2 Background and History

The background of self-regulation is extensive, for it is essentially one of the main reasons why learning occurs. Recognition of the need to adapt and change according to a specific situation (in the case of SRL, a learning situation), and afterward taking the necessary action. This aspect of self-awareness and self-control can be traced back to philosophers, such as Descartes (1985) within the concept of conscious will and volition. From an educational perspective, elements of self-regulation can be found in major theoretical approaches that have evolved into the modern field of educational psychology, especially behaviourism and cognitivism.

4.2.1 SRL & Behaviourism

Self-regulation in the behaviouristic tradition can be described simply as overt responses resulting in specific behaviour. This can be shown by Pavlovian concept of regulatory influence (consider the classic example of animals that associate food with the ringing of a bell, evident in the occurring salivation even when no food is presented). Skinner (1965), in his Reinforcement Theory also incorporates self-regulation as a key aspect in his consideration of stimulus-response where behaviour depends on consequences taking the form of either reward (reinforcement) or punishment. One concrete form of self-regulation in this tradition is delay of gratification (where immediate activity is denied for a greater future reward). In a learning context, the three phases are still present, but with different terminology: self-monitoring (deliberate attention to a specific behaviour, requiring regularity and proximity to performance); self-instruction (discriminative stimuli leading to reinforcement – such as arranging the learning environment); and self-reinforcement (a reward intended to lead toward repeat success, and therefore must be carefully selected). From the behaviourist tradition it is evident that only active behaviour can be self-regulated.

Active or purposeful behaviour necessitates certain processes (see Figure 4.1 from Zimmerman) such as goal setting, goal directed, intentional, and conscious action. The regulatory function is feedback, and without purposeful behaviour, there is no need for feedback (especially self-generated feedback). Feedback provides the impetus to adapt and change behaviour or to continue as before. Therefore, most important for education is the perception of cases of failure which produce negative feedback – a reason to behave differently.

The development of cybernetic research from the 1940's provides an excellent example for illustrating this feedback principle through the TOTE method: TEST-OPERATION-TEST-EXIT. This method (see Figure 4.2) simulates the basic regulatory processes in an individual beginning with a TEST (assessing whether there is a discrepancy between the actual – *now* – state and the desired – *future* – state). This method acknowledges that an individual will only be active if there is a discrepancy (such as a mistake, failure, or confusion).

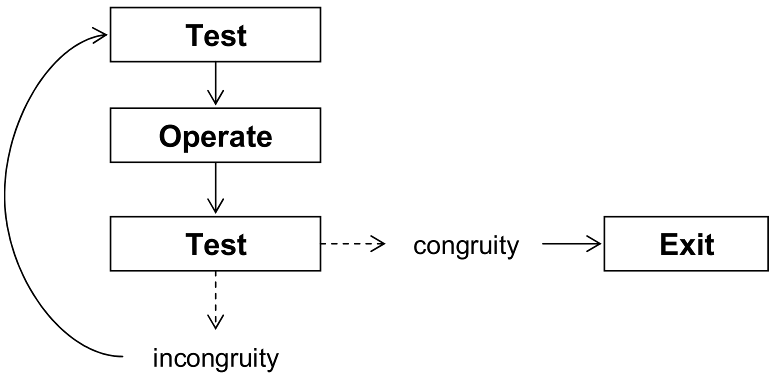


Figure 4.2. TOTE Method (adapted from O'Connor & Van der Horst, 2006)

This figure portrays a basic sequence of this method. If, after the second TEST there is no discrepancy (congruity), then further testing is not necessary (EXIT); if discrepancy (incongruity) occurs, then further OPERATION is necessary. The sequence is repeated until there is no discrepancy (EXIT). Modern usage of this simple model is continuing with applications in neuro-linguistic-programming (NLP) as well as cognitive-neuro brain research.

According to Piaget (as cited in Cantor, 1983), behaviour is always conflict driven, which can be either internal or external. If there is no conflict, there is no activity – no activity, means no learning or self-regulation. Within SRL theory, the importance of a feedback loop is vital to the success of self-regulation. In order for optimal functioning, there must be a goal within the preparation phase; the performance phase must be monitored (self-monitored); and there must be self-reflection and self-evaluation occurring. Without these, SRL will simply not occur.

4.2.2 SRL & Cognitivism

From the tradition of cognitive psychology, issues of self-control and activity remain constant features as self-regulated learning is explored and examined. Whereas behaviouristic researchers focus on the overt responses of an individual to specific stimuli, cognitive researchers emphasize the mental activities that are involved in specific behaviours. As in behaviourism, SRL from a cognitive perspective achieves significance for learners in the solutions it offers for resolving discrepancies, namely strategies and tactics. Weinstein and Meyer (1986) differentiate between strategies and tactics: strategies are plans oriented toward successful task performance; tactics are specific procedures that are implemented. According to their research, strategies for learning can be divided into either primary strategies (relating to content) or support strategies (non-content related aspects, such as climate). For example, consider content strategies dealing with learning material (e.g. rehearsal strategies): many tactics can be applied within this type of strategy (repeating information, underlining, summarizing, etc.). Yet before possible solutions can be considered, discrepancies or deficiencies in the learning task need to be identified.

Early research in cognitive psychology has put forward two specific types of deficiency: mediational (Reese, 1962) and production (Flavell et al., 1966). The mediational deficiency, according to Reese (1962) reflects a stage in a child's development occurring when behaviour is not mediated (adapted or changed) verbally even though verbal processes are understood. Flavell's production deficiency occurs when verbal mediation of behaviour is not spontaneous. Both studies involve primary school pupils learning a sequence of pictures through recall and rehearsal activities. The significant results of these studies state that spontaneous use strategies (such as rehearsal) improves performance (recall), training in strategy use can effectively increase performance. These findings have influence the field of cognitive psychology in SRL research as they prompted further examination of how to use knowledge of childhood development to isolate specific skills for use in attaining learning goals (as in verbal skill development applied in the use of rehearsal strategies aiding memory goals). Further research in the field has added another deficiency called continued use deficiency, which is based on the observation that some learners fail to use some strategies continuously stemming from inadequate understanding of the strategy.

These cognitive concepts have developed in terms of learner success, and achievement is considered not only in terms of success, but also from the perspective of under achievement (Borkowski, & Thorpe, 1994). This focus increases the need for research that is domain specific, since what works for one subject matter may not be successful when applied to other subjects.

Research on information processing is an example of a cognitive approach examining elements of attention, perception and memory (procedural strategies for encoding information into long-term memory) in self-regulated learning. This approach incorporates the important concept of metacognition (thinking about thinking). Considerable research has been conducted in terms of developing reading ability. Examining key elements in this domain helps to present an overview of important concepts from a cognitive information processing approach that is applied to other domains. Early research by Robinson (1946) developed and tested a method for successful reading called SQ3R (the letters stand for Survey-Question-Read-Recite-Review). This method presents useful pre-reading strategies that support the challenging task of learning from texts. Students first survey a text (cursory reading or scanning) focusing mainly on headings and main ideas, afterward they develop questions. Next, they read the text again while keeping their self-generated questions in mind. Following this reading, students attempt to recall the information without referring to the text. A final step is to return to the text and review the material checking for correct understanding. This has been a successful method in North America for many students.

In the 1980's Dansereau (1979) developed a similar method focusing on post-reading activities. It requires students to expand the information offered in the text by relating it to other information creating links between memory networks, and it trains students to ask questions relating to meaning, critical thinking, and transfer of knowledge. Dansereau's method moves beyond the SQ3R as it includes support strategies, such as goal-setting, concentration management (self-talk), monitoring and diagnosing, and finally re-reading. This is a great example of how SRL can be applied to the domain of reading and writing.

4.2.3 Learning Strategies

Many types of learning strategies have been identified and examined within the body of SRL research (see Weinstein & Meyer, 1986; Zimmerman & Pons, 1986 for detailed reviews). Early research developed many various categories of strategies including critical thinking and problem solving; monitoring and evaluation; management of environment, effort and time; help and knowledge seeking, and many more. From the perspective of student success and achievement, the trend has been to identify strategies that can promote, predict or ideally lead to successful academic functioning (Paris & Newman, 1990; Nota, Soresi & Zimmerman, 2004; Schunk, 1993; Garavalia & Gredler, 2002; Zimmerman & Pons, 1986). In order to achieve this research has focused on examining students who are "successful" or high-achievers and "non-successful" or low-achievers (Ee, Moore, & Atputhasamy, 2003; Butler, 1998; Purdie, Hattie & Douglas, 1996; Pintrich & De Groot, 1990).

The literature has produced interesting findings especially regarding the connection of motivation, SRL and achievement. Students who are highly motivated (intrinsic) do not necessarily achieve higher results or grades, but they do use different strategies. Furthermore, this literature has provided the insight that strategy use does not necessarily lead to better achievement, but rather it is the knowledge of choosing appropriate strategies for specific tasks along with knowing when and where to use them that really influences student learning outcome. In light of these findings, research on strategy use has also resulted in many efforts and programs to teach effective use of learning strategies (Weinstein & Mayer, 1986; McKeachie, Pintrich & Lin, 1985; Hofer & Yu, 2003).

A practice in higher education arising from this research has been to implement supplementary courses on "learning to learn". Strategies viewed as fundamental to academic success are taught, in the hope that students will recognize the value of such strategies and apply them to the various subjects and disciplines of their specific programs of study. Above all, the general phases within SRL (see Figure 4.1) are emphasized so that students become aware of and actively engage in these phases while learning (even developing and creating new strategies within the phases that have more meaning and impact on their own success and achievement).

4.3 New Developments

In a review of self-regulated learning, Puustinen and Pukkinen (2001) present five models that have been validated and applied in ample empirical research. Their examination compares the models finding many similarities and a few key differentiating aspects. According to their analysis, a major difference between the models is the amount of emphasis placed upon motivation or strategy use. This difference can be better understood in terms of using a contextual approach (incorporating individual differences, emotions[8], environment, etc.) or an approach focusing on metacognition and strategy use (conceptions of actions and action). This difference is part of a larger debate in the literature regarding the significance of metacognition and its position within SRL research. In an issue of the Educational Psychologist (volume 30, number 4, 1995), six authors respond to Winne's (1995) article investigating inherent details of SRL (non-deliberate processes in learning activities).

The complexities of SRL can also be examined in terms of an aptitude and event, however successful measures of SRL events (including non-deliberate activities) have not yet been perfected. Consequently, the bulk of literature deals with self-report measures, interviews and field observances providing data that can be interpreted generally as SRL aptitude. Winne and colleagues are developing software that will trace the learning activity during a task, in order to gain a clearer picture as to what happens during the event of learning (see Winne, 1996; 2004, 2005; Winne & Perry, 2000; Winne & Nesbit, 2003 for detailed reviews).

Recognizing early the shift in education to provide learning opportunities that make use of computer and ICT environments, Winne (1995) among others called for continued research in SRL within environments that offer independent and flexible learning. Current efforts are engaging computer environments (Winne, 2005) and web-based learning (Dabbagh & Kitsantas, 2005) as well as hypermedia (Azevedo et al.,

[8] The affective or emotional aspects of motivation and their influence on SRL has been a key component of research conducted by Pekrun and his team at LMU in Munich, Germany (see Pekrun et al., 2002 for a review).

2005), however research in blended learning environments remains a developing field. Other research efforts are attempting to increase understanding of SRL constructs by using triangulation of methods (Butler, 2002) as well as design frameworks that involve more than one phase of data collection (e.g. time series [Schmitz & Wiese, 2006] and other forms of longitudinal research).

4.4 Summary

Research on SRL is growing and flourishing in educational settings providing valuable information about the processes of learning, especially in terms of the kinds of actions and efforts chosen and used for specific learning tasks and activities. Insights into the sustained motivation for learning can be gained by examining how learners think about their learning (metacognition), how they evaluate and monitor their performance, how they plan and set goals for activities, and how they implement and achieve these goals (what kind of action is taken).

Specific strategies are targeted in this current program of research, namely metacognitive strategies (planning, monitoring, and regulating) and resource management strategies (management of time and study environment, effort, and help seeking).

Planning, monitoring and regulating are strategies that have been covered well in previous sections on motivation and goals. Help seeking is a concept that has also been researched within educational psychology (see Slavin, 1992; Karabenick & Sharma, 1994; Webb & Palinscar, 1996; Karabenick, 2004). These studies assert that, contrary to initial assumptions regarding student learning, students who exhibit high levels of motivation and mastery/task goal orientation are often more likely to seek assistance. This suggests a challenge in addressing students who are not motivated and have performance goal orientations, for when encountering problems or confusion these students may not ask questions or seek assistance. Karabenick & Sharma (1994) present a helpful model of the help-seeking process which can be viewed as having many phases (see Figure 4.3). This model moves through the general processes starting with identifying a need for help (or the existence of a "problem") through evaluation of understanding or performance. This is followed by a decision making process to seek help: it uses a "cost-benefit" analysis relating to the outcomes of seeking assistance (will it actually alleviate the situation). If the student decides not to seek help, then learning continues using the resources at hand (persistence) or stops the activity/learning.

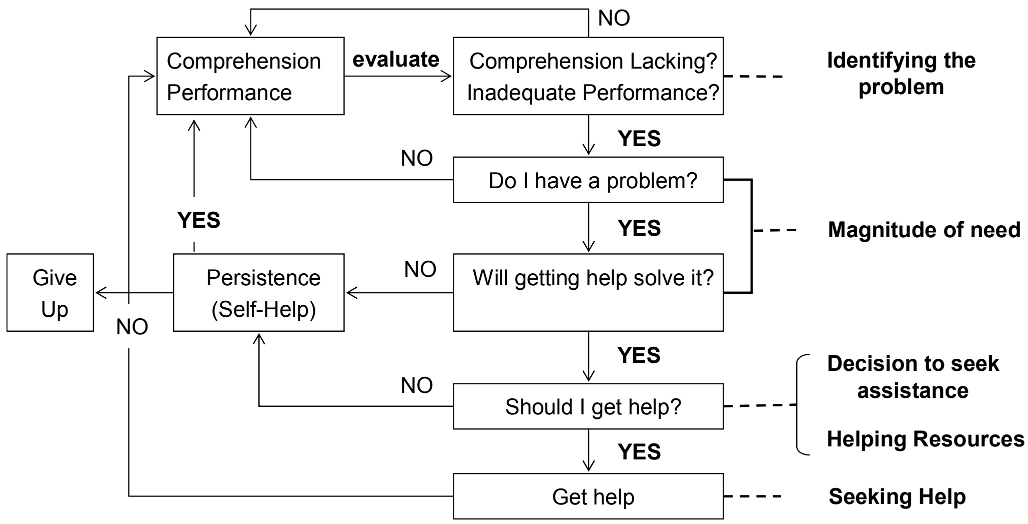


Figure 4.3. Multi-stage model of help seeking (adapted from Karabenick & Sharma, 1994)

Planning, monitoring, regulating and help seeking strategies are all key elements in the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich and colleagues (1991) which will be described in greater detail in section 8.5 applied in this current study.

This current program of research examines SRL from a motivational and strategy-use approach building upon previous research of Pintrich and his team (Pintrich & De Groot, 1990; Pintrich, Roeser & De Groot, 1994; Pintrich & Zusho, 2001). Such an approach is based on the assumption that motivational beliefs are successful in explaining student reported use of self-regulatory strategies (Wolters & Rosenthal, 2000). Through the use of student self-report measures as well as qualitative interviews, this study provides valuable information contributing to the field of SRL research in its focus on blended learning, triangulation of methods as well as a multiple-phase research design extending the collection of data over a longer period of time (2 semesters). Finally, this study examines the relationships between motivation, self-regulation and future-time perspective (including instrumentality and proximal/distal goal-setting), which has received little to no attention in the literature.

5 Blended Learning

5.1 Definitions

Under the main umbrella of distance learning and e-learning, this section presents an overview of concepts, terminology and applications that are found in the literature. The body of literature is growing, and with it uses of terminology that often relate to similar, although not always the same elements. Two terms have already been presented within the first line of this section: “distance learning” and “e-learning”. These terms are closely related, but they are not totally synonymous. The defining characteristics that distinguish these terms from each other are *geographical* (distance from the location of content/instruction origin) and *technological* (incorporation and/or use of information communication technologies – ICT). Programs in both formats are similar in many ways, however for distance learning use of ICT is not a defining aspect, and for e-learning location is also not a defining aspect. Yet, inclusion of both is necessary to provide a foundation for this current program of research recognizing the long and rich history of distance learning (without ICT – see Garrison, 2000 for a comprehensive review) and firmly establishing the connection to modern advances in distance learning that have adopted ICT (see Anderson & Elloumi, 2004 for a detailed review).

Online learning, viewed as a subset of distance learning (Anderson, 2004a), will be used as a general term for educational environments that make use of ICT, the Internet, and/or the Web in the following sections outlining the theoretical foundation for this current program of research. Using the term “online learning” provides a smooth transition into blended learning (a new development in education using the

Internet and onsite classroom formats), which will be presented in greater detail at the end of this section.

5.1.1 Terminology

Facilitating easier understanding and recognition of ICT terminology, a list of major terms and concepts used in this study is presented in the following table (see Table 5.1). It is by no means comprehensive; it is intended to be used as a "tool" for promoting access into and understanding of ICT related topics (see Schmidt, 2004; Jalobeanu, 2003). Slang, slogans and colloquialisms have been avoided, however, since some terminology appears to be regionally and culturally influenced, it is not always possible.

Table 5.1. Terminology used in online learning

Term	Definition
WWW	world wide web (a hypertext-based information and source system for the Internet
http	***h***yper***t***ext ***t***ransfer ***p***rotocol
Link	a connection between two units of information in a hypertext-based system
URL	uniform resource locator
ftp	file transfer protocol (used in the downloading of data)
CAI	computer assisted instruction
CMC	computer mediated communication
CBL	computer based learning/training/instruction
WBL	web-based learning/training ("T" or "I" instead of "L")
CSCL	computer supported cooperative learning

Internet	an association of world wide computer networks involving thousands of computers that communicate using Internet protocol (IP)
OLE	open learning environment
IRC	Internet relay chat – often called just CHAT
Email	electronic mail

A more detailed history of online technology and a basic description of key functions on the Internet will be presented in section 5.3 of this chapter.

5.2 Education and Technology: A Brief Introduction

Education and technology have had a long history as influential technologies have developed that affect change in society – especially in how people communicate with one another and interact with knowledge. Curran (2001) in a review of the development of online learning observes that technological advances have not necessarily influenced educational didactics (underlying scientific principles of teaching, learning and instruction) or even educational outcomes (achievement) as often is expected. Recent advances of film, radio, and television have seldom been used in ways that transform learning and education, but certainly they have been used as "educational tools". Many other examples come to mind, from photo-copiers and calculators, to overhead projectors and multi-media digital projectors (commonly called "beamers") – all of these are influential, yet not in a didactical sense.

If a transformation does occur in education through technology, it is more often through the impact of a technology on societal change[9] (economical, social, political, etc.). Curran (2001) refers back to the introduction of printing and movable type (15th century) which affected education through the long-term effects of increasing literacy. Säljö (2004) focuses on this aspect of transformational change in society through key technological advances, maintaining that pedagogical practices are indeed influenced and transformed – however, not in a direct linear connection to the improvement or enhancement of learning.

According to Säljö, major technological advances lead to transformations that are far more profound, transforming "the manner in which we work, communicate and cooperate with each other, enjoy ourselves, pay our bills, maintain relationships and perform a range of social activities" (p. 492). Consequently, the way people learn is also transformed. The example of printing technology is also referred to by Säljö, who views the transformative aspect of this advancement to be evident in society and also in education. As the written word and books replaced humans as sources of information (e.g. the book of law replaced the person who "knew the law by heart") learning became less of memorising and more of interpreting. From this approach, the importance is on how learners act in various settings, where to study means:

> "to engage with the tools of communication that are prominent in a society at a particular point in time. The new media seriously challenge the communicative practices of schools and

[9] There is a trend in the literature to label this type of influential technology as a "disruptive technology" (see Hedberg, 2006 for a more detailed review of this terminology).

> universities, since the communicative ecology of our society changes" (p. 493).

Säljö (2004) is convinced that digital technologies present a major technological advancement that requires (will continue to require) educational transformation in order to fully reap its benefits. The process of transformation is long, and currently we find ourselves still in rather early stages. Technological advances are happening quickly, whereas educational reform is progressing at a much slower pace.

Before a more detailed examination of the development of online learning, it is important to review developments also connected to the relationship between education and technology, namely learning environments.

5.2.1 Learning Environments

In order for educational technologies to truly influence and affect instruction, learning activities need to be considered in a multi-dimensional and contextual approach rather than one that only addresses teacher-student interaction. A multi-dimensional and contextual approach, such as social cognitive theory, recognizes interactions between learner and instructor, but within a framework that incorporates other interactions (content, task, classroom, etc.) which are considered to be valuable sources of information impacting the processes in learning and instruction. Viewing an instructional situation as an "environment" is a successful metaphor allowing the inclusion of multiple factors and dimensions. Most research in learning environments has focused on the "classroom context" (Shuell, 1996; Turner & Meyer, 2000). This type of research examines teaching and learning in combination, instead of as separate constructs (common in educational research before the mid-1990s; see Shuell, 1996 for a review).

The rationale for a contextual approach (whether it be classroom context or learning environment) is based on four main arguments (Turner & Meyer, 2000): 1) research on effective teaching needs to include students' psychological reactions to the instructional context; 2) instruction and learning differ by content area (specific domain or discipline); 3) advances in educational theory are also adopting contextual approaches (e.g. social cognitive theory, social constructivism, etc.); 4) in order for educational psychology to have practical relevance, research needs to examine cognitive, affective, social, and motivational aspects of learning from instruction.

Recently, instructional design theories have increased in popularity due to ICT developments that allow programmers to design and simulate a "classroom" environment within a computer "program". However, the theoretical foundations influencing how the learning process is understood are of great importance before the "design" phase begins – even the notion of designing instruction is an expression of a deeper belief in how learning occurs.

5.2.2 New Didactics and Pedagogical Development

All aspects of educational practice, including didactics and teaching methods, are influenced by foundational beliefs relating to how learning and education in general occurs. The term "didactic" has had many different definitions that vary according to the purpose of its use (e.g. teaching, learning, instruction, curriculum design, etc.). Klisma (1993) offers a comprehensive discussion of didactics in education, and refers to an effort of Memmert to unify existing definitions under a single heuristic (as shown in Figure 5.1).

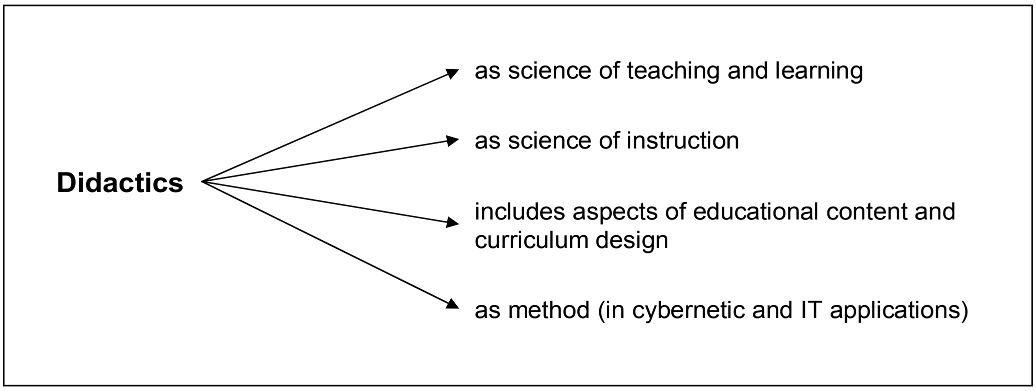


Figure 5.1. A unified definition of didactics (adapted from Klisma, 1993).

As described in the previous chapter on motivation, behavioural and cognitive psychology are influential schools of thought that have had direct impacts on educational practice over the last century. Within the study of instructional design and learning technology, another school of thought is added – constructivism. Terminologies used to identify and categorize these "schools of thought" vary throughout the literature (Gagné & Medsker, 1996; Reigeluth, 1999; Wilson & Madsen Myers, 2000; Seel, 2001). It is important to examine the impact these perspectives have on the design of learning environments since the specific environment used in this current program of research has been influenced by previous developments from these theories.

Regarding digital learning environments, these theories will be briefly examined from the perspective of teacher/student roles. Scope of instruction, quality, and type of learning activities are determined based on how the role of teacher and student is defined. According to Mandl and Reinmann-Rothmeier (2001) the two extreme or "purist" positions represented by behaviourist[10] and constructivist theories are important to consider before measures and programs are developed to address shortcomings and problems in education. Cognitivist learning theory lies somewhere in the middle between the other two extreme positions (Rovai, 2004), and the use of a "continuum" is helpful to distinguish between these theories, it is important not to ascribe an evolutionary valence to this continuum – neither theory in general is better nor worse than the other; each has advantages in certain situations that can assist in offering effective and appropriate instruction to learners.

5.2.2.1 Behaviourist Instructional Design

Design of learning environments from a behaviourist perspective adopts a linear approach to learning (places a heavy emphasis on outcomes, namely learner success) where the teacher/instructor is the central figure in the learning process. The student/learner is a passive recipient of the knowledge/expertise imparted by the teacher/instructor. Learning environments based on this approach are characterised by a sequencing or "scaffolding" of knowledge/information – a step-by-step approach to acquiring new knowledge.

The linear quality of instruction using this approach is illustrated well using the example of B.F. Skinner's Programmed Instruction (as cited in Klisma, 1993; Mandl & Reinmann-Rothmeier, 2001). This approach uses a progression of instructional events that are repeated as often as necessary until the relevant knowledge has been successfully learned (based on the belief that the concepts of stimulus and response

[10] Although Mandl and Reinmann-Rothmeier (2001) use the term "cognitivism" as the purist left-position, I have chosen to use "behaviourism" since it is more easily differentiated from constructivism.

sufficiently explain behaviour, in an educational context "behaviour" is synonymous with learning (or non-learning) activity. There are many other aspects to this approach that make it effective in some situations (see Table 5.2).

Table 5.2. Behaviourist insights for designing learning environments

Insight	Description
Learn by doing	Active task engagement is the best for learning.
Taxonomies	Learning outcomes can be differentiated by type and complexity.
Conditions of learning	For each type of learning, conditions can be identified that lead to effective learning (e.g. to accomplish *X* learning outcome, apply or arrange for *Y* conditions).
Behavioural objectives	Instruction should be based on clear, behaviourally specified learning objectives.
Focus on results	Measurable behaviours are the best index of true learning outcomes.
Alignment	Good instruction exhibits an alignment or consistency between learning objectives, instructional strategies, and assessment strategies.
Task decomposition	Breaking down complex tasks into smaller more manageable tasks to be mastered separately.
Prerequisites	Identify sub-tasks required for larger tasks to create a parts-to-whole instructional sequence.
Small successes	Success with sub-tasks is reinforcing, which increases motivation to continue.
Response-sensitive feedback	When performance is not correct, specific information should be conveyed concerning what was wrong and how to improve.
Science of instruction	Education is an applied science or technology (precise and systematic); through empirical inquiry, principles are discovered and applied.
Performance support	Support job performance with job aids, help systems, and feedback and incentive systems.

Direct instruction	Clear directions, prepared presentations, suitable examples, and relevant practice tasks for transfer.
Pretesting, diagnostics, and placement	Instruction should branch into alternative treatments according to prior skills, motivation, and other critical variables.
Transfer	In order to transfer a skill from one task to another, students need practice.

(based on Wilson & Madsen Myers, 2000, p.62)

Table 5.2 is an adapted and reduced version of a table found in Wilson and Madsen Myers (2000), which presents an overview of the main behaviourist principles or insights that influence this approach to the design of learning environments.

5.2.2.2 Cognitivist Instructional Design

Cognitive theories of instructional design focus on internal processes involved in learning rather than external displays of behaviour. Models are developed to describe the internal workings and processes inside the brain, especially relating to the storage, retrieval and transfer of knowledge into long-term and short-term memory (a very basic representation is presented in Figure 5.2).

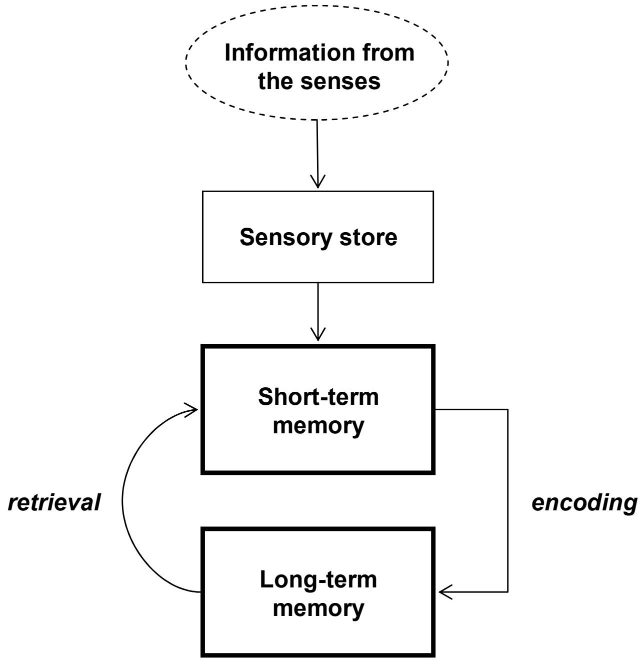


Figure 5.2. Types of memory and basic pattern of flow (adapted from Ally, 2004)

A basic premise of cognitive theories (e.g. information processing theory, cognitive-load theory, etc.) is that short-term memory (also referred to as "working memory", since this kind of memory is used while completing immediate tasks and activities) is limited in capacity; however certain strategies can exercise this function to strengthen it and increase it (rehearsal and "chunking" of information into smaller units). Information is received from the environment and passes through the sensory store (it is coded into types of information relating to the five senses). It then continues into the short-term memory where it is processed further in two main functions: preparing of information for storage in long-term memory through a process called *encoding*, and initiating the *retrieval* of information that has already been stored in long-term memory.

Wilson and Cole (1996) in their overview of cognitive teaching models observe that presenting extensive practice exercises to facilitate understanding and comprehension of a principle, concept or rule can be seen as detrimental to the students' understanding if cognitive load is considered. Due to the limited capacity of short-term memory, instructional design needs to ensure that learners are not overloaded with redundant tasks that might inhibit higher-order functioning. Learning and studying from "worked examples" (answers and detailed solution strategies are provided) until sufficient mastery is obtained can be helpful instead of using conventional practice problems (e.g. end of chapter exercises) immediately after introducing new material (Sweller & Cooper, 1985). This aspect of memory-load, as well as other cognitivist design principles are presented in Table 5.3 (it has been reduced and adapted from a table originally found in Wilson and Madsen Myers, 2000).

Table 5.3. Cognitivist principles for designing learning environments

Principle	**Description**
Stages of information processing	Information is processed in stable, sequential stages (machine metaphor for human thinking and behaviour – modeling and simulating).
Task modeling	Tasks can be modeled through cognitive task analysis using flowcharts and other sequential representations.
Attention	Attention is generally directed toward novelty or changes in the environment (anxiety or boredom occurs when there is too much, or not enough novelty, respectively).
Selective perception	Goals, expectations, and current understandings colour our perception and shape our cognitive structures and responses.
Memory load	Problems arise when instruction taxes the limits of working memory (approximately 5-7 chunks of information at a time is maximum). Memory sensitive strategies include sequencing (simple to complex), allowing reference aids, and progression in small steps with frequent repetition and elaboration.
Kinds of knowledge	There are two fundamental types of knowledge: *Declarative* (factual) – stored propositions in semantic networks; *Procedural* (how-to) – stored as IF-THEN rules and pattern-recognition templates.
Skill compilation	Through repeated practice, skills become compiled or routinized. Several procedural steps are combined, making performance easier and leaving cognitive resources available for other parts of a complex

	task. Automaticity occurs when a second, simultaneous task can be performed without noticeable impairment of the first task.
Meaningful encoding	Information is stored in long-term memory in ways that make it accessible for convenient retrieval. Two strategies are: *Chunking* (information is organised into smaller units); *Elaboration* (making links between what is learned and existing prior knowledge through active thought and reflection – more links; deeper meaning.
Experts vs. novices	Experts are different than novices: more domain-specific knowledge; more refined domain-specific performance routines; a commitment to steady periods of deliberate practice (reflective practice with the specific intent of skill improvement).
Conceptual change	People make sense of their worlds by reference to schemas, mental models, and other complex memory structures Instruction should help learners assimilate and accommodate new information into existing schemas and cognitive structures.

(based on Wilson & Madsen Myers, 2000, p.64)

5.2.2.3 Constructivist Instructional Design

Design of learning environments from a constructivist perspective adopts a more holistic/contextual/interactive approach (emphasising the process of learning and interaction across multi-dimensions) where the student is the central figure in the learning process. The teacher/instructor takes an active, although secondary, role as guide, coach, and facilitator of the learning journey – the student actively seeks knowledge possessing to a large degree independency and control of learning actions.

There are many examples of constructivist learning environments, and one that is most often presented[11] is anchored-instruction through the Jasper Woodbury series from the Cognition and Technology Group at Vanderbilt (CGTV, 1992). Anchored-instruction presents the learning material in an authentic problem-based situation, which

[11] Two very good overviews of the Jasper Woodbury series are available in Hannafin, Land, & Oliver (1999); and Mandl & Reinmann-Rothmeier (2001).

learners identify, define and ultimately solve on their own. Many other theories and models have been developed and adapted by using similar concepts and principles. Seel (2001) presents arguments for unifying constructivist terminology under the label of "situated cognition", which even acknowledges its roots in cognitive psychology (Rovai, 2004) as well. Wilson and Madsen Myers' (2000) table of design principles has been adapted and reduced in Table 5.4, outlining the key elements of situated cognition (constructivist) for designing learning environments from this tradition.

Table 5.4. Constructivist principles for designing learning environments

Principle	**Description**
Learning in context	All thinking, learning and cognition are situated within particular contexts; there is no such thing as non-situated learning.
Communities of practice	People act and construct meaning within communities of practice through discourse.
Learning as active participation	Learning is seen as a dialectical process of interaction with other people, tools, and the physical world. Cognition is tied to action – either direct physical action or deliberate reflection and internal action.
Knowledge in action	The development of knowledge and competence involves continued knowledge-using activity in authentic situations (similar to the development of language).
Mediation of artefacts	Cognition depends on the use of various tools (mainly language and culture) and constructed environments.
Interactionism	Just as situations shape individual cognition, individual thinking and action shape the situation. The reciprocal influence constitutes an alternative conception of systemic causality to the more commonly assumed (behaviourist) linear object causality.

(based on Wilson & Madsen Myers, 2000, p.71)

As mentioned previously at the beginning of this section, the power of computer and ICT to create and design learning environments that can conceivably replace or simulate the classroom is a remarkable development, and one that has serious consequences and impact on teaching, learning and instruction.

5.2.3 Instructional Design Theories and ICT environments

The design and development of digital learning environments presents intriguing and often very complex factors that need to be considered. Careful consideration is necessary to determine the appropriate and most effective approach. – is the environment going to function as a replacement electronic teacher/instructor/tutor (many CD-ROM learning programs function in this way), or will it function as an environment of discovery and exploration (two good examples are Grabinger's [1996] REALs, and Hannafin, Lehmann & Oliver's [1999] OLEs).

To summarise this brief section on instructional design theories in ICT environments, the notion of multi-dimensionality is appropriate. The complexities of learners and participants, as well as the incredible opportunity for rich, in-depth and versatile instruction offered by ICT, demand careful consideration of design approaches. Selecting a single instructional design theory will never provide effective solutions for all applications. The pedagogical paradigm shift (Peters, 2000) from environments using linear and sequential knowledge structures to nonlinear and nonsequential knowledge-bases need not be so dramatic or "disruptive". According to Ally (2004), an either-or position is too narrow and limits the potential for effective instructional environments. He is in favour of accentuating the advantages from all of these approaches in order to fully realize instructional design:

> "Behaviourist strategies can be used to teach the "what" (facts), cognitive strategies can be used to teach the "how" (processes and principles), and constructivist strategies can be used to teach

> the "why" (higher level thinking that promotes personal meaning and situated and contextual learning)" (p. 7).

The efforts of imitating reality in a successful representation is an elusive goal that is not always possible to reach, but it is one that is very attractive to digital programmers who believe in the products and tools they work with, none perhaps more so than web-based and Internet technologies.

5.3 Development of Online Learning

Since the onset of paper-based distance education that started already in the late 1800's (Garrison, 2000; Jalobeanu, 2003), technological advances in ICT have greatly influenced the acquisition of knowledge and expertise in such distance programs. Jalobeanu offers an informative timeline of key developments in terms of computers and ICT, in the progression from hypertext to interactive links on the Internet via the world wide web (www).

5.3.1 Nodes, Networks and Links

The term "hypertext" was introduced in the mid-1960's by T.H. Nelson[12] and has since then been accepted in literature to mean a "nonsequential, nonlinear method for organizing and displaying text" (Jonassen, 2000, p. 208) enabling readers to determine their own engagement points with the information. Hypertext is very

---

[12] Nelson's (1965) original definition of hypertext was simple and effective: "a body of written or pictorial material interconnected in such a complex way that it could not conveniently be presented or represented on paper" (p. 96). However, the inclusion of a nonlinear quality allows for a much easier operation of the concept in reality.

different from normal text which is linear and restricted in use (e.g. languages such as English that must be written and read from left to right or from beginning to end). Hypertext is seen to have great potential in education due to the assumption that reader-imposed organization and structure of information is more meaningful than author-imposed.

Information does not just come in a text format, and computers have assisted in expanding the different types of media used in learning environments. Multi-media is simply the integration of more than one medium (text, graphics, sound, etc.) in the presentation of information. Where hypertext is the linking of words or phrases to other words or phrases in the same or another document, hypermedia is the linking of multimedia documents (Fahy, 2004). A node is the basic unit of information in hypermedia, and the nonsequential, nonlinear characteristics are still present allowing the user/reader to access any node in the hypermedia knowledge base (or systems as in Hypermedia systems – HMS – or Multimedia systems – MMS; see Ecklund, 2006) depending on what is most interesting at any time, and in any order. Nodes are accessed by following (opening) links that connect them, and the system of nodes and links creates a network of ideas in the knowledge base (Jonassen, 2000). In a learning environment operating in this context, the act of learning involves exploring the information in a particular sequence defined by the learner, and specific jargon (or metaphors) has developed surrounding these environments (Peters, 2000): browsing, navigating, surfing, searching etc. are terms used for accessing information (in what in many instances is a “sea of information” that is often overwhelming). In the Internet via the WWW, hypertext/media systems that are created in a common language (HTML, XML, etc.) are the means for information sharing. Downes (2001) explains clearly how document sharing occurs in his description of learning objects that are free and accessible to anyone.

The capability of computers to store and offer massive amounts of information in a networked system of knowledge contributed to the creation of the Internet. Schmidt (2004) offers a comprehensive historical overview of how computers have made distant learning via the WWW possible – from the first digital calculator created by Blaise Pascal in 1642 to the giant ENIAC computer from Eckert, Mauchly and Goldstein in 1946. However, the idea of creating a network of computers was not realized until 1969 when the US military connected four computers (ARPANET – Advance Research Projects Agency Network) in order to improve methods of communication during the cold war – the beginnings of what we know today as the Internet.

As the detailed timeline from Jalobeanu (2003) illustrates, it did not happen overnight, but the network of computers grew during the 70s and 80s, especially after the ARPANET split into separate military (MILNET) and academic (BISNET or CISNET) counterparts using an innovative communication protocol (TCP/IP), and the term "Internet" was coined. Computer technology also developed rapidly decreasing the amount of space required by computers and increasing their speed, multi-functionality, and storage capacity. In 1989, Tim Berners-Lee introduced a new protocol that allowed scientists to access research documents via networked systems of the European Particle Physics Laboratory (CERN), leading to the creation of the WWW which was officially launched in 1991. Since then developments have continued, and in 1996 it was estimated that 12 million computers were connected to the network. Curran (2001) indicated reports of 95 million Internet users in Europe alone with over 400 million worldwide at the end of 2000: compared to the 15 years it took for TV and radio media to reach an audience of 50 million, the Internet accomplished the same in just over three years. Due to the magnitude of the competitive market for computers and their hard/software as well as Internet products, the sharing of free and open-source materials is not always possible. Downes (2001) encourages a return to the collaborative spirit that was present in early stages of network developments, and outlines the extremely high costs facing education if every institution is forced to "reinvent the wheel" course by course, lecture by lecture.

5.3.2 Online Learning – A Country Overview

The OECD (2005) policy brief on e-learning in tertiary education provides an overview of the current status of e-learning. While it is largely accepted that e-learning programs are necessary and should be implemented, institutional provision of fully online programs is under 5% of total enrolments. Yet the report adds that between 30-50% of students have participated in at least one course with significant online presence. These results are indicative of the overwhelming belief held by policy makers in the benefits of e-learning (Mac Keough, 2001; Debande, 2004). Regardless of its "top-heavy" promotion and implementation, e-learning in all its variations is receiving massive amounts of funding in order to meet targeted expectations of national programs and initiatives (see Mac Keough, 2001 for a detailed country overview). The OECD policy brief outlines some of the major rationales for initiating e-learning in higher education, and consistent with levels from 2002, 2004 levels indicate that for most insititutions the main rationale is to increase the opportunities for learning and flexibility (see Figure 5.3).

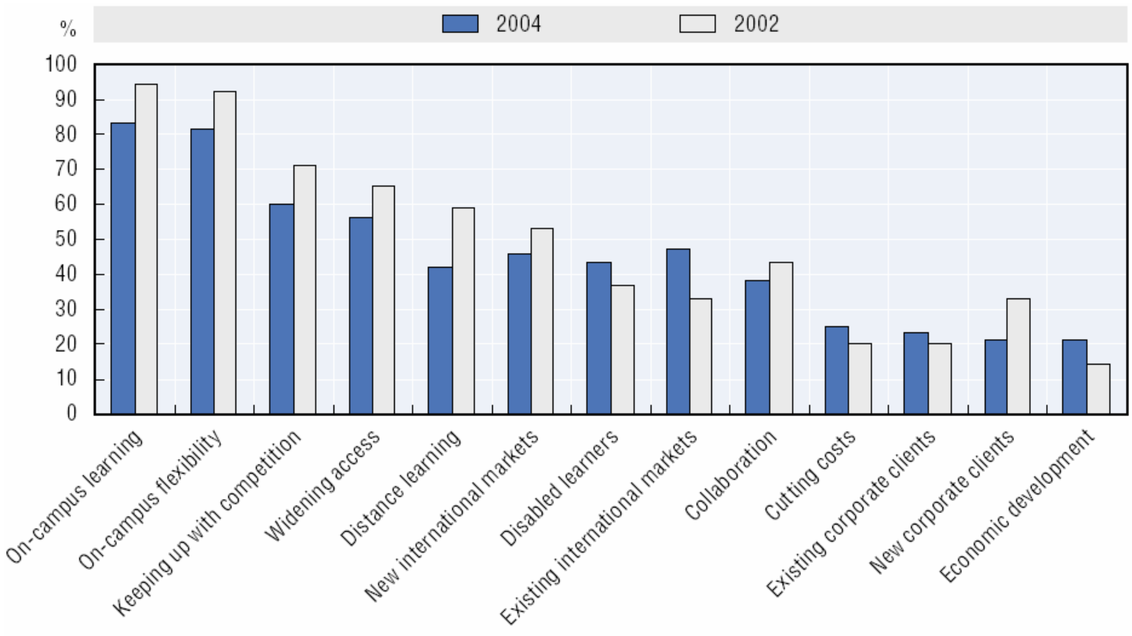


Figure 5.3. Comparison of "Key Rationales" in institutional online learning strategies in 2004 and 2002 (OECD, 2005).

Strong optimism and beliefs in the value of online education in the US has been proven in terms of budget and enrolments, and its strong presence in the online market increases the influence it has on other developing markets in education. In an overview of online learning in higher education in the US (Allen & Seaman, 2005), it is reported that most higher education institutions include online learning as a major proponent of long-term strategy (56%; up from 48% in 2003).

In China, online learning in higher education has a wide range of uses, but mostly as supplements to regular course offerings (Lee, 2004). General access to the Internet has been increasing (estimated at 59.1 million accounts in 2003), but Lee mentions that incorporating online education will require significant cultural adaptation, since the computer itself is a Western phenomenon (Thurber, Pope & Stratton, 2003). If the Internet and its applications in education are to succeed, she recommends that "the Chinese government reform the current test-driven educational system, provide better technological training for teachers and students, have appropriate technological resources for students in the less-developed areas, and implement more quality WBI that is conducive to constructivist learning" (p.104).

In Germany, the development of online learning has been slower, although it offers great potential for further expansion. According to Kappel, Lehmann & Loeper (2002), one reason for this could be the absence (or at least minimal) tuition fees, a highly bureaucratic and federally controlled educational system and a slower adoption of more state-of-the-art Internet technologies[13] (such as Broadband). Yet in 2005/2006 major changes have been taking place, (imposition of tuition fees, and a major political reform that shares control of higher education institutions with regional governments, especially in terms of finances, strategy and development), and it remains to be seen exactly what the ramifications of such changes will bring to higher education and, in particularly, online learning (BMBF, 2006).

5.4 Online Technology and Media

In any online learning environment, the possibility for nonlinear and nonsequential pathways through the knowledge content increases, and careful choices need to be made by both learner and instructor regarding the acquisition of this new knowledge. Adopting the framework for learning presented by Bransford, Brown & Cocking (1999) to online environments, effective learning occurs when all four factors converge (Anderson, 2004a): learner centered, knowledge centered, assessment centered and community centered.

---

[13] Debande (2004) makes a critical observation that the type of connection to the Internet in Europe has been dominated by ISDN and standard dial-up systems. Broadband and other faster systems offering a higher information content (such as DSL) are progressing, but not at the same pace as in North America.

Jonassen (2000) observes that in technologically enhanced learning environments there is a temptation to focus only on the technology in the learning (learning *from* technology) process, however such a focus limits learning possibilities; it is much better to adopt a focus that promotes learning *with* technology (in this way technology is a tool supporting learning processes from both sides of the equation – teacher and learner). After more than a decade of online learning, it has become accepted that simply by implementing or presenting ICT options in a learning environment does not guarantee effective learning (or instruction) – how it is used and applied are the key factors in its effectiveness.

Innovative online technologies are advancing at an extremely fast rate, and what was once inconceivable or simply too difficult, is now a viable reality (e.g. online video conferencing, or even email). Considerable advances have occurred over the last few years that have shortened the synchronous/asynchronous gap. Figure 5.4 illustrates Anderson's (2004a) depiction of various ICT formats used in web based learning examined in terms of interaction and flexibility (independence of time and distance). Face-to-face instruction has the highest level of interaction but is low in flexibility, while traditional correspondence courses are highest in flexibility and lowest in terms of interaction.

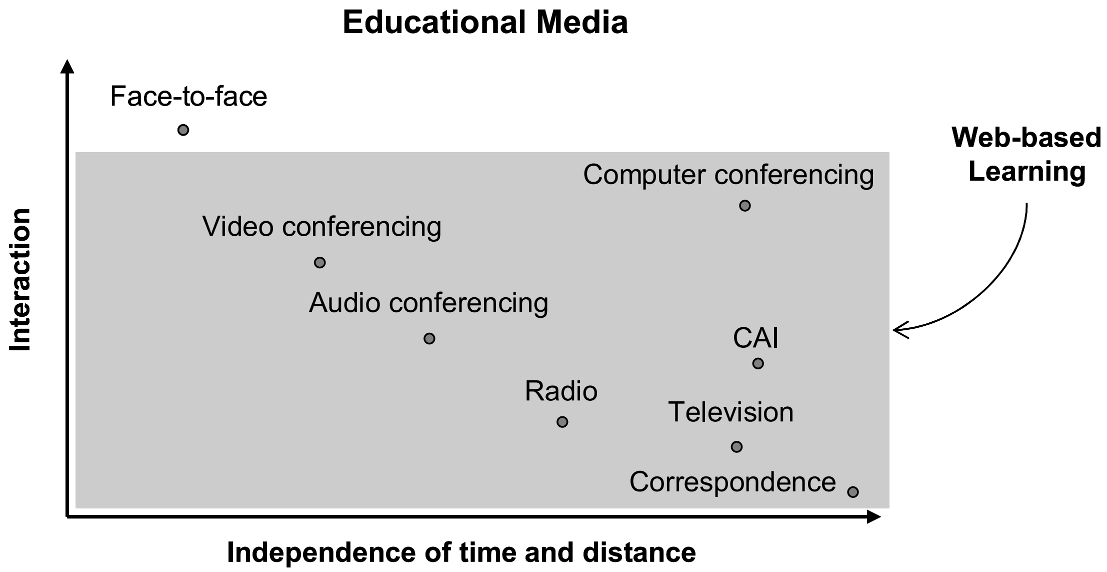


Figure 5.4. Educational media in Web based learning (Anderson, 2004a)

Many new technologies used in online learning allow for almost the same synchronicity that face-to-face interaction offers. This section will provide a brief overview of a few of the possible online learning technologies that have significantly advanced the field (see McGreal & Elliott, 2004; Downes, 2001 for more in-depth examples and exploration of innovative technologies). A few examples will be briefly examined that focus on communication and reflection (chat, blogging, instant messenger, etc.), knowledge-sharing (learning objects and file sharing), and data transmission (streaming audio and video).

Internet relay chat (IRC), commonly called “chat”, has existed for some time in text form which is basically synchronised written communication (synchronous email). Recently audio chat has become available, and point-to-point audio connections can be made between almost any two computers on the Internet. It is also possible to connect to telephone over the Internet using voice over Internet protocol (VoIP), which is becoming very popular due to extremely cheap or even free calls. McGreal and Elliott

(2004) see such technology as an asset to online education as it can be used to deliver synchronous teaching using an electronic blackboard along with VoIP in a technique called “audio-graphic teleconferencing”. Web whiteboarding is another variation that uses similar technology more conveniently as a single tool allowing both teachers and learners to create, manipulate, review and update graphical information online while at the same time participating in a lecture or discussion. Such technology is perfect for online brainstorming and outlining activities.

Instant messaging is similar to chat and email (text-based) in that it involves sending messages electronically from computer to computer (like chat) that are stored on a central server (like email). However, it is a dynamic technology facilitating group communication by showing all group members when a user logs on resulting in close to synchronous text exchanges (McGreal & Elliott, 2004). Other features are its ability to incorporate voice chats, attachments, and its transportability – each user can access ICQ from multiple workstations (at home, or at work, or any PC that has internet), but will only receive information on the active computer. As in chat, its strength lies in its ability to facilitate immediate communication and interaction between students, teachers, peers, tutors, etc.

Two other forms of communication tools that have recently developed are weblogs (blogs) and e-portfolios, and while these forms are not attempting synchronous communication, they do enhance opportunities for more lengthy in-depth reflection that can be in either an individual or group mode. Essentially, blogs are websites that are organized by time (Brandon, 2003), consisting of commentary items that are posted in reverse chronological order. They are easy to use requiring little technical know-how since they are template-based, browser-edited and rely on database information

(Nückles et al., 2004). Blogs function effectively for knowledge sharing and community interaction since entries can be posted directly onto the web while browsing the web, without extra HTML-coding requiring assistance from programmers and designers. Mason (2006) describes the use of blogs in higher education courses at the Masters level, and Schroeder (2003) presents a more informal use in faculty and staff newsletter updates on literature, news, and current events that are thematic in nature. In both cases blogs are successful tools in educational environments for encouraging reflection, sharing knowledge and building and maintaining a networked community on the Internet.

E-portfolios extend the aspect of reflection, but concentrate more on the individual. There is an interactive element, but that is an optional element that can be added if the e-portfolio is intended for multiple reviewers (e.g. instructors, tutors, peers, etc.). Mason (2006) describes an application of this multimedia tool that highlights its useage in assessment activities. Similar to the paper-based portfolio, the e-portfolio is a multimedia tool that facilitates the collection and selection of items, and due to its hyper-functionality is much easier to handle than the paper-based predecessor (users can hold, organize and reorder contents faster and easier, and hyperlinking makes connections between multi-layers of experience possible along with continuous updating features). For educational purposes, e-portfolios have mainly been used in assessment, operating on the principle that “reflection over time increases a learner’s ability to make sense of concrete experience” (p.129). Mason calls for further exploration of e-portfolios and is confident in their benefit to learning environments.

Learning objects are an innovative technology with vast pedagogical possibilities and are considered to be one of the few truly revolutionary approaches to online learning (OECD, 2005). Wiley (2000) offers a detailed review of learning objects examining the characteristics that make them so appealing in higher education – their potential for reusability, generativity, adaptability, and scalability. The OECD (2005) defines learning objects as "an electronic tool/resource that can be used, reused and redesigned in different contexts, for different purposes and by different academics/actors" (p.4). Furthermore, learning objects involve fully complete and discrete lessons, learning units and/or courses (Wiley, 2000; Anderson, 2004a); very different from knowledge objects which are supplemental items at the lesson level.

Downes (2001) outlines a convincing argument for the costs and benefits of promoting and encouraging learning objects in higher education (why spend extra money on developing course when they can be shared, revised and expanded via the internet), and describes how hypertext language is the vehicle for designing and sharing learning on the Internet via the WWW. Learning object technology requires the use of open standards of vocabulary that are compatible and accessible across software systems (HTML; XML) in the creation of Internet documents (closed standards are those documents that are limited to specific software systems) facilitating the reading, printing or transmitting of documents by various programs and devices. Due to heavy competition in ICT markets, as well as an economic boom in the education market, free and open-source materials are not always possible or available (at least legally available). Downes is a strong supporter of open technologies that can be shared and used freely among users, and encourages a return to the collaborative mentality that was present at the beginnings of networked systems.

Other technologies are available that facilitate faster and easier access to online documents making learning objects all the more attractive. Contents on standard websites require constant browsing for updates, developments and/or changes; however "push" technology involves channel-based delivery that is "pushed" directly to the user's desktop (McGreal & Elliott, 2004). Channels can be modified relating to interest (personal screening and selection of sites) and subdivided into folders containing further links. Push technology and data channels can be used to feed inexpensive and current news and information from relevant sites to instructors and students for learning and research purposes. File sharing offers another innovative tool for knowledge and information sharing between users that is not restricted to location, connection speed or a central server. Access to knowledge is promoted at a group level that is extremely valuable for team-projects, coursework, as well as collaboration at program or institutional level (research consortia, communities of knowledge, etc.).

A barrier that has been hard to overcome with online learning deals with Internet connection speeds and the capability of transmitting large quantities of information without losing quality (this has especially been a problem with large sound, animation and video files). Streaming media technology facilitates the transfer of audio and video files in a stream-like manner (McGreal & Elliott, 2004). The advantage of such technology is that the user does not have to wait until the transfer of data is complete – it can be used as soon as data starts arriving at the receiving computer. The data is converted into a format that is sent in a continuous stream of small segments which can immediately be played; while the first data is played, the other incoming data is downloaded. Streaming technology is not dependent on fast connections (although typically faster connections provide greater quality, especially with video files) which is very important for allowing equal access to information[14]. Streaming audio presents many exciting possibilities in education such as prerecorded lectures, newscasts, broadcasts, interviews, projects, and any other type of audio interaction. Streaming video offers equally attractive options, and if used to its full potential could help to overcome the “page-turning” phenomenon of many online and virtual courses (McGreal & Elliott, 2004).

5.5 Differences Between Online and Traditional Learning

As discussed in earlier sections, the real difference between face-to-face and online learning environments is the “distance” factor requiring different roles and skills for learners (Kerr, Rynearson, & Kerr, 2006; Dutton, Dutton & Perry, 2002; Jelfs & Colbourn, 2002a; Macdonald, Heap & Mason, 2001) and instructors (Wilson, 2004; Lim & Barnes, 2002; Jelfs & Colbourn, 2002b; Knezek & Christiansen, 2002). Other differences that are often mentioned in this literature are interaction, flexibility and control. *Interaction* plays a major role (teacher↔students and student↔peers), but technological advances are rapidly decreasing the gap between synchronous and asynchronous learning environments. Another major difference is the *flexibility* factor. From a course perspective, flexibility influences scheduling of important dates (due dates, etc.) and when learners participate in “classroom” time. From a learner’s perspective, flexibility mainly relates to engagement with learning material, either dealing with time (when learning occurs) or with content (what is learned). From a teacher’s perspective, flexibility relates to both time (considerable instruction “time” is

[14] Cutting-edge technology often comes with a high price, and leads to the phenomenon of what today is called the “digital divide” (OECD, 2005) and will be discussed in greater detail in subsequent sections.

spent in the phase of course development) and learner support (providing feedback, answering questions, facilitating student interaction with online learning material).

Flexibility is closely related to *control* – in typical face-to-face environments learning is teacher-controlled; in online environments learning is typically more student-controlled. These factors are similar to the distinguishing aspects between the major schools of learning theories (behaviourism, cognitivism and constructivism), however just as Ally (2004) recommends that multiple theories be applied to achieve effective instruction, in reality the differences between face-to-face and online learning environments (other than distance or location) are difficult to ascertain because of the varying degree of theoretical application and implementation in practice.

There is a bulk of research comparing the two extremes on the continuum (Twigg, 2001), and on average results indicate no significant differences[15]. This should be of no surprise, since the desire to determine which type of learning environment is better or worse is more a question of pedagogy than of technology (Phipps, 1999). Twigg (2001) includes an appropriate quotation used in the field of horse-racing: "It's not how fast you run; it's how you run fast" (p.4). When considering the effectiveness of instruction, it is much more revealing to examine the question "how" than "what", which makes sense for online learning as it facilitates learning with, not learning from the technology (Jonassen, 2000; Milliron & Miles, 2000).

[15] Russel published findings in 1999 that claimed there was "no significant difference" between traditional onsite and distance online formats. Since then his research has continued and is currently still actively seeking new studies and research on this topic via a website integrating "no-significance" and well as "significance" findings (http://www.nosignificantdifference.org/).

There is great potential for online learning to be used very effectively in an instructional environment, and because of this recognized potential, expectations are also high. At the very least, the implementation of online learning programs are expected to maintain student learning (an enhancement is hoped for), while significantly reducing instructional costs.

5.6 Current Issues in Online Learning

5.6.1 Expanding Definitions

As online learning technologies expand, the definition is expanding as well. Efforts to unify the various developments, initiatives and advances are happening at an international level as global higher education policies struggle to stay abreast of the distributed learning wave via web-based technologies. The OECD (2005) Policy Brief on e-learning employs a very wide definition that includes almost any activity making use of ICT as e-learning: "the use of information and communications technology (ICT) to enhance and/or support learning in tertiary education" (p.2). This is echoed by the European Union's "e-learning Action Plan" (2003) that defines e-learning as "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchange and collaboration" (p.3). The implementation of such broad definitions are initiatives that target all levels of formal learning in educational and vocational institutions as well as informal learning activities across the lifespan (life-long learning). ICT-mediated learning has become an integral element of educational policy, processes and systems, requiring participants and learners to have a fairly high level of competence with ICT and Internet, known as "digital literacy" (OECD, 2005; EU-Comm, 2006). Providing access to computers and ICT is important, and efforts to maintain ethical control are valuable if such high-tech initiatives are operationalised at all levels of society (combating the digital divide). However, simply having a computer does not mean a person can use it to its full potential, and the development of ICT skills and competency is necessary to achieve target-goals for an e-learning society (Jonas, Boos & Sassenberg, 2002; Crompton, Ellison & Stevenson, 2002).

5.6.1.1 Transitions - Expansion and Acceptance

Online learning presents many advantages, such as easy access, flexibility, and the opportunity to study while remaining engaged in full-time employment (Warren & Halloman, 2005). However, even with such advantages, there are still reports of high (from 50 to even 70%) drop-out rates (Schmidt 2004; Wang et al 2003) from courses and programs. Resistance to e-learning programs is still quite high at the institutional level, and policy makers are coming to grips with slower realisations of program initiatives. Achieving broad-based action plan entails overcoming many obstacles, and many are noticing that reaching targets may take longer than initially expected, and that the expected revolutionary transformation of education through e-learning may still be a long way off (Islam, 2002; Peters, 2000). Debande (2004) observes that even in a technologically advanced country like Sweden, where coordinated efforts and substantial funding has not been sufficient to establish educational programs using ICT that are well-received by teachers and students. According to Debande, the fundamental problems with implementing effective long-term e-learning action plans are due to the following factors: “the lack of good quality e-learning content and provision of training and support to teachers/trainers in parallel with the organisational changes in the educational systems” (p.192).

Some speculations as to why students do not respond well to online educational programs include lack of face-to-face contact with instructor and peers (Berge, 2002), and a deficit in academic self-discipline and motivation required for success in distance learning environments (Kerr, Rynearson & Kerr, 2006). Others maintain that participants are often overwhelmed with the amounts of content and information that is available (lost in cyberspace), which is a general problem for untrained Internet users who are able to cope with the "sea of information" (Peters, 2000). Within online course environments, Stark and Mandl (2003) contend that students are often ill-prepared for the demands of online learning environments, and lack sufficient meta-cognitive abilities to successfully reflect, control or organise their own learning activities (especially concerning effective time management and planning).

Yet there is still optimism and hope for the future as technology advances and programs are funded for establishing effective long-term e-learning initiatives (Zhang-Nunamaker, 2003; Hedberg, 2006), and rightly so because the "revolution" has really only just begun with changes occurring at the top level (educational systems and policies) as well as at the ground level (teacher-training, course and program development). Williams (2002) presents a framework for addressing current areas of weakness focusing on three central issues: pedagogy, participation and access. Within these three categories, many of the problems and challenges currently facing the field can be examined and attended to, from the digital-divide to effective instructional design.

5.6.2 Pedagogy

The key issues relating to pedagogy and didactics in online learning environments have already been dealt with in detail clearly outlining the potential for effective learning. However, if appropriate learning theories and methods are not applied to online instruction, then what occurs is totally unacceptable and sub-par, as Fraser (1999) declares:

> "The extent to which a student gains the same pedagogical benefit from a printout of your Web resources as from the resources themselves is the extent to which you have done nothing of pedagogical value by using the Web".

In order to effective online instruction, considerable energy needs to be spent in determining the overall objectives of the course so that the best methods and tools can be applied and offered to students.

5.6.2.1 Decisions Regarding Course Format

There are a number of helpful heuristics (see Figure 5.5) that can be used is deciding which online format will be best for a specific course.

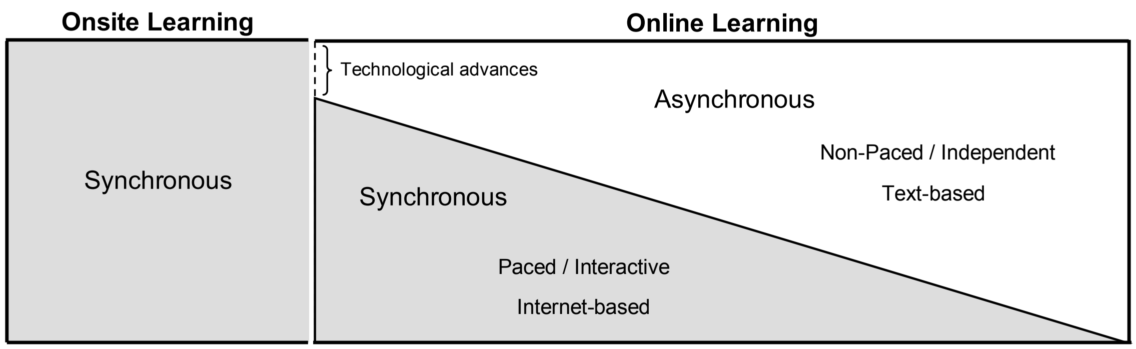


Figure 5.5. Degree of synchronicity in onsite and online learning

At a very basic level, it is possible to view types of online learning on a spectrum identifying "internet-based" courses at one extreme and "text-based" courses at the other.

Such a model leaves a lot of room for combinations of various kinds, but it is helpful to know the direction before concrete steps are taken in the design phase. Anderson (2004b) offers another variation on this spectrum labelling the extremes as "paced" or "non-paced" (relating to the degree of flexibility for scheduling, such as assignments, activities, and tests – the key consideration is whether or not all learners need to adhere to the same learning schedule).

The figure above also presents additional terminology from Anderson (2002) to describe the extreme positions more clearly through the concepts of "interactive" (synchronous) or "independent" (asynchronous)[16]. Paced environments incorporate more interaction between learners and instructors resulting in "virtual classroom", whereas non-paced environments are independent in nature giving freedom to each individual learner. It is important to view these as "extreme" positions; most online courses will be created and designed using combinations of these possibilities depending on the nature of the course objectives, content, and domain or field of study.

5.6.2.2 *Effective Teaching*

Anderson (2004b) employs another more comprehensive schema, developed collaboratively with colleagues in previous research, (see Figure 5.6) for effective learning expressed in degrees of cognitive presence, social presence and teaching presence in online environments. *Cognitive* presence refers to epistemological, cultural, and social expression of the content in a way that fosters and encourages critical

[16] It is important to note that the gap between synchronous and asynchronous environment has been decreasing due to innovative technological advances in the area of online interactive communication. Therefore the figure represents the lesser degree of synchronicity currently found in online environments, but the dotted line acknowledges the potential of new technologies.

thinking skills. *Social* presence refers to forming and maintaining a supportive environment that is safe encouraging expression of ideas and opportunities for collaboration and interaction. *Teaching* presence is critical in formal learning environments involving three critical roles: 1) designing and organising of learning environment (before, during and after); 2) devising and implementing activities encouraging discourse at multiple levels (student↔student, teacher↔student, student↔students↔content); 3) moderating and teaching as subject-expert (including assessment of learners as well as utilizing opportunities for direct instruction when necessary).

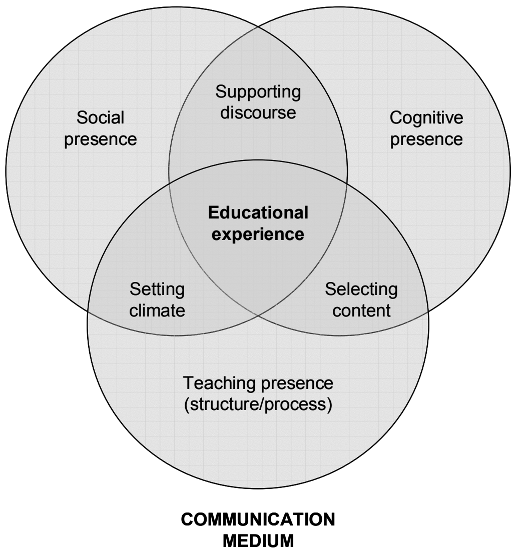


Figure 5.6. Community of Inquiry Model (from Anderson, 2004b)

This type of model fits well with Bransford, Brown & Cocking's (1999) model of learner, knowledge, assessment and community centered instruction. Assessment in online learning environments is very central to its success. An area of weakness identified in the literature is that learners often are unsure of expectations. Avoiding this requires clear and specific instructions as to the quantity and quality of student contributions (Anderson, 2004b).

5.6.2.3 Enhancing Quality

Possibilities for innovative and effective instruction can be implemented in many different ways, as has been illustrated. However, the quality debate in online learning (Parker, 2004; Widrick, Mergen & Grant, 2002; Twigg, 2001; Sims, Dobbs & Hand, 2002; OECD, 2005) raises other issues relating to and influencing the quality of online learning which are administrational in nature. Keeton (2004) recommends the following features:

- Letter of welcome
- General information about online learning (technology requirements, resources, services, etc.)
- Course access information (navigation, log-in, password, etc.)
- Rules, procedures and help using interactive tools
- Course syllabus
- Administrative guidelines (including information on plagiarism)

Reflecting the current trend to implement concrete measures and programs to ensure quality of online learning (for a more detailed review see Parker, 2004), Aspects of Total Quality Management from industrial and organizational efforts to implement standards for excellence that are observable, measurable and controllable are becoming a part of the process in online learning (Widrick, Mergen & Grant, 2002) including bench-marking and best practices, among others. It is recommended that at a basic level, some concrete standards of excellence are identified and adhered to for the design, implementation, and maintenance of online learning over the long-term; such strategies can happen at the institutional level or even at the regional or national level (examples of national standards implementation can be found in Australia as and the UK). Evaluation of whether the standards have been maintained is also critical, and there is a body of literature focusing specifically on the evaluation of online learning environments (Nistor, Schnurer & Mandl, 2005; Schmidt, 2004; Eppler & Mickeler, 2003; Fricke, 2002;). Sims, Dobbs & Hand (2002) propose the implementation of proactive evaluation, a method that facilitates the identification of critical online learning factors and influences in order to better inform the planning, design and development of learning resources.

The more attention and time given to details contributing to a holistic online environment, the more chance of success a program has to survive. According to the OECD (2005), "no clear sustainable business model has yet emerged for commercial provision of e-learning, and failures have been more numerous than successes to date" (p.6). Therefore, each provider has the responsibility to develop a meaningful program that meets the specific needs of all participants.

5.6.3 Participation

5.6.3.1 Faculty Participation

Recognising the complexities involved in offering effective online learning environments is a crucial step toward success that needs to be followed by concrete measures to implement appropriate strategies. An important aspect related to achieving quality is the need to overcome faculty resistance to participating in online environments. Incorporating design aspects as listed above while recognising administrational functions will help. Designing effective instruction in both onsite and online environments takes considerable time and effort. However time factors such as workload and lack of release time contribute to faculty resistance to engaging in online teaching. Lazarus (2003) admits the time-intensive nature of online teaching, but asserts that it is manageable and even comparable to requirements in onsite teaching. Others have found online teaching more time-consuming (Allen & Seaman, 2005); regardless, is should not be ignored. An important factor for achieving successful online learning environments is the infrastructure of support, especially in the pre-instructional phase before course-start-up, and ongoing teacher training can be implemented in any or all phases. Establishing a design team can alleviate some of the anxieties and extra time that is involved in developing online learning environments (Caplan, 2004). Suggested members can include a subject matter expert (teacher or other expert), instructional designer (not necessarily the instructor), web developer, graphic or visual designer, programmer and multimedia author. When all of these roles converge on just one person, the teacher, it is no wonder that resistance to online teaching occurs. Thiessen & Ambrock (2004) also emphasize the necessity of an editor who ensures course quality in all areas before onset of instruction.

5.6.3.2 Student Participation

Student participation in online learning environments is related to the advantages that such environments offer. Some online programs report that the majority of students are adult learners, which reflects a trend in general distance education programs (Dutton, Dutton & Perry, 2002). Most students involved in online learning programs are also involved in some kind of employment (part-time or full-time). These aspects raise special concerns regarding education and support. Mason & Weller (2000) identify seven key issues that effect student satisfaction in online learning environments: skill development vs. academic content, previous computing experience, interaction through computer conferencing, online group work, online tutoring, student lack of time, course revisions in response to evaluations. Other studies have attempted to identify characteristics of successful online learners or even a profile, including learning styles and personality factors. Kerr, Rynearson & Kerr (2006) conduct studies using a new instrument (TOOLS – **T**est **o**f **O**nline **L**earning **S**uccess) and develop characteristics for online students that may help to contribute to successful learning experiences: self-direction, independence, responsibility for learning, self competence, proficiency in reading and writing, time management skills, and motivation to learn. Identifying such characteristics and profiles offers insight to both students and institutions – students can estimate their own compatibility with online environments, and institutions can incorporate support measures that foster and encourage growth in these areas.

5.6.3.3 Participation of Providing Institutions and Organisations

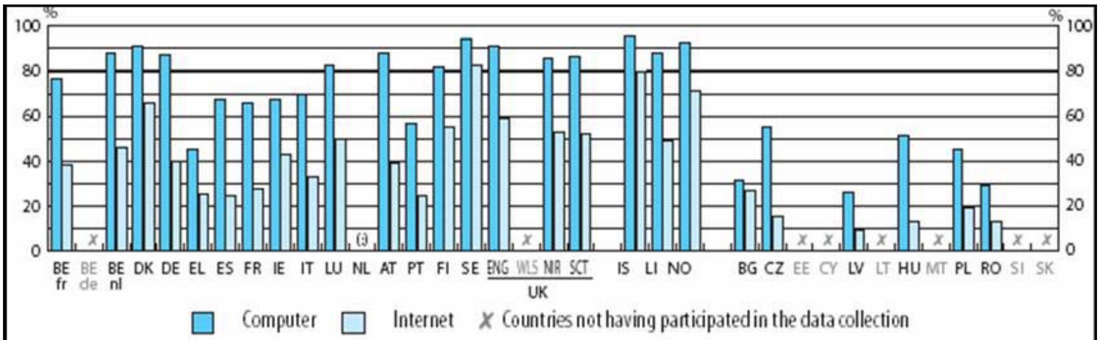
That online learning in all its variations represent attractive opportunities for academic institutions and non-profit organisations as well as private companies and for-profit organisations has been will established. Many studies indicate that institutions and organisations recognize the value of online learning and see it as an integral element to future educational and training endeavours (Mac Keough, 2001; Capper, 2001; Allen & Seaman, 2005). The challenge lies in the provision of quality programs over the long-term. Goodyear (2004) recognizes that the type of attitude or perspective toward learning is influential in directing future learning actions. From an institutional viewpoint, he observes that two major attitudes are academic learning (acquisition of knowledge is not dependent upon application of that knowledge outside of academia) and vocational learning (acquisition of knowledge to explicitly satisfy requirements outside of academia). While this involves major simplification of reasons for engaging in learning, it does represent two major mindsets in education. Online learning and ICTs provide an opportunity to address and satisfy both directions, even collaborating or overlapping them in educational programs. Viewing the futures of both directions, each prescribes competency and skill in digital-literacy, media competence (Jonas, Boss & Sassenberg, 2002; Milliron & Miles, 2000) and other more general competencies (key competencies) have been identified that are key to functioning successfully in society – regardless of academic or vocational settings. Cognos (2002) observes a need for companies and organisations to inform their employees on the benefits and advantages of e-learning opportunities, since their research has shown a marked preference for traditional onsite formats of education and vocational training. Debande (2004) calls for increased efforts to establish public-private-partnerships (PPPs) which is a strategy for improving quality in online learning programs. Werner & Schmidt (2006) describe a cooperative program that is jointly designed by both an academic and corporate partner functioning on the open-source learning platform Moodle (for a description of the platform see Downes, 2005). Such cooperative programs are growing in popularity, especially as employees are seeking academically certified programs for continuing vocational training at various stages in their working life (reflects policies and initiatives promoting and encouraging access and participation in life-long learning).

Other forms of collaboration are possible, this time placing the companies and organisations as the key provider of e-learning services. Capper (2001) describes four main types of e-learning companies: 1) providers of content (full content, aggregated content, custom content); 2) providers of learning platforms (targeting both academic and corporate markets); 3) providers of consulting services; 4) complete package providers (all of the previous listed services from one company – less frequent). Some universities are turning to e-learning companies on contractual basis for a wide range of services as mentioned above, especially if demands for online learning programs are increasing at rates higher than infrastructure expansion can accommodate. It is important to note that while e-learning companies are expanding products and services, it is often open-source courseware and learning platforms (such as Moodle and many learning objects – see MIT OpenCourseWare, as cited in Zhang & Nunamaker, 2003) that make online learning environments possible at many educational institutions, simply due to costs.

5.6.4 Access – Ethics and Tech-Specs

As mentioned earlier in the section addressing current issues in online learning, access is a critical factor to examine, especially after major governmental policies and initiatives have declared digital literacy a requisite skill for successful functioning in society across the lifespan of individuals. Contrary to pedagogical issues, this focus does require simply making ICTs accessible to people at all ages, however computers alone is insufficient representing only a portion of the required competency. The concepts of mass digital literacy and media competence initiatives raises serious ethical considerations in their implementation – hence the current term “digital divide”.

In order for such targets to be truly achieved, it means that all people have access to computers and internet, regardless of race, ethnicity, age, gender, socio-economic status, etc. Many international organisations are attempting to evaluate the true status of countries and regions regarding readiness for engagement in wired and wireless technologies. The Eurydice-ICT (2004) survey providing key data on ICT in European schools identifies an important factor in assessing current status levels in that "the percentage of families connected to the Internet is always lower than that of families with a computer" (p.14). Figure 5.7 provides a more detailed overview of findings from the section of the survey focusing on 15-year-old pupils in 1999-2000: Internet connection is highest in Scandinavian countries and the United Kingdom; sixteen countries report that less than half of the families of 15-year-old pupils with a computer have an Internet connection; the number drops significantly to between 10 and 15% in Eastern European countries (Czech Republic, Latvia, Hungary and Romania). A similar international survey (as cited in Curran, 2001) over the same time-frame dealing with adult subjects reported an estimated 50% of Canadians and Americans having Internet access, whereas figures as low as 2% were reported for people living in Latin America, Asia, the Middle East, and Africa.



	BE fr	BE nl	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK ENG	UK NIR	UK SCT	IS	LI	NO	BG	CZ	LV	HU	PL	RO
■	76.2	88.1	91.2	87.0	44.7	67.4	65.8	67.4	69.7	82.9	(:)	88.0	56.9	81.7	94.6	90.8	85.9	86.3	95.5	88.3	93.0	31.5	55.2	25.9	51.1	45.1	28.7
□	38.0	46.2	66.1	40.0	25.0	24.0	27.1	43.0	32.7	50.0	(:)	39.1	24.3	55.2	82.8	59.2	52.6	51.9	80.0	48.7	71.2	26.3	14.7	9.3	12.9	19.0	12.8

Figure 5.7. Reported computer and Internet connection at home (1999-2000)

Adapted from EURYDICE (2004) Key Data on Information and Communication Technology in Schools in Europe. Annual Report (Brussels, European Commission).

However, the digital divide is also evident within the countries that appear to be "well-situated" in the ICT race as reported in surveys making comparisons between nations and countries. Curran (2001) cites studies reporting significantly less likelihood to have access to computer and/or Internet on the basis of low income and low levels of educational attainment. In two recent reports by the European Commission (EU-Comm, 2006) on digital divide, broadband technologies are presented as a helpful technology for decreasing the inequality of access. However, initiatives to implement and provide broadband services are still heavily focused on urban areas (90% versus 62% in rural areas). In a global knowledge-based and information-based society, that is becoming increasingly competitive, access can be the difference between success or failure:

> "The lack of technology access and skills puts disadvantaged members of our society increasingly at risk of becoming disenfranchised spectators of a digital world that is passing them by, bit by bit" (Milliron & Miles, 2000, p.56).

Milliron & Miles continue to explore challenges facing digital literacy and media competence and observe an important connection between the access people to have to computers and Internet and the forecasted shortage of ICT skilled workers. Therefore, people who are unable to acquire requisite competency not only do not develop in this direction, they may be facing continued obstacles and barriers later in life as employment trends also shift toward digital competency.

These statistics are also alarming due to the speed of technological change occurring in countries with advanced ICT infrastructure and resources, and the fact that acquisition of digital literacy and media competency requires interacting with online technologies that are now often demanding equipment with large memory capability and fast internet connection (see section 5.4).

5.7 Blended Learning – Best of Both Worlds

In response to the findings presented above relating to issues of quality in online learning environments, blended learning is an alternative format for offering instruction that attempts to bridge the gap between effective face-to-face and online instruction. At a basic level blended learning is simply the combination of face-to-face (onsite) and virtual (online) educational formats within a single learning environment emphasising the advantages of both methods. It offers a viable solution to the weaknesses and problems that have arisen in online learning enhancing the effectiveness and efficiency of instruction (Garrion & Kanuka, 2004). Using the framework of pedagogy, participation and access as presented above, the benefits of blended learning are outlined as follows:

Concerning issues of pedagogy – the need for flexible and authentic instruction that is grounded in learning theory is necessary for quality learning environments. Blended learning facilitates the strategy put forward by Ally (2004) relating to learning theories and their integration with technologically enriched learning environments emphasising the strengths of the three main theoretical schools in combination instead of in opposition to one another (what, how, why…behaviourist, cognitivist, constructivist, respectively). Blended learning allows instruction to embrace the complete range of educational technology, from synchronous to asynchronous learning tools and methods. Figure 5.8 illustrates the benefit of blended learning in its ability to engage the full range of educational media in relationship to interaction and flexibility.

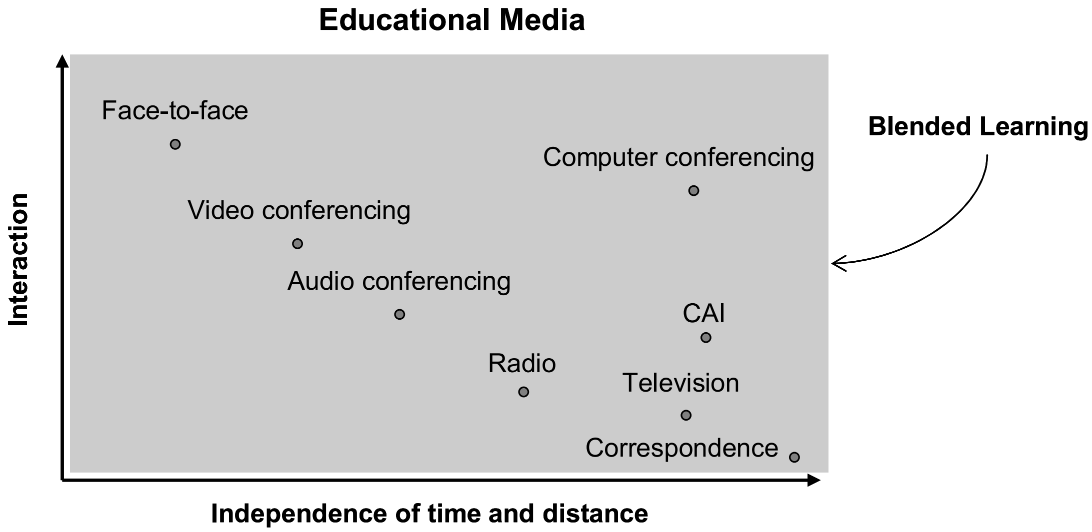


Figure 5.8. Educational media in blended learning – advantages of flexibility and interactivity (adapted from Anderson, 2004a)

This figure is a simple adaptation of Anderson's (2004a) version (see Figure 5.4) which examined web based learning environments, except now face-to-face (synchronous) media are also included as part of blended learning (they were excluded from web based learning).

Concerning issues of participation – faculty participation can be improved with blended learning environments, since it does not require total online engagement allowing them to continue in a teaching format that is familiar and non-threatening. Furthermore, the time-factor can be decreased with careful planning and coordination, using onsite meetings for more in-depth feedback and assessment opportunities. Speed of delivery can also be taken advantage of in onsite meetings regarding administrational activities, such as assignment submission, group formation, etc. Participation from a student perspective is also enhanced through blended learning environments, especially in the opportunity for building personal relationships between student, teacher and institution. Having a chance to make a personal connection with peers facilitates group work and interaction during online learning phases. Support and guidance of the learning processes can be improved with a mixture of online and onsite interaction between learners and instructor. From an institutional perspective blended learning allows education and training providers a chance to build personal relationships with clientele making the relevant services have a deeper and more profound personal impact.

Concerning issues of access – problems regarding access to online environments can be made more manageable in blended learning environments. For students who struggle with online technology and multi-media environments, or who have system problems due to internet provider difficulties, onsite interaction provides another opportunity to display knowledge and acquisition of requisite skills. Blended learning environments are able to counter the “lost in cyberspace” effect that occurs in pure online environments. It decreases the amount of emphasis on competency displayed through online and multi-media technology, and provides learners and program providers a chance to monitor the development of requisite digital competency. Sharing of resources and expertise, tips and tricks for operation and navigation of system and Internet, and opportunity for learning to occur from expert models (peers and instructors) are encouraged through blended learning environments. The ethical inequality that often arises between the “haves” and the “have-nots” can be reduced fostering educational environments that assess levels of learning, not levels of advanced equipment.

5.7.1 Definitions and Complexities

Blended learning is a good example of how instruction can be improved in response to the many problems found in online learning environments. Other terminology can be found in the growing body of literature describing blended learning, such as "hybrid", "mixed" and "semi-virtual" instruction; see Osguthorpe and Graham 2003; Garrison and Kanuka 2004 for detailed reviews. However, there is no clear-cut definition that outlines exactly what proportions of onsite and online elements are necessary for inclusion in this instructional category. The OECD (2005) distinguishes between a wide range of online opportunities, referring to blended learning as "mixed-mode" (see Table 5.5).

Garrison and Kanuka (2004) also insist on separating blended learning from learning environments that use online functions to simply enhance instruction, and use a simpler model identifying only three major types of instructional formats: enhanced, blended, and online (p.97). Following their argumentation, Garrison and Kanuka maintain that blended learning environments are complex in nature and demand a rethinking and redesigning of the teaching and learning relationship based on the specific needs of the leaning situation (involving *contextual* elements - objectives, goals, content and domain of a given course; and personal elements – characteristics of the participants). Because of this, "no two blended learning designs are identical" (p. 97). The central element in designing effective blended learning environments is determining the quality and quantity of interaction to implement since the full ranges of both synchronous and asynchronous communication are available.

Table 5.5. Forms of online learning (adapted from OECD, 2005)

Form	Description
Web-supplemental	Classroom-based teaching that includes some online features (course outline, lecture notes, use of email, and links to online resources.
Web-dependent	Requires online participation for key program elements (discussions, assessment, projects, collaborative work, etc.) without reduction in classroom time.

Mixed-mode	Online elements begin to replace classroom time, but onsite attendance remains an essential element.
Fully online	No onsite classroom time is required. Students can participate in the course from anywhere using the Internet.

As the literature increases in breadth and depth, there are many insights offered regarding interaction and other key factors. Kerres & DeWitt (2003) focus on the importance of establishing meaningful and appropriate onsite interaction in blended learning emphasising the need for careful planning to ensure learner satisfaction. Douglis (2003) and Anderson (2002) also emphasize the element of interaction, putting the emphasis, however, on learning occurring during online phases of instruction. Determining the scheduling, selection of media, level of collaboration and types of assessment are key factors to implementing successful online interactive experiences. O'Toole and Absalom (2003) call for a careful integration of methods, and Reece and Lockee (2005) elaborate on the timing of activities and tasks to achieve optimal levels of transfer, as well as selecting appropriate assessment methods. However, it is not always easy to describe the benefits of blended learning accurately, and some authors outline benefits without specifying concrete measures (Young, 2002), without connection to learning theory (Valiathan, 2002), or simply do not go into sufficient detail in their description (Brown, 2001).

5.7.2 Advantages of Blended Learning

Garrison and Kanuka (2004) offer compelling arguments for the advantages of blended learning within a valid framework well-grounded in educational theory. Using the model (Figure 5.6) for effective learning, already presented in section 5.6.2.2, Garrison and Kanuka proceed to elaborate on the great potential of blended learning for creating communities of inquiry with appropriate degrees of cognitive presence, social presence and teaching presence in a learning environment.

The limitless amounts of knowledge available online and the structured knowledge provided in an onsite setting are combined in blended learning encouraging the development of critical thinking skills. These skills are applied through both asynchronous discourse that is reflective in nature and communicated in written form (provides a record of interaction), as well as synchronous discourse that is spontaneous and verbal (requiring participants to remember sequences of interchange and respond quickly to voice opinions and ideas). Blended learning encourages both independent learning (fosters agency and control) and collaborative learning (provides cohesion and balance) resulting in a supportive climate that helps to sustain positive educational experience over a longer period of time. Viewed in this way, blended learning does indeed have many advantages.

5.7.2.1 Blended Learning in Practice – A Pre/Post Model

The design of blended learning environments can be accomplished in a variety of ways. One very successful format is to emphasize its capability for learning activities both prior to and after the period of onsite instruction. Douglis (2003) describes this model in detail by placing the course and its main instructional events on a time-line (see Figure 5.9). The original model used months as a unit of time, but since this lead to the course lasting almost an entire year, it seemed appropriate to use a smaller unit of time (in this case weeks) that offers a more compatible presentation of a course offered on a semester system (on average 14-17 weeks). However, this model can function successfully with smaller, and of course larger units of time. The model illustrates a course that incorporates online activities before the onsite (classroom) event, as well as online activities occurring after onsite participation.

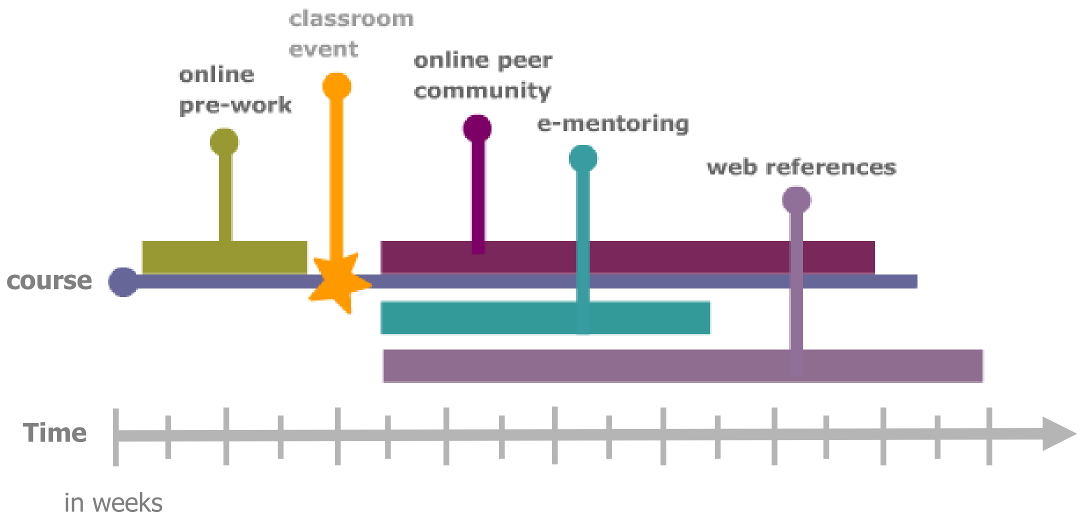


Figure 5.9. Extending the learning experience over time (Douglis, 2003)

The advantage of such a model is that students can participate in intensified, in-depth onsite activities due to their already acquired subject knowledge that is relevant to the onsite topic. Furthermore, after onsite participation, students have the flexibility, control and independence offered in online activity that allow them the freedom to explore the topic in further detail at their own convenience (within the framework of assigned tasks, if necessary). The model also includes interaction between peers and instructor (e-mentor). This is a simple framework that can be adapted easily as course parameters are defined.

5.8 Summary: The Need for Learner Support

Online learning is an educational reality that has arisen from the changes and advances occurring in ICT that are transforming and re-shaping the methods of communication in society. As communication forms change in society, then the ways in which learning and knowledge is communicated and shared will also be change and need to be changed. The advances in technology are happening rapidly, making it challenging for the field of education to stay abreast of cutting-edge technologies. As this section portrays, relevant literature indicates that online learning as a field is only just beginning, and in order to maintain integrity and high levels of quality, its application and implementation must be reviewed and monitored by reflective practitioners.

Blended learning is an instructional format that has developed due to weaknesses and limitations identified with pure online learning environments, especially in terms of pedagogy, participation and access. What these critiques all have in common is the aspect of support – support for the learner and instructor (and institution, which can be extended to the level of policy as it applies to region, nation, and beyond). Support can be realised in many different ways. Hodges (2004) describes a need to support students in non-academic ways, including readiness for learning activities (self-assessment occurring prior to course or program start-up), cohesion of studies with career and personal goals, clear expectations along with information and administrative support, technological support, educational counselling and program advising, study skills assistance. Support for students in academic areas can also be achieved in many ways, and a main area is instructional design, which has already been discussed in detail. Other forms of academic support can involve expert modelling through instructor/tutors, and other forms of effective scaffolding (assistance or intervention from a peer, adult or other competent person during the learning process) within learning activities (McLoughlin, 2002).

This current program of research intends to focus on the aspect of student support in blended learning environments; therefore it deals with the successful integration of both onsite and online learning activities. As such, successful learners need to have high levels of competency (multi-media, reading and writing, ICT, etc.). Other factors also play a role in successful learning within blended learning environments, such as self-knowledge, motivation, goal-setting, and self-regulation. This study intends to explore these factors within blended learning environments using future oriented instruction.

6 Theoretical Summary

6.1 Future-Orientation – A Vehicle for Support

Given the research relating to the positive effect that high levels of intrinsic motivation, task value and self-regulatory ability (as presented in preceding sections of this paper) have upon student achievement, efforts need to be made within blended learning environments to foster and encourage growth in these areas. One way to achieve this is to incorporate elements of future orientation into the design of instruction[17].

6.1.1 Fostering Motivation in Online Learning

Motivational research in education has a long and rich history (see section 3.1), and the body of literature investigating motivational factors effecting learning in online environments is growing. Astleitner's (2003) general review limited explicitly to web-based learning examined its influences on learning mentions four notable studies concerning motivation in online learning environments relating to self-regulated and active learning (Boekarts, 1997); application of Keller's ARCS model (Chyung, Winiecki & Fenner, 1998; Visser, 1998); influence of Artificial Intelligence software on motivation (Thaiupathump, Bourne & Campbell, 1999). Kawachi (2003) offers a review that provides an overview of ways in which four motivations (academic, vocational, social and personal) are initiated within instruction offered in open and distant learning

[17] The program of research presented in this dissertation involves an intervention occurring at the course level. Continuous efforts are needed that expand the impact of using future orientation at all levels, including pre-program, during and post-program activities. See Appendix C for a discussion in greater detail regarding such comprehensive efforts (Schmidt & Werner, 2006)

environments that is very insightful, especially in terms of his sensitivity to international issues within the fields of motivational research and online learning.

In more recent studies, Keller and Suzuki (2004) validate the ARCS developed by Keller as an effective means of influencing learner motivation by using a systematic approach to the design of online instruction; Martens, Gulikers and Bastiens (2004) examine the impact of intrinsic motivation on e-learning in authentic computer tasks, and find that high levels of intrinsic motivation are indicative not of higher levels of achievement, but rather of different learning activities, especially exploratory behaviour. In a recent article by Hedberg (2006) examining the potential future of e-learning, an innovative approach to increasing motivation in online environments is presented that operates on the concept of increased engagement. Hedberg describes the recent theory developed by Susan Metros (2003) and its premise that engagement with learning increases in online environments when students move through the process of transferring, translating and transcending ideas (see Table 6.1).

Table 6.1. Matching pedagogies with motivation (Metros, 2003)

Engagement Level	Passive Interest	Dynamic Interaction	Flow-state
eLearning Motivation	Transfer	Translate	Transcend
Applications	online syllabus online lecture notes presentations	web resources web quests blogs	smart tutoring remote instrumentation (remote data collection via web)
	course website E-reserves	learning communities rich media databases	Immersive 3D graphic environments (eg. Quest Atlantis)
		learning objects multimedia presentations	dynamic knowledge collection management
		self-paced tutorials	federated & harvested searches
		interactive e-texts interactive simulations/ applets	
Learning Outcomes	computer literacy	collaboration	advance sensory input/ output
	comprehension	cooperation	redefined teacher/ student relationships
	convenience & accessibility	critical thinking	realistic research solutions
	time management	problem solving	life-long learning
	convenient access to information	teamwork	reflective assignments
	community building	alternative learning strategies	access to targeted information
		information analysis contextual learning	

(taken from Hedberg, 2006, p.181)

The concepts put forward by Metros in Table 6.1 can be seen as a design framework for online learning environment that provides students meaningful interactive opportunities with knowledge – engagement (as engagement increases, so to does motivation). Environments that simply *transfer* conventional educational practices (tools, strategies, communication and delivery) over to online environments result in lower levels of student engagement than those that are able to *translate* (redefine and shift) conventional methods, which again result in lower engagement than *transcending* environments (go beyond conventional methods creating new paradigms for teaching and learning). According to Hedberg (and Metros), current forms of online learning are still trapped in the confining methodology of transfer and calls for movement toward environments of transcending motivation (echoes developments in constructivist learning theory) offering multimodal views, requiring a range of literacies, and the use of a variety of tools for knowledge construction and communication.

The key aspect that can be gained from the body of literature dealing with student motivation in online learning environments is that it is possible to consider the individual needs and characteristics in the design of online learning environments providing opportunities for increased motivation to learn (Keller & Suzuki, 2004). Due to the early stages of motivational research in online environments, more research is necessary that addresses motivational factors, which substantiates the efforts of this current project of research examining changing levels of motivation in students participating in blended learning environments.

6.1.2 Relationship Between FTP and Goal Orientation

Goal orientation has been observed to have significant influence on intrinsic motivation and graded performance in academic setting. The research conducted by Elliot and Church (1997) dealt with a comprehensive model of what they determined were antecedents and consequences of goal orientation – their intent was to identify constructs leading to and predicting the adoption of goal orientation, as well as the consequences or outcomes of such adoption on student motivation and performance. According to their results, they found that achievement motive, competence expectancy and fear of failure influenced goal adoption (most significantly was competence expectancy), therefore these factors were labelled as antecedents to goal orientation. This current study proposes an additional antecedent, namely FTP. Based on the findings in previous literature dealing with the relationship of FTP to motivation and goal orientation, this is a valid and feasible assumption. This study also includes motivational beliefs and SRL variables as constructs that interrelate with goal orientation before the final consequence or outcome phase. Consequently, they can be viewed as operations of goal orientation.

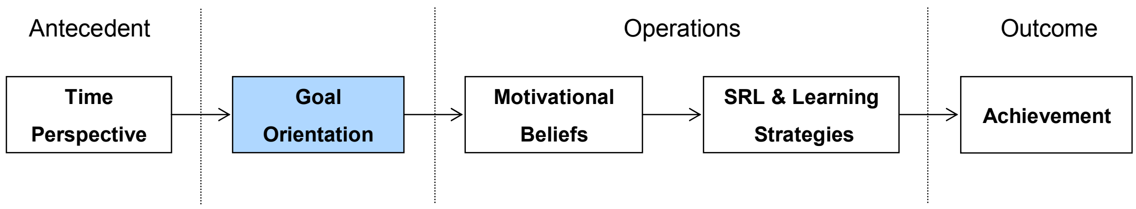


Figure 6.1. Antecedents, operations, and outcomes of goal orientation

In summary, this current study presents an expanded picture of the interrelationships between FTP, goal orientation, motivational beliefs, SRL and student achievement (graded performance).

6.1.3 Promoting Self-Regulation

Research examining aspects of self-regulated learning (SRL), including self-direction, control, and use of learning strategies is similar to the small yet developing literature on motivational factors. However, SRL studies often incorporate motivational factors (self-efficacy, goal orientation, etc.) since research dealing with student achievement examines multiple influences and impacts (Lynch & Dembo, 2004). Very few reviews exist that deal specifically with self-regulated learning in online environments. Hodges (2004) provides an overview that includes computer-based instruction (instead of just pure online environments) in an attempt to offer a review of more breadth. His review presents nine studies in total exploring topics ranging from learner control (and the apparent lack of strategies displayed by students indicating a need for training in self-regulatory strategy use – see Azevedo & Cromley, 2004), to subsets of strategies identified in the research by Zimmerman and Martinez-Pons (1988) that have been well researched in traditional environments.

The transfer of SRL concepts into online environments does seem to raise problematic issues, according to literature. Similar categories of strategies are examined (monitoring, self-evaluating, planning, metacognitive self-regulation, management of time and environment). Lynch and Dembo (2004) also present a detailed review of studies dealing with these specific strategy categories from a perspective of web-based distance education. They summarize their findings with a description of the most important self-regulatory attributes for the online learner: motivation, experience with Internet technology, time management skills, study environment management skills, and help seeking (assistance management).

What is interesting in these studies is how online students adapt strategies to the "new" learning environment (Whipp & Chiarelli, 2004). However, this is also expressed in the traditional literature dealing with SRL – the conceptualisation of SRL as an aptitude (resulting in self-report surveys and questionnaires) or as an event (requiring new methods of evaluation; see Winne and Nesbit, 2003).

This current program of research continues in the tradition of examining SRL as an aptitude (Zimmerman, 1989; Pintrich & De Groot, 1990), adding to the literature by examining students in a blended learning environment. Specific strategies regarding students' propensity for metacognitive self-regulation; time, effort and environment management; and help seeking will be examined in relationship to motivational factors and achievement outcomes.

7 Research Questions and Hypotheses

The focus of this current program of research is on exploring the relationship of future orientation to motivational beliefs, self-regulation and student achievement through an instructional intervention. Since there have been very few studies, if any, dealing with instructional interventions using future orientation, this current research provides valuable insights to the field of literature dealing with future time perspective and learning.

7.1 Research Questions

As stated in chapter 1, there are two main research questions that are examined in this research:

RQ 1 Is it possible to illicit a change in student future orientation and FTP through instruction?

RQ 2 How does change in future orientation and FTP affect student goal orientation, motivational beliefs, SRL, and achievement?

7.2 Hypotheses

The hypotheses generated from these research questions have two general functions (see Table 7.1): first, to further the understanding of these constructs through new exploration and examination, and second, to verify specific claims and findings from relevant previous research.

The fundamental hypothesis of this study assumes that future oriented instruction will have a positive effect on student perceived future time perspective, goal orientation, motivational beliefs, self-regulation and academic achievement (H1). This hypothesis attempts to disprove the hypothesis that future orientation has a negative or no effect on these constructs (null-hypothesis or H0). This main hypothesis seeks to extend the research on time perspective and instrumentatlity as constructs into operationalised instructional interventions.

Other specific hypotheses extending from the fundamental hypothesis involve the factors included in this study. While many various hypotheses can be generated regarding the effects of future oriented instruction, a series of hypotheses has been generated that is most relevant to blended learning environments and the literature presented as a theoretical framework for this study. A second group of hypotheses deals with the relationship and role of FTP with the other dependent variables. Firstly, it is assumed that there will be a significant correlation between high FTP and academic achievement (this verifies the claim that an academic environment is fundamentally future oriented – see Zimbardo & Boyd, 1999; Husman & Lens, 1999). Secondly, it is assumed that there will be a significant correlation between high FTP and high motivational beliefs and goal orientation (this verifies the positive relationship identified between FTP and motivational constructs – see Human et al., 2004; Malka & Covington, 2005). Thirdly, it is assumed that there will be a significant correlation between high FTP and SRL and use of learning strategies (this extends the research on FTP and volitional strategy use into the field of SRL– see Husman, McCann & Crowson, 2000).

A final hypothesis deals with the stability of FTP as a construct over time. It is assumed that there will be an increase in FTP due to participation in a blended learning environment over time (extends the research on FTP and student achievement in onsite environments into new learning environments making use of online and blended learning formats).

Table 7.1. Overview of hypotheses in terms of innovation and verification of theory

Number	**Hypothesis and Theoretical Connection**	**Type**
H1	Positive effects of future oriented instruction on student future time perspective, motivational beliefs, SRL and academic achievement.	New
H2a	Correlation between high FTP and high academic achievement.	Verification
H2b	Correlation between high FTP and high motivational beliefs.	Verification
H2c	Correlation between high FTP and use of SRL strategies.	New
H3	Increase in FTP due to participation in blended learning environment.	New

The innovative aspects of this program of research arise from an identified need for research on FTP within instructional environments (Husman & Lens, 1999; Miller & Brickman, 2004; Malka & Covington, 2005). It attempts to broaden the scope of FTP and learning research in learning environments in order to incorporate ICT and web based technologies (in this case, blended learning). Another intent is to verify generalisations that have been made in relevant literature and to ascertain if they still hold true in blended learning environments. The design of this program of research is not intended to provide inference of causality, nor to make broad generalisations applicable to other fields or domains of learning.

8 METHOD

8.1 Research Design

The overall design is quasi-experimental in nature using a 2 x 2 factorial design incorporating the independent variables of instructional method (future-oriented instruction vs. non-future instruction) and future time perspective (degree: high/low). Both quantitative and qualitative measures will be applied in the evaluation of future-oriented instruction using multivariate and univariate analysis to determine its effect on the dependent variables of student perception of time perspective, motivational beliefs, and cognition.

8.2 Population and Sample

8.2.1 Description of Institutional Partner

The institution involved in the current program of research is the University of Applied Management (UAM) located in Erding (Germany) just outside of Munich (www.myfham.de). It is a new private university in Germany that is accredited by the Bavarian State Ministry of Science, Research and the Arts. UAM is a modern university offering a unique form of higher education that is different from public universities in Germany in two central areas: curriculum and educational format. The curriculum is focused on providing programs of study that connect business administration studies to traditional academic domains (e.g. business psychology, business informatics, etc.). The result is a degree program that prepares students for professions in their chosen fields with the extra advantage of business knowledge and management competence. The educational format incorporates the advantages of both onsite (face-to-face) and online (web based) learning environments – blended learning (see section 5 for a detailed review of blended learning). While blended learning is growing in population in

Germany (Kappel, Lehmann, & Loeper, 2002), UAM is one of the few higher education institutions in Germany that applies this unique teaching and learning format to all of its degree programs.

8.2.2 Student Sample

Due to the common program focus on management studies, the first and second semesters involve core courses that are required for every degree program. Consequently, a convenient sample has been used involving students in their first semester (*N*=121). The main investigation involves students who participate in a required course entitled "Personality Development and Self-Management" (PDSM); a control group is also included consisting of students who do not complete this course in their first semester, but rather later on in their studies[18]. Assignment to instructional groups is not randomized due to logistical issues (onsite learning phases) and original class configurations at the time of course registration have been retained to ensure clear and total differentiation of groups. Although PDSM is a required course, participation in the research is optional and does not affect student grades in any way.

A total of 118 students (68 females, and 50 males) participated in the program of research. Some students (*n*=3) were excluded because they did not participate and neglected to submit the necessary questionnaires. The number was further reduced since

[18] Due to changes in semester and curriculum planning at the partner institution, this form of control was only possible during the second semester. PDSM was no longer offered in the first semester of studies which allowed for a new group of students to be used as a non-instructional comparison group (however, only over one semester rather than two).

some students were excluded after participation due to missing and incomplete data (n=24).

The final sample (N=94) consists of a treatment group (n=44) receiving full instruction (future oriented instruction plus PDSM content) combining students from two different classes, and a non-treatment group (n=38) receiving modified instruction (only PDSM content) also combining students from two different classes. A further effort to provide empirical control is attempted through the inclusion of a small group of students (n=12) who do not receive future oriented instruction or PDSM instruction in their first semester. In this way, two levels of control are possible: the use of modified instruction and non-instruction.

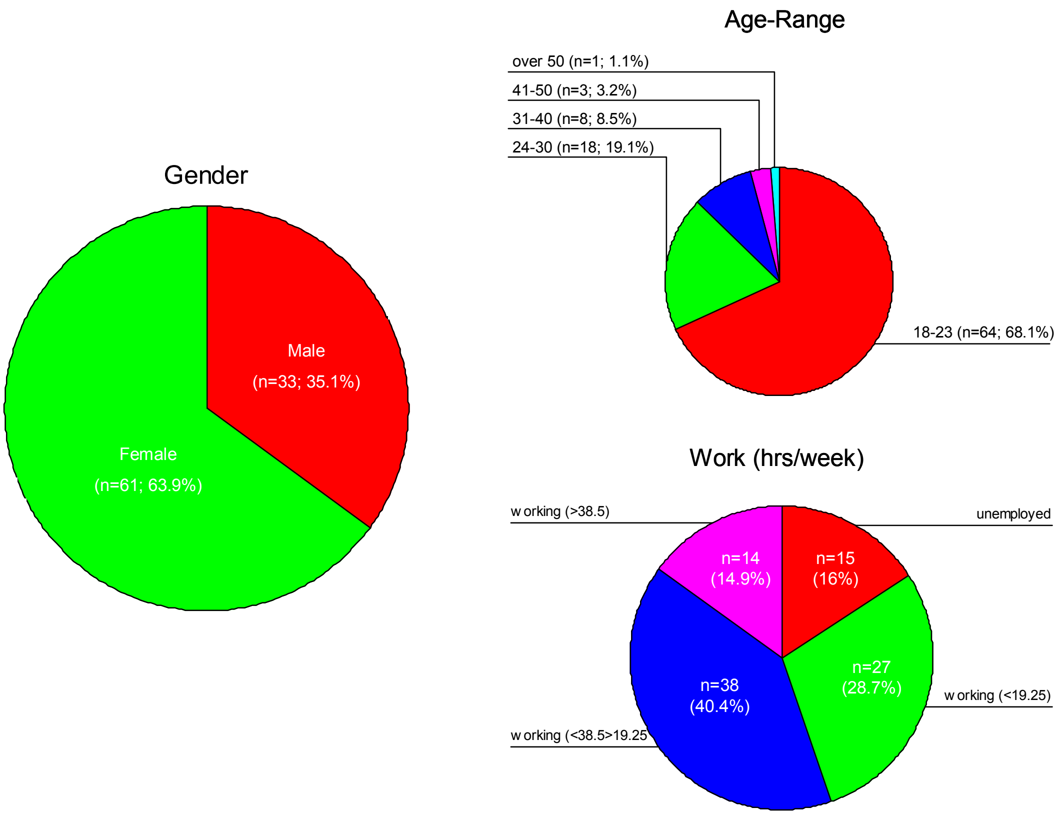


Figure 8.1. Sample description (gender, age, work)

An overview of descriptive statistics for the final 94 participants is presented in Figure 8.1 providing information regarding student gender, age-range and work (hours/week).

8.3 Procedure

The program of research examines the participating students at three different time periods over two semesters within two courses: PDSM (the main course for which special future oriented instruction was designed), divided into two instructional groups (full and modified), and Accounting 101 (a course offered parallel to PDSM included in the study for transfer of learning observations).

The overall framework and procedure of this current research program is presented in Figure 8.2. This figure portrays all phases of instruction and measures (pre-post-post) in a comprehensive model over two semesters.

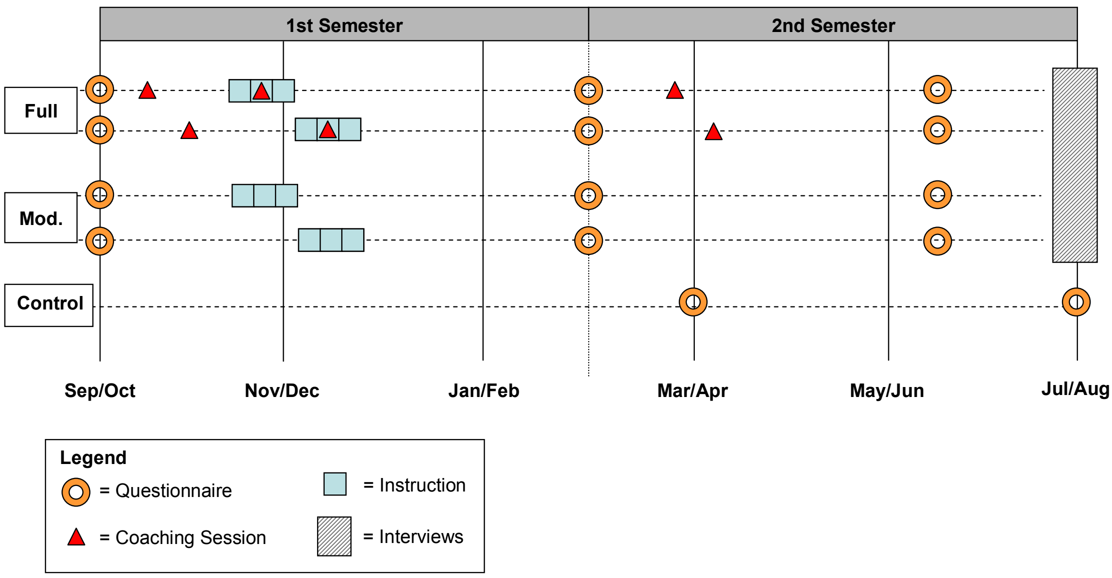


Figure 8.2. Research Timeline

The procedure of events as they transpired in this study is best articulated under the four categories of events of pre-instruction, instruction, post-instruction, and transfer (post-post). A detailed description of each event category and relevant activities is presented in the following sections.

8.3.1 Pre-Instruction

The first event category is pre-instruction, which involved many important considerations and preparations: the design of future oriented instruction to supplement the required course content of PDSM; the selection of instruments to include in the online self-report questionnaires[19] (measuring student motivational beliefs, SRL and perceived time perspective); the gathering of student achievement data (pre-program studies); and finally the implementation and administration of the first questionnaire (pre-test) within the parallel Accounting 101 course.

Self-report measures were collected within the Accounting 101 course which started immediately at the beginning of the semester. All students, regardless of instructional group, received access information (login, password, etc.) for the learning platform used by the university (Moodle). Within the Accounting 101 framework, students were provided with web-link to the online questionnaire (pre-test). Students were instructed to complete the questionnaire as the first task in the course. It was possible to complete the survey in one sitting, and access to the questionnaire was provided for two weeks to ensure maximum participation and convenience for the students. After two weeks, students could no longer access the pre-test.

[19] See the instruments (section 8.5) for further explanation of instruments and specific factors.

8.3.2 Instruction

The second event category focuses primarily on instruction. The two instructional groups were further separated (using already existing sections created by university administration) into four smaller sections, which facilitated easier instructional management. Each section received separate and individual instruction, and no overlap or cross-over interaction occurred between sections of different instruction (e.g. full or modified).

8.3.2.1 Future Oriented Instruction (Full)

The full instruction group received future oriented instruction that was supplemental to the content of the required PDSM course intended to encourage transfer of future orientated concepts to other program courses (e.g. Accounting 101). Delivery of future oriented instruction was realized through the combination of online materials for pre-seminar preparation, a pre-seminar coaching session, and a second coaching session during the seminar. The seminar consisted of three full-day sessions involving self-assessment and reflection, individual assignments and group discussions. The seminar continued online until the end of the semester (approximately 16 weeks in total) culminating with a final essay assignment (a reflective individual essay on a student selected topic relevant to the PDSM course focus).

8.3.2.2 Non-Future Oriented Instruction (Modified)

The modified instructional group received non-future oriented instruction (modified), which involved only the course content from PDSM. No extra coaching sessions were included. Apart from the absence of future oriented instruction all other seminar components were the same as in the full instructional group.

8.3.3 Post-Instruction

The third event category involved a range of activities that occured after (post) seminar instruction. At the end of the semester before the course went offline, all students, regardless of instructional group, received a new web-link to the second questionnaire (post-test) within the parallel Accounting 101 course. A similar duration of approximately two weeks was provided to students for completion of the survey in order to ensure maximum participation. After two weeks, students could no longer access the questionnaire.

8.3.4 Transfer (post-post)

The experiment continued into the second semester in order to observe changes in student self-report surveys, indicating a possible transfer of future oriented instruction for students in the full instructional group, and for students who received modified instruction any observed changes would indicate instability or possible interaction with other dependent variables included in the study. Furthermore, a new group of first semester students (n = 12) was included in the study as a control group receiving no PDSM instruction at all (future oriented or non-future oriented)[20]. These students only completed the pre- and post-questionnaires as they were observed only for one semester.

At the beginning of the second semester, a final coaching session was held with the full instructional group. Similar procedures and materials (review of content, application of content to new course through individual worksheets, and general

[20] Administrational changes to the program curriculum at this time made such a control group possible since the PDSM course was moved to a later semester of study for all new students.

discussion) were presented and discussed, intending to aid in the transfer and application of future oriented concepts to new course material.

Toward the end of the second semester, all students, regardless of instructional group, received another web-link (this time within the common required English course for all students) to the third and final self-report questionnaire. Similar procedures were implemented in terms of access to the questionnaire. Upon completion, most students were finished with the experiment.

Additional data was collected through qualitative interviews that were conducted with a group of ten students (five from each instructional group) at the end of the second semester. Students were asked if they were willing to participate, and then an appointment was arranged for the online CHAT interview. Students were provided a new link to the interview via the online learning platform. These interviews were private, and each individual student had access only to their own interview. The interviews were conducted over two weeks ranging in duration from 30 minutes to 45 minutes.

After the interviews were finished, they were copied from the learning platform into RTF document-format required for the special software program facilitating qualitative analysis (MAXqda2, created by VERBI Software, Consulting and Social Research Company). Coding of the interviews employed a parallel system involving two readers for each coding phase. The focus of the coding procedure emphasised phrasal meaning rather than solitary words in order to remain true to the meanings and understandings of learning described by the participants in the interview.

The first phase of coding focused on identification of the major coding hierarchy upon which the interviews were based. Subsequent readings involved expansion of these themes in the inductive creation of sub-codes that were relevant to each main code. Three major coding phases were conducted on the interviews; after each phase, discrepancies were identified and evaluated by the readers, and a suitable code was generated and applied by both readers when differences emerged. The final coding structure is presented in section 12.1.5 (Appendix A).

8.4 Development of a Future Oriented Instruction

Future oriented instruction was examined in this current study at two different levels: content and transfer. Many studies in educational psychology have implemented “learning-to-learn” courses in order to assess and measure the varying degrees of student success or “non-success” in learning. The intent was to identify factors contributing to learner success, such as motivational beliefs and the use of self-regulated learning strategies (see McKeachie, Pintrich & Lin, 1985 for a detailed review of such a course offered at the University of Michigan). However, seldom have studies extended the assessment of student learning to other courses. This current program of research attempted to examine students as they learned within two courses: the “learning-to-learn” PDSM course, and a course in accounting (Accounting 101). Both of these courses were offered within the first semester of studies and participating students were enrolled in both courses. The intent was that such a simultaneous examination would provide new insight into the effects of such support courses on student learning in program specific courses. In general, the effects of future oriented instruction within a course designed specifically to enhance student learning and self-management skills are not as interesting as the effects of such courses on other program specific courses (in this case Accounting 101).

The instructional intervention employed in this study was designed to supplement an existing course titled “Personality Development and Self-Management” (PDSM) offered to students in all programs. It was a required course usually taken during one of the first three semesters. PDSM operated on the concept of increasing individual self-knowledge in order to make efficient use of time and activity to reach desired goals. The course presented a “recipe” for successful operation involving 5 main functions:

1. Situation analysis
2. Goal-setting
3. Decisions and planning
4. Operation and time management
5. Success control

Situation analysis involved reflection on oneself (gifts and abilities), personal dreams (wish-analysis), and the environment (external influences). Goal-setting arises out of the situation analysis resulting in meaningful personal goals. The third aspect of decisions and planning emphasised issues in making choices and decisions leading toward action. The operation phase focused on establishing an action plan, including successful time-management strategies (templates were provided for long-term, yearly, monthly, and daily planning). The final phase of success control encouraged reflection on whether goals had been achieved and moved students back toward a period of self-reflection, which began a new sequence of the five phases. Movement through these five phases was encouraged in the seminar with the help of individual worksheets, group discussions, instructor input, and personal examples.

Future oriented instruction took the five components of personality development and self-management to another level emphasising the connection between long-term future goals and a system of sub-goals that are more immediate to the tasks or activities at hand. This is an important connection to make for successful functioning in an academic environment. Based on the theory of future time perspective (the amount or degree of future relevance in daily activity) both individuals and environments can be influenced by a time orientation. Zimbardo's (1990) theory calls for a flexible time perspective that adapts to the demands of situation, context and environment. Students who have trouble recognizing the future relevance of what they are doing in immediate learning activities will have difficulties in academic environments which are demanding highly future focused performance. Instrumentality is a unique form of valence dealing with how immediate tasks are viewed: are they relevant or instrumental for achieving future goals, or do they have little connection to the future aspirations of the learner? Motivational theory recognizes the importance of forming and achieving goals that can be achieved in the near future, but there is also substantial evidence for the benefit of having concrete future goals that are systematically approached through the achievement and realisation of more proximal or immediate sub-goals.

This future goal/sub-goal relationship was the focus of future oriented instruction. While forming and defining future goals, along with effective time-management and planning of daily activities is important, motivation for learning can be improved and encouraged when there is meaning and relevance attached to proximal learning tasks, which are seen as instrumental to achieving relevant future goals.

8.4.1 Future Oriented Instruction

Instructional design models are developing rapidly as educational formats turn to the versatile offerings of educational technology (see section 5.2.3). Although instructional design models are heavily influenced by learning theories, there are common elements. Many reviews of instructional designs are available presenting an overview of both theory and operational elements (Gustafson & Branch, 1997) and recently there are very helpful websites and online documents providing comprehensive information and details, including many various models (see the website provided by the University of Missouri, St. Louis, 2006). There are five fundamental aspects that are common to many models of instructional design:

- What is the need for the educational program?
- What are the goals and objectives?
- Who are the learners?
- What is the subject content (message)?
- What teaching methods and technology (media) will be used?
- How will learners be assessed and how will a course or lesson design be evaluated and improved?

8.4.1.1 Need

The need for the educational program (PDSM course) had been identified by the institution as a means of supporting students in blended learning environments. This course is part of the efforts to offer instruction that is holistic (focused on the individual student as a person, not just on outcomes) encouraging personal growth and self-awareness. Recognizing the challenges of functioning in online environments, it attempts to offer helpful strategies and skills for optimal time efficiency. The need for future oriented instruction was identified through examination of the PDSM curriculum: Efforts to support student functioning, their motivation to engage in studies, and to accomplish relevant personal goals can be enhanced through inclusion of future oriented topics, such as instrumentality and future time perspective. PDSM addressed the students in general as participants; however future oriented instruction addressed the students as students – people who are involved in academic programs. It recognized that daily activities mean study and learning activities, and helpful concepts to increase motivation and learning strategies were provided within a context of future goals.

8.4.1.2 Goals & Objectives

The goal of future oriented instruction within this study was to enhance the connection between immediate, proximal learning activities and relevant future, distal goals. The instructional objectives listed below express the desired outcomes for students after successful participation:

- understand and apply effective goal-setting
- understand and apply concepts of distal and proximal sub-goal systems
- recognize the motivational aspects of personal future goals (instrumentality and relevance)
- evaluate and monitor performance compensating for deficits through revisions of relevance and usefulness value judgments

8.4.1.3 Learner Selection/Identification

The participants in PDSM were pre-established since the course was required for students in all programs. Specifically, the course targeted first semester students. Consequently, the course involved a few assumptions:

- unfamiliarity with online learning formats
- developing visions and aspirations for the future (not yet clearly defined)
- an experimental approach to self-reflection and decision making

Future oriented instruction extended from these aspects recognizing that many students were adult learners who were no longer "novices" in terms of life-planning, time-management or self-knowledge. In order to incorporate such students in a positive way, the instruction included informal discussions which encouraged these peer experts to communicate and share their knowledge and expertise in an open forum exploring the relevant course topics.

8.4.1.4 Subject & Content

The main topic of future oriented instruction was strengthening the perception that immediate (proximal) activities are instrumental for achieving relevant personal future (distal) goals. This was supported by introducing the following concepts and constructs:

- effective goal-setting strategies
- assistance in establishing proximal and distal goal systems

- awareness and understanding of perceived relevance and value for proximal tasks (instrumentality) and courses
- self-regulation (especially planning, monitoring and evaluating)
- the strategy of help-seeking (see section 4.2.3 and Karabenick, 2004) which supports the acquisition of knowledge as well as perceptions of relevance, value and instrumentality (seeking an expert opinion can help to broaden the scope of the subject or course in terms of its significance for a career or sector of employment).

8.4.1.5 Teaching Methods & Media

As supplemental material to PDSM, future oriented instruction built upon the methods and media already in use in that class.

- blended learning: combination of onsite and online instruction using Moodle learning management system. Future oriented instruction adds the element of pre-work to the PDSM design (see Figure 5.9)
- constructivist approach combining aspects of both problem-based learning and an inquiry approach.

8.4.1.6 Assessment & Evaluation

The final aspect of student assessment and instructional evaluation was addressed by the following measures: student assessment at the PDSM course level achieved through the completion of an end of course individual project which required students to apply concepts and strategies to concrete situations and experiences in their lives. Students received a grade for course completion. At the level of future oriented instruction, students were encouraged to engage in self-assessment and evaluation. This process was aided by the completion of worksheets that focused on the relevant topics. These were non-graded worksheets providing the subjects for discussions and individual revision during coaching sessions. General evaluation of the instructional intervention was achieved through the use of self-report instruments and qualitative interviews (select students) which were focused primarily upon the effects of such instruction on student motivation and self-regulated learning.

The problem (or question for investigation) in future oriented instruction dealt specifically with establishing a system of goals including proximal and distal goals that were relevant and connected to each other. In addition, the instruction emphasized the importance of being cognizant of how courses and subsequent tasks were perceived regarding relevance and value for the future. Students were not provided with answers or solutions; they themselves had to struggle with the concepts and constructs to determine how to successfully apply them to their own situations and experiences (or not). Supporting this challenge were a series of interactive coaching sessions which involved a typical cycle(s) of an inquiry-based model of instruction (Schneider, 2006) moving through five simple phases (repeating as, and if, necessary; see **Fehler! Verweisquelle konnte nicht gefunden werden.**).

Essentially, the model started with student generated questions relating to the topics covered in future oriented instruction. These questions were followed by investigation (students shared information and experiences that they had discovered, encountered or observed). Each coaching session allowed students to create new goals, apply the concepts of effective goal-setting within a system, and transfer the concepts to new courses and experiences. Discussion was encouraged and facilitated so students could re-explore the topics again within an interactive group setting. Reflections followed once more that were either incorporated in the flow of discussion or after the session as students continued to study in online phases.

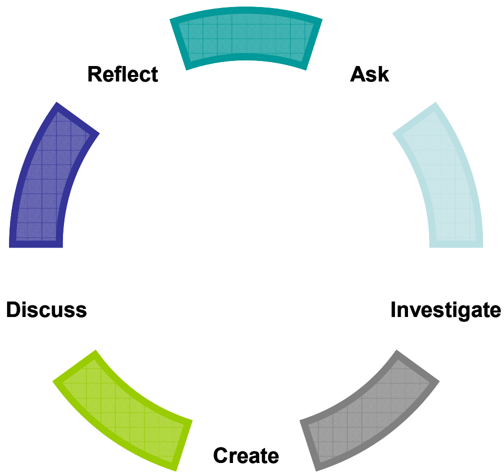


Figure 8.3. 5 Phases of inquiry-based instruction

Incorporating coaching as a method of instruction was appropriate to the subjects of personality development and self-management, and especially to the topic of proximal and distal goal formation within a context of future time perspective and instrumentality. In online learning environments, aspects of coaching and mentoring have been encouraged as effective instructional methods (Murphy et al., 2005), and within business sectors executive coaching has long been seen as an effective method for increasing individual organizational performance (Cocivera & Cronshaw, 2004). Coaching is viewed as supportive guidance and action that is focused on improving performance, including aspects of clear goal-setting, action plans and an optimistic approach to the future in terms of learning and future actions taken. Within constructivist learning environments the teacher-as-coach plays an important role in encouraging the development of effective task management skills and strategies for time management (Murphy et al., 2005).

8.5 Instruments

A variety of methods were used in this study to gather empirical data for analysis and examination. While the bulk of literature on student motivation and cognition has relied mainly on student self-report surveys or on qualitative interviews, both methods have been operationalized in this study in response to the recent call for research employing a triangulation of methods (Pintrich, 2000; Winne & Perry, 2000; Butler, 2002). Student records of achievement were included for data regarding grades at a cumulative level (GPA prior to study commencement at UAM) and course level (course grade calculated at the end of the relevant semester). Already existing self-report questionnaires developed by experts in the field were included as the main method of obtaining data on student time perspective, motivation and cognition. Finally, semi-structured interviews were employed as a means of gaining further insight into the factors and constructs examined in the questionnaires. Full versions of the self-report questionnaire and the semi-structured interview questions are included at the end of this dissertation in section 12.2 (Appendix A).

8.5.1 Student Achievement

Data on student achievement is relevant for this current research which views achievement as an indicator or outcome of motivated students who engage in self-regulation. Comparisons were made in terms of instructional group, student perceived time perspective and reported goal orientation. This data was helpful in determining whether student achievement is consistent over time.

8.5.1.1 Cumulative GPA

Student cumulative GPA was recorded at UAM in normal admission procedures. In order to be accepted for study, all students needed to have completed at least high school matriculation or equivalent (in Germany there is an academic and vocational stream in secondary education). The GPA of each participant was included as a variable in this study measured by a score out of 100 points (percentage).

8.5.1.2 Course Grades

Given the unique intent of this study to examine impact of future oriented instruction within other program specific courses, student data included the final grades for two courses over one semester and three courses over two semesters: PDSM (instructional intervention – 1^{st} semester), Accounting 101 ("impact" course – 1^{st} semester), and English 2 ("impact" course – 2^{nd} semester). Student grades for each course were calculated in a similar fashion as the cumulative grades and scored for the study out of 100 points (percentage).

8.5.2 Self-report Questionnaires

The pre/post questionnaires made use of three different standardized instruments to identify the factors of student time perspective, motivational beliefs and cognition.

Time Perspective:

- *Zimbardo Time Perspective Inventory* (Short) – Zimbardo and Boyd (1999)

Motivational Beliefs:

- *Motivated Strategies for Learning Questionnaire – Pintrich et al (1991)*

- *Achievement Goals Questionnaire* – Elliot and McGregor (2001)

Cognition:

- *Motivated Strategies for Learning Questionnaire* – Pintrich et al (1991)

8.5.2.1 MSLQ

MSLQ is a self-report instrument designed to assess college students' motivational orientations and their use of different learning strategies at the course level. It is based on a social cognitive approach to motivation and learning strategies, and views the student as an active processor of information whose beliefs and cognitions mediate important instructional input and task characteristics (Garcia & McKeachie, 2005). Starting in 1986, its development involved three waves of data collection over three years. Revisions were made after each wave was complete, and the final version consists of 6 motivation subscales and 9 learning strategies scales with a total of 81 items. For a detailed review of the instrument, its theoretical framework and scale development see Pintrich & De Groot (1990); Pintrich et al. (1993); Garcia & McKeachie (2005).

The motivation section (31 items) used in this current study measured student beliefs regarding their goals and values for a course, their skills to succeed, and their anxiety for tests. The learning strategy section included 31 items regarding student cognitive and metacognitive strategy use. An additional 19 items focused on strategies for management of different resources. All scales included in the MSLQ have been designed to be used together or separately according to the needs of the researcher.

Items were scored on a 7-point Likert scale ranging from 1 (not at all true of me) to 7 (very true of me). Scale scores were constructed by taking the mean of the items that make up that scale. All negatively worded items and ratings were reversed before an individual's score was calculated; consequently reported statistical analysis represents the positive wording of all the items.

Permission to use the MSLQ in this current program of research was obtained from the National Center for Research to Improve Post-secondary Teaching and Learning (NCRIPTAL). Certain scales were omitted due to the theoretical framework that has already been presented. From the motivational section, the scale dealing with anxiety was omitted because of its focus primarily on test anxiety, which did not coincide with the assessment measures for the courses involved. The two scales dealing with the value components of intrinsic and extrinsic goal orientation were omitted since this study made use of more differentiated goal orientation constructs (see section 3.3.2). From the learning strategies section, the scales dealing with the cognitive information processing strategies of rehearsal, elaboration, organization and critical thinking were omitted since they emphasized the relationships between SRL and motivation through goals and goal setting which were addressed in the scale for metacognitive self-regulation. In total, 8 out of the 15 possible scales were employed in this study, including the following (see Table 8.1 for a complete overview including scale and subscale reliability):

- Motivation Scales: control beliefs; self-efficacy; task value.
- Learning Strategies Scales: metacognitive self-regulation; time and study environment; effort regulation; peer learning; help seeking.

Table 8.1. Summary of employed MSLQ scale/subscale reliability

Scale/subscale	***alpha*** [a]	**Sample item** (total number of items)
MSLQ	(Likert Scale 1-7)	
Control Beliefs	.94	It is my own fault if I don't learn the material in this course. (4)
Self-Efficacy	.85	I think I will receive a good grade in this class. (6)
Task Value	.88	Understanding the subject matter of this course is very important to me. (6)
Metacognitive SRL	.78	I ask myself questions to make sure I understand the material I have been studying in this class. (12)
Effort Regulation	.17	I work hard to do well in this class even if I don't like what we are doing. (4)
Time/Study Environment	.35	I usually study in a place where I can concentrate on my course work. (8)
Peer Learning	.77	I try to work with other students from this class to complete the course assignments. (3)
Help Seeking	.38	When I can't understand the material in this course, I ask another student for help. (4)

Notes: [a] Cronbach's alpha

8.5.2.2 Achievement Goals Questionnaire

The work of Elliot and colleagues that has explored and expanded goal orientation constructs in terms of achievement and competence motivation has culminated in a comprehensive framework of analysis that incorporates mastery/performance and approach/avoidance in a 2x2 matrix (see section 3.3.2 for a more detailed explanation of the theoretical background and development). Measurement of these constructs has been operationalised by Elliot and McGregor (2001) in the design of four scales – one for each of the goal orientation constructs. Each scale consisted of three items[21] that were scored on a 7-point Likert scale ranging from 1 (not at all true of me) to 7 (very true of me). Scale scores were constructed by taking the mean of the items making up that scale; no reverse scoring is necessary. The original instrument includes additional measures for competence expectancies (using items taken from Elliot & Church, 1997), as well as challenge and threat appraisals (using items taken from Elliot & Reis, 2003) in order to reduce the likelihood that participants will get into a response set when responding to the questionnaire. For this current research project, these additional scales were omitted since the length and number of items dealing with other factors already facilitated this precaution. In total, 5 out of a possible 7 scales were included in this study consisting of 15 items, including the following (see Table 8.2 for a complete overview including scale and subscale reliability):

- Mastery-Approach; Mastery-Avoidance; Performance-Approach; Performance-Avoidance.

Table 8.2. Summary of employed Achievement Goal scale/subscale reliability

Scale/subscale	***alpha*** [a]	**Sample item** (total number of items)
Achievement Goals	(Likert Scale 1-7)	
Mastery-Approach	.70	I desire to completely master the material presented in this class. (3)
Mastery-Avoidance	.62	I worry that I may not learn all that I possibly could in this class. (3)

[21] The one exception was Performance-Avoidance which has 6 items. This scale included 3 extra items measuring normative representation of this construct explicitly stating the "other" or normative comparison aspect (e.g. "I just want to avoid doing poorly in this class compared to others.").

Performance-Approach	.94	My goal in this class is to get a better grade than most of the other students. (3)
Performance-Avoidance	.79	My goal for this class is to avoid performing poorly. (6)

Notes: [a] Cronbach's alpha

8.5.2.3 ZTPI (Short)

Arising from the results of the Stanford Prison Experiment (as cited in Zimbardo & Boyd, 1999) as well as personal experiences and observations, the Zimbardo-Time-Perspective-Inventory attempts to explain alterations occurring in the subjective time sense of individuals: "Growing up in poverty led Zimbardo to realize that his family and friends were prisoners of a fatalistic present. Education liberated him, and others, into a more future-oriented realm of existence" (Zimbardo & Boyd, 1999, p. 1273). The inventory is a 56-item self-report survey identifying beliefs, preferences and values regarding experiences that are temporally based in either past, present or future (Zimbardo & Boyd, 1999). Five possible time perspectives have been incorporated in the inventory: past-negative, past-positive, present-hedonistic, present-fatalistic, and future (see section 2 for a more detailed explanation of these time perspectives). Each scale representing a time perspective used a 5-point Likert scale ranging from 1 (very uncharacteristic) to 5 (very characteristic). Since each of the time perspective scales were independent, scoring was applied separately to each of the 5 scales. After reversing the relevant items, scores were constructed by taking the mean of the items that made up that scale.

This current research program followed the practice outlined in various studies by Zimbardo and colleagues (Gonzales & Zimbardo, 1985; Zimbardo, 1990; D'Alessio, Guarino, De Pascalis & Zimabardo, 2003) in their research employing a short version of the inventory focusing on the three time perspective scales that are the most relevant in academic environments. These three scales, consisting of 37 items in total, include the following (see Table 8.3 for a complete overview including scale and subscale reliability):

- Future; Present-Hedonistic; Present-Fatalistic (see Figure 2.2)

Table 8.3. Summary of employed ZTPI scale/subscale reliability

Scale/subscale	*alpha* [a]	**Sample item** (total number of items)
ZTPI	(Likert Scale 1-5)	
Future	.55	When I want to achieve something, I set goals and consider specific means for reaching those goals. (13)
Present-Hedonistic	.85	It is more important for me to enjoy life's journey than to focus only on the destination. (15)
Present-Fatalistic	.62	My life path is controlled by forces I cannot influence. (9)

Notes: [a] Cronbach's alpha

8.5.3 Qualitative Interviews

Many researchers have called for a combination of both quantitative and qualitative methods in order to achieve a more complete understanding of the various processes and factors affecting learning (Butler, 2002; Winne & Perry, 2000; Malka & Covington, 2005). Recent efforts over the last decade have resulted in an approach that emphasises the compatibility of the two research methods (Mayring, 1999). Without integration, it is impossible to reach an answer to the relevant research questions.

Many types of qualitative methods are possible for use, however, given the nature of the standardized self-report questionnaires that were used in this current study, the integration of a semi-structured interview was seen as most promising for inclusion. Such a format also facilitated a clear and structured analysis of the literature based on codes derived from the theoretical literature relevant to the themes of this study (Seale, 2001).

The purpose of qualitative interviewing is to understand others' meaning making (Warren, 2001). The questions designed and compiled for the semi-structured interview focused on student ability to express their understanding of the relevant topics. Of special interest was in how students were able to identify and express the interrelationships between perceived FTP and instrumentality, motivation, and SRL. Goal orientation and also goal setting were very important as concrete realisations of these constructs. These types of interrelationships have been examined in previous literature (Pintrich et al., 1999; Vialpando De Groot, 2002), and are still current themes of debate and scientific enquiry (Pintrich, Conley & Kempler, 2003; Bråten & Olaussen, 2005).This type of exploration extended the hypothesised model of all dependent variable categories (see Figure 9.1).

Considerable thought was given to the decision of interview methodology, especially in terms of using face-to-face methods, or online computer assisted methods. After an initial comparison test of a traditional recorded interview and an online CHAT interview, the latter was selected for the following reasons:

- Familiarity, ease and comfort (for the interviewee)
- Ease of creating a transcript (interviewer)

- Administrational and logistical factors(interviewer/ interviewee), since many of the students lived in different parts of Germany making face-to-face interviews within the given time line next to impossible

Current research in computer learning environments has presented many opportunities and challenges for qualitative research. One concern in using computer assisted interview methods has related to the length and quality of responses to open ended questions (Couper & Hansen, 2001). However, given the use of semi-structured protocol for the interviews conducted in this current study, length of student answers were not foreseen to be problematic. Another concern in using computer technology in an interview setting has been the effects of the new technology on interviewers and interviewees (Couper & Hansen, 2001). This was not a concern in this current study since students and interviewers were already familiar with CHAT interviews from private and other online course involvement during their program of studies.

8.6 Statistical Measures

The current program of research was divided into three main levels of investigation each applying different statistical analysis. The first investigation examined participants over one semester (pre/post questionnaires, preGPA, and course GPA for PDSM and Accounting 101). The second investigation extended the examination of participants over two semesters (pre/post/post questionnaires, preGPA, and course GPA for PDSM, Accounting 101, and GPA for English 2. The number of participants decreased over two semesters, therefore separate investigations allowed for a more robust statistical comparison of the instructional groups. The third investigation examined the qualitative data gathered from semi-structured interviews with select students from each instructional group (except the non-instruction group). This qualitative data was included in the study in order to further insight into relationships between the factors examined, and to confirm that the students were able to express and articulate their understanding of the variables that they reported values for in the quantitative questionnaires.

8.6.1 Investigation 1

The first investigation employed a 2x2 factorial design involving the independent variables of instruction (full vs. modified) and FTP (high vs. low). The purpose of this investigation was to observe the effects of instruction and the effects of having high (or low) degrees of FTP. Due to the nature of the design for this investigation, statistical analyses involved multivariate analysis of variance (MANOVA). These analyses were performed across all dependent variables[22] presented in the three categories of motivational beliefs, SRL, and achievement (please refer to Table 8.4 for more detailed summary statistics for each dependent variable). An additional form of statistical control was the comparison to a group of participants who did not receive any instruction. Although the number of student in this group was limited to only twelve, it has been in the study as a control measure of validity to verify if student levels on the dependent variables change without receiving instruction. Caution is necessary due to the small sample when interpreting the results and findings of the statistical analyses.

[22] The only dependent variable not included in this particular MANOVA were the final achievement variable of the course GPA for English 2. This course occurred in the second semester, so it was not applicable to this investigation which focused on the first semester.

Table 8.4. Summary statistics for dependent variables (Investigation 1)

	Instruction[a]					
	Full (Future Oriented)		Modified (non-Future)		Control (non-instruction)	
	(*n* = 44)		(*n* = 38)		(*n* = 12)	
Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*
Time Perspective (max. = 5)						
Future	3.40	0.40	3.44	0.40	3.47	0.47
Present-Hedonistic	3.23	0.60	3.16	0.68	3.24	0.57
Present-Fatalistic	2.67	0.46	2.60	0.59	2.68	0.42
Goal Orientation (max. = 7)						
Mastery-Approach	4.82	1.29	4.95	0.80	5.28	0.79
Mastery-Avoidance	3.66	1.17	4.04	1.21	3.39	0.90
Performance-Approach	3.39	1.80	2.97	1.67	3.72	1.26
Performance-Avoidance	4.06	1.23	3.57	1.13	3.72	1.06
Motivational Beliefs (max. = 7)						
Control Beliefs	5.07	1.00	4.91	0.91	4.42	0.94
Self-Efficacy	4.70	1.20	4.57	0.91	4.58	0.95
Task Value	4.47	1.31	4.43	1.10	4.79	0.92
Self-Regulated Learning (max. = 7)						
Metacognitive SRL	4.09	0.81	4.09	0.77	3.94	0.86
Effort Regulation	3.84	0.90	3.62	0.74	3.90	0.64
Time/Study Environment	4.58	0.74	4.28	0.62	4.61	0.48
Peer-Learning	3.38	1.39	3.26	1.46	3.08	1.62
Help-Seeking	4.05	1.01	3.62	1.09	3.98	1.13
Achievement (max. = 100)						
Pre-GPA	66.77	8.08	66.68	8.71	70.92	9.35
GPA-Accounting 101	69.39	13.69	66.03	14.43	68.25	12.04
GPA-PDSM	72.18	9.51	77.21	10.23	n/a	n/a

Note: [a] Total sample (N = 94); [b] Cronbach

8.6.2 Investigation 2

The second level of investigation employed a variety of statistical measures in order to more closely examine the relationship between time perspective, goal orientation, motivational beliefs, SRL, and academic achievement. Regression analyses were conducted to explore the hypothesized model (see Figure 9.1) presented in this current study for the role of FTP in predicting academic achievement.

In order to explore the change and dynamic interplay of the dependent variables included in the study, repeated measures ANOVAs were conducted on each variable across the three periods of measurement (Time 1, Time 2, Time 3). An extended overview of summary statistics is presented Table 8.5, which is helpful for all of the statistical measures applied in this second level of investigation.

Table 8.5. Summary statistics for dependent variables (Investigation 2)

Scales *(Cronbach's alpha)*				Time 1				Time 2				Time 3			
				Full (n = 44)		Modified (n = 38)		Full (n = 44)		Modified (n = 38)		Full (n = 44)		Modified (n = 38)	
	Time1	*Time2*	*Time3*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Time Perspective (1-5)															
Future	.38	.51	.57	3.49	0.34	3.44	0.40	3.40	0.40	3.44	0.40	3.57	0.37	3.49	0.42
Present-Hedonistic	.83	.85	.84	3.28	0.55	3.16	0.68	3.23	0.60	3.16	0.68	3.37	0.53	3.28	0.67
Present-Fatalistic	.53	.63	.64	2.63	0.46	2.60	0.59	2.67	0.46	2.60	0.59	2.75	0.42	2.62	0.60
Goal Orientation (1-7)															
Mastery-Approach	.62	.71	.61	5.10	0.99	5.10	0.99	4.82	1.30	4.95	0.80	5.06	1.05	5.29	0.84
Mastery-Avoidance	.67	.62	.69	4.25	1.21	4.25	1.21	3.66	1.17	4.04	1.21	3.72	1.26	3.90	1.29
Performance-Approach	.91	.94	.95	3.92	1.54	3.92	1.54	3.39	1.80	2.97	1.67	3.61	1.67	3.15	1.72
Performance-Avoidance	.82	.80	.87	4.02	1.12	4.02	1.12	4.06	1.23	3.57	1.13	3.70	1.28	3.48	1.26
Motivational Beliefs (1-7)															
Control Beliefs	.42	.52	.62	5.11	0.84	5.11	0.84	5.07	1.00	4.91	0.91	5.10	0.99	5.25	0.90
Self-Efficacy	.76	.85	.84	4.56	0.94	4.56	0.94	4.70	1.20	4.57	0.91	4.94	1.11	4.80	0.77
Task Value	.86	.89	.88	4.83	1.21	4.83	1.21	4.47	1.31	4.43	1.10	4.94	1.23	4.78	1.05
Self-Regulated Learning (1-7)															
Metacognitive SRL	.56	.77	.71	4.28	0.63	4.28	0.63	4.09	0.81	4.09	0.77	4.18	0.66	4.24	0.72
Effort Regulation	-.21	.20	.08	3.84	0.72	3.84	0.72	3.84	0.90	3.62	0.74	3.80	0.67	3.91	0.84
Time/Study Environment	-.12	.39	.20	4.64	0.50	4.64	0.50	4.58	0.74	4.29	0.62	4.70	0.56	4.44	0.61
Peer-Learning	.62	.75	.74	3.41	1.19	3.41	1.19	3.38	1.39	3.26	1.46	3.48	1.31	3.57	1.57
Help-Seeking	.38	.36	.39	4.43	0.96	4.43	0.96	4.05	1.01	3.62	1.09	4.24	1.08	3.86	1.01
Achievement (100 points)															
Course Grade				66.77	8.08	66.68	8.71	72.16	9.54	77.21	10.23	78.11	9.45	77.58	7.59

8.6.3 Investigation 3

The last investigation involved qualitative interviews with 10 students (5 from each of the instructional groups (full and modified). The purpose of this investigation was to gain insight into the understanding and awareness that students had regarding knowledge and learning, especially in terms of time perspective, goal orientation, motivational beliefs, and SRL. An overview of descriptive information on interview participants is provided in Table 8.6. As stated in this table, the instructional groups have been distinguished by the participant code (full instruction is coded with the letter “A”, and modified instruction is coded with the letter “B”).

Table 8.6. Summary information for interview participants

Participant code	**Group**	**Gender**	**Age**	**Work (hrs/wk)**	**FTP (H/L)**
A05	Full	F	31-40	20	H
A22	Full	M	18-23	24	L
A37	Full	M	24-30	0	H
A45	Full	F	18-23	25	L
A46	Full	M	24-30	40	H
B24	Modified	M	24-30	15	H
B33	Modified	M	41-50	35	H
B45	Modified	M	18-23	0	H
B46	Modified	F	18-23	0	H
B48	Modified	F	50+	60	H

The sample of 10 students who agreed to participate in the interview consisted of 5 students from each instructional group (full and modified). The age-range of interview participants was widespread: four students were between the age of 18 and 23; four students were between 24 and 40; and two students were over 40.At the time of the study, most of the participants (7) were employed (mean hours per week = 31.28), while three students were unemployed. According to the information collected from the quantitative surveys, all five students who received non-future oriented instruction (modified) reported levels classifying them as having a high FTP (for an explanation of how high/low FTP is calculated see section 9.2.2). For the other five students who received future oriented instruction (full), three were classified as having a high FTP, and two were classified as having low FTP.

9 RESULTS

9.1 Investigation 1

This first investigation focuses on the main hypothesis regarding positive instructional effects (rejecting the null hypothesis). In order to examine this assumption, MANOVAs were carried out with instructional group (future oriented; non-future oriented; non-instruction) and degree of perceived FTP (high; low) as the between-subject factors for each of the five categories of dependent variables[23]. An alpha level of .05 was used for all statistical tests.

Due to the variations in sample size for groups resulting from these comparisons, and the number of dependent variables under examination, separate MANOVAs were carried out for each of the categories in order to preserve maximum power in the test statistics (Field, 2000).

The test assumptions were met regarding multivariate normality (assumed due to non-significance of Shapiro and Wilk's univariate test results) and Box's test of equality of covariance matrices ($p > 0.05$), which is a valid measure for this analysis given unequal sample sizes. A summary of both multivariate (Pillai's) and univariate tests is provided in Table 9.1. According to the between-subjects univariate analyses, each category indicated significant differences on at least one variable.

[23] Bivariate correlations were conducted for all pre-post dependent variables. All correlation coefficients were significant ($p < 0.05$, onesided) except for grades for PDSM. Therefore, pre-test scales were not included as covariates in the MANOVAs.

Table 9.1. Summary statistics for MANOVA series

		Univariate Statistics			Multivariate Statistics		
Variables	**Effects**	*F*	*p*	*eta*^{2}	*F*[a]	*p*	*eta*^{2}
Goal Orientation					1.66	0.17	0.07
Mastery-Approach	Group	1.10	0.34	0.02			
	FTP	4.35	**0.04***	0.05			
	Group x FTP	0.35	0.70	0.01			
Mastery-Avoidance	Group	1.59	0.21	0.35			
	FTP	1.74	0.19	0.02			
	Group x FTP	0.01	0.99	0.00			
Performance-Approach	Group	0.68	0.51	0.01			
	FTP	1.56	0.21	0.02			
	Group x FTP	2.63	0.08	0.06			
Performance-Avoidance	Group	2.00	0.14	0.04			
	FTP	1.00	0.32	0.01			
	Group x FTP	0.56	0.57	0.01			
Motivational Beliefs					1.42	0.24	0.05
Control Beliefs	Group	3.14	**0.05***	0.07			
	FTP	0.66	0.42	0.01			
	Group x FTP	3.02	0.05	0.06			
Self-Efficacy	Group	0.37	0.69	0.01			
	FTP	1.72	0.19	0.02			
	Group x FTP	0.37	0.70	0.01			
Task Value	Group	0.55	0.58	0.01			
	FTP	4.05	**0.05***	0.04			
	Group x FTP	0.15	0.86	0.00			
SRL & Learning Strategies					5.68	**0.00****	0.25
Metacognitive SRL	Group	0.00	1.00	0.00			
	FTP	12.37	**.001****	0.12			
	Group x FTP	1.84	0.16	0.04			
Effort Regulation	Group	1.06	0.35	0.02			
	FTP	2.77	0.10	0.03			
	Group x FTP	0.18	0.83	0.00			
Time/Study Environment	Group	2.01	0.14	0.04			
	FTP	8.03	**0.01****	0.08			
	Group x FTP	0.17	0.84	0.00			
Peer Learning	Group	0.48	0.62	0.01			
	FTP	0.15	0.70	0.00			

	Group x FTP	0.93	0.40	0.02
Help Seeking	Group	1.06	0.35	0.02
	FTP	5.94	**.017***	0.06
	Group x FTP	2.04	0.14	0.04

Note: [a] multivariate (Pillai's), * $p < 0.05$, ** $p < 0.01$

9.1.1 *Effects of Instruction*

9.1.1.1 *Motivational Beliefs*

There was only one dependent variable showing significant differences at the group level of comparison: control beliefs ($p < 0.05$). Closer examination of the pairwise comparisons revealed that students receiving future oriented (full) instruction reported higher levels of control beliefs than students in the non-future oriented (modified) and non-instruction (control) groups, however the differences in variation were not significant.

To follow-up on the MANOVA, simple contrasts (first) were applied at the group level. For the control beliefs variable, the contrast between non-instruction and full-instruction groups was significant ($p < 0.05$). The confidence interval does not cross zero. Therefore, there is a good chance to observe group differences on this variable (95%) if applied to other samples from the same population.

These results indicated that a discrepancy between multivariate and univariate analyses occurred for the category of motivational beliefs for the variable control beliefs. It is possible that this is due to the fact that the groups involved in the examination differ along a combination of the dependent variables in this category; therefore, to see how the dependent variables interact other statistical procedures are required, such as discriminant function analysis (Field, 2000).

A discriminant analysis of the category motivational beliefs (control beliefs, self-efficacy, and task value) at the group level was non-significant (Wilk's Lambda, $p > 0.05$). A confirmatory one-way ANOVA examining control beliefs across the groups was also non-significant ($p > 0.05$). However, using FTP as the grouping variable, discriminant analysis of the motivational beliefs variables are significant (Wilk's Lambda, $p < 0.05$). This significance can be explained through the variables of self-efficacy and control beliefs, of which self-efficacy contributes the most to group separation (since it has the highest canonical variate correlation coefficient of the three dependent variables). Control beliefs is also important, but in relation to the other variables. Since it has a negative value that is close to -1, it confirms that any group differences are due to difference between variables.

9.1.2 Effects of FTP

All other significant differences were observed with the between-subjects factor of FTP degree.

9.1.2.1 Goal Orientation

Goal orientation indicated significant differences for mastery-approach ($p < 0.05$).

9.1.2.2 Motivational Beliefs

The only significant motivational beliefs variable using FTP as the grouping variable was task value ($p < 0.05$); however this level is almost non-significant. Post-hoc ANOVAs performed across both independent variables (group and FTP) revealed another significant difference in the dependent variable of self-efficacy. Using the

Bonferroni test statistic for the Post Hoc ANOVAs, it is evident that students high in FTP have significantly different levels of self-efficacy than low-level FTP ($p < 0.05$).

The very low, almost non-significant, level of differences between students compared in terms of high/low FTP for the dependent variable task value were surprising[24]. According to theory on FTP and instrumentality, value in a task should be quite high for people who are identified as having a strong FTP recognizing the future value for the task. Further analysis was conducted to explore this result in greater detail.

As part of the demographic analysis of the participants, 5 items were included to assess reasons for participating in the course. Two of them related to the perceived future value (instrumentality) of the course – namely, usefulness and career importance. Therefore, these aspects were examined through correlation of mean task value and reasons for course participation (reason-usefulness & reason-career).

Without controlling for type of instruction or level of FTP, results of the Pearson correlation analysis indicated a significant relationship between mean task value and reason-career ($r = 0.21$, $N = 94$, $p < 0.05$, one tail). The correlation analysis was repeated, this time controlling for level of FTP (binary – high/low). For students with low FTP ($n = 35$), no significant correlations were evident between mean task value and reason for course participation. However, for students with high FTP there was a significant correlation between mean task value and reason-career ($r = 0.31$, $n = 59$, $p <$

[24] A reason for this might be in the item formulation for task value, since Pintrich and colleagues (1991) interpret task value in terms of the more general question of “what do I think about doing this task?” (e.g. “I think I will be able to use what I learn in this course in other courses.”).

0.01, one tail). Having high FTP appears to increase the significance of career aspects for task value.

A final repetition of the correlation analysis controlling for instruction (see Table 9.2) revealed that students receiving future oriented instruction (full) reported levels for task value that correlated significantly with usefulness as a reason for course participation (r = 0.28, n = 44, p < 0.05, one tail). Modified instruction (non-future oriented) indicated similar results as before: levels reported for task value correlated significantly with reason-career (r = 0.34, n = 38, p < 0.05, one tail). For the non-instruction group (n = 12), no significant relationship between task value and reason for course participation were observed.

Table 9.2. Correlation matrix of task value and reason for course participation

Full Instruction (n = 44)	**Time 1** *M* 4.5 *SD* 1.31	**Time 2** 0.5 0.51	**Time 3** 0.2 0.37
1. Task Value (max.=7)	--.		
2. Reason-Career (0=no; 1=yes)	0.11	--.	
3. Reason-Usefulness (0=no; 1=yes)	**0.28***	0.19	--.
Modified Instruction (n = 38)	**Time 1** *M* 4.4 *SD* 1.10	**Time 2** 0.4 0.50	**Time 3** 0.3 0.45
1. Task Value (max.=7)	--.		
2. Reason-Career (0=no; 1=yes)	**0.34***	--.	
3. Reason-Usefulness (0=no; 1=yes)	0.94	-0.25	--.
Non-Instruction (n = 12)	**Time 1** *M* 4.8 *SD* 0.91	**Time 2** 0.7 0.49	**Time 3** 0.2 0.45
1. Task Value (max.=7)	--.		
2. Reason-Career (0=no; 1=yes)	0.13	--.	
3. Reason-Usefulness (0=no; 1=yes)	-0.19	0.00	--.

Note: * p < 0.05 (one-tailed)

9.1.2.3 SRL and Learning Strategies

SRL and learning strategies indicated many variables with significant differences, namely metacognitive-SRL ($p < 0.05$), time/study environment management ($p < 0.01$), and help-seeking ($p < 0.01$). Pairwise comparisons of these differences revealed that students with high levels of FTP reported higher levels for all of these variables, regardless of instructional group.

To follow-up on the MANOVA simple contrasts (last) were applied at the FTP level. For Metacognitive SRL, the contrast between low-FTP and high-FTP was significant ($p < 0.05$). Therefore, the likelihood of observing similar differences in Metacognitive SRL between students with high and low levels of FTP in other samples of the same population is fairly high (95%). This finding was supported in the Post Hoc analysis and was significant (Bonferroni, $p < 0.05$) indicating that high FTP also resulted in high metacognitive SRL (at least self-reported).

9.2 Investigation 2

Efforts to gain a better understanding of the data for this study continued into the second level of investigation which had three purposes:

- To complete the main hypothesis examination of instructional effects by addressing the influence of future oriented instruction and FTP on academic achievement.
- To explore the hypotheses regarding the relationship between perceived time perspective and the four other categories of variables included in the study (goal orientation, motivational beliefs, SRL, and achievement).

- To explore the hypotheses regarding the stability or change in FTP and other dependent variables over the three phases of measurement.

Statistical operation of the first two purposes involved two series of regressions (an alpha level of .05 was used for all statistical tests). The first regression series tested the hypothesized model based on the theoretical background for this study in terms of how it predicts achievement. The second regression series examines the role of FTP in relationship to goal orientation, motivational beliefs and SRL.

The third purpose applied repeated measures statistics across the three time-frames examining within-subjects effects for each dependent variable and between-subjects effects for instructional group, gender and age.

Since the sample was reduced for this investigation (the non-instructional group was omitted due to non-participation in the third phase of measurement), an adapted overview of summary statistics is provided in Table 8.5.

9.2.1 Predicting Achievement - Regression Series 1

Correlations between all dependent variables were examined, in order to address the issue of multicollinearity before the regression analysis (see Table 9.3). A few of the predictors for the initial regression do correlate significantly with each other, however none are at a level high enough to be a concern (above.80 or.90) according to Field (2000).

Table 9.3. Zero-order correlations for dependent variables

	FTP	PH	PF	Map	Mav	Pap	Pav	Cbel	Seff	Tval	Mcg	Efrt	T/S	PL	HSK
FTP	--														
PH	.02	--													
PF	.04	**.36****	--												
Map	.21	-.07	-.02	--											
Mav	-.22*	**.23***	**.36****	.12	--										
Pap	**.32****	-.12	.18	**.23***	.12	--									
Pav	**.23***	-.11	.11	**.27***	.16	**.64****	--								
Cbel	.08	-.12	-.19	.07	.00	.07	.11	--							
Seff	.18	-.09	-.09	**.43****	**-.36****	**.31****	**.27***	**.30***	--						
Tval	.16	-.05	-.12	**.71****	.04	.06	.18	.01	**.41****	--					
Mcg	**.46****	.12	.14	**.45****	**.23***	**.27***	**.37****	.04	.06	**.28***	--				
Efrt	-.07	.05	.09	-.04	**.33****	**.23***	**.31****	.11	-.17	-.15	.20	--			
T/S	**.24***	.05	.04	**.37****	-.11	.14	**.34****	-.13	**.36****	**.39****	**.29***	**.24***	--		
PL	.05	.05	**-.25***	.19	**-.23***	.10	.19	.04	.21	**.24***	.11	.12	.16	--	
HSK	.21	-.05	-.16	**.26***	-.06	.20	**.30***	-.01	**.23***	**.35****	**.25***	.19	**.37****	**.54****	--
Grade	.11	.00	.07	**.30****	.17	-.06	-.02	.06	.00	.10	**.22***	.10	.15	.00	-.19

Note: * ($p < .05$); ** ($p < .01$)

9.2.1.1 Hypothesized Model

Since the actual course of instruction (PDSM) indicated many possible relationships between dependent variables and achievement, the GPA for this course was included in the regression to assess the hypothesized model (see Figure 9.1).

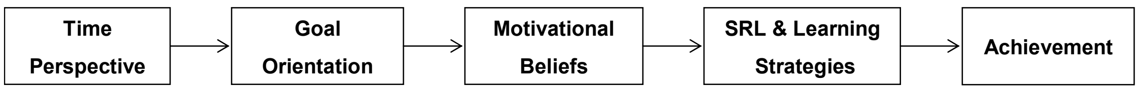


Figure 9.1. Hypothesised model of dependent variable categories

This hypothesised model is a variation on Elliot & Church's (1997) study that identified a comprehensive model illustrating both antecedents and consequences of adopted goal orientations in a college academic context. Their model is expanded in the current study by adding the category of "operations" (represented by the motivational beliefs and SRL variables), and the addition of time perspective to the antecedent category. This addition is an innovation to the body of literature dealing with competence motivation and educational research on learning processes. A sequence of multiple regressions was conducted to verify the proposed model.

Table 9.4. Multiple regression prediction of student achievement by time perspective, goal orientation, motivational beliefs and SRL and learning strategies

Criterion	**Predictors**	***R*2**	***F* (15, 66)**	***ß***	***t***
Acheivement					
	Model	0.32	2.05*		
	Time Perspective (5)				
	Future			0.13	1.03
	Present-Hedonistic			-0.13	-1.11
	Present-Fatalistic			0.05	0.40
	Goal Orientation (7)				
	Mastery-Approach			0.40	**2.33***
	Mastery-Avoidance			0.17	1.17
	Performance-Approach			-0.16	-1.04
	Performance-Avoidance			-0.13	-0.87
	Motivational Beliefs (7)				
	Control Beliefs			0.05	0.39
	Self-Efficacy			-0.03	-0.17
	Task Value			-0.18	-1.06
	Self-Regulated Learning (7)				
	Metacognitive SRL			0.10	0.68
	Effort Regulation			0.10	0.69
	Time/Study Environment			0.22	1.51
	Peer-Learning			0.24	1.75
	Help-seeking			-0.43	**-3.14****

Note: * ($p < .05$); ** ($p < .01$)

The first regression performed was hierarchical in nature based on a model from a synthesis of past research in the field of educational psychology dealing with motivational factors and self-regulated learning.

Metacognitive SRL and the other variables dealing with learning strategies were included as the first predictors in the model. Many researchers have examined the effects of self-regulation and appropriate learning strategies on academic achievement (Nota, Soresi & Zimmerman, 2004) as well as the relationship between SRL and motivation (Pintrich, 2000).

The second set of predictors in the model was self-efficacy, which has had a powerful impact on how students learn and perform in academic settings (Pajares, 1996) and other motivational factors of control beliefs and task value. The influence of student motivation involves many factors (Bong, 2001), including the constructs of goal orientations – the third set of predictors in the model.

Although the literature does not explain the influence of goal orientations in terms of a direct effect on academic achievement, they have substantial impact on other motivational factors as well as selection of learning strategies (Elliot & McGregor, 2001; Patrick, Ryan & Pintrich, 1999).

The last set of predictors entered into the regression was time perspective (future, present-hedonistic, and present-fatalistic). Student time perspective has been examined in past research examining its importance in student success and coping in learning environments that are typically future oriented (Husman & Shell, 2001; Miller, DeBacker, & Greene, 1999). However, examination of FTP perceptions within an instructional context is a new development in time perspective research; therefore this was the last set of predictors.

The model as entered was ineffective at predicting achievement, since it only accounted for 32% of the variability in student achievement (R^2 = 0.32).

9.2.1.2 *Adjusted Model*

After trimming the model by removing variables that were not contributing significantly ($p > 0.05$), the model was drastically reduced to only two predictors (see Figure 9.2): the SRL strategy help-seeking ($\beta = -0.43$) and the goal orientation mastery approach ($\beta = 0.40$).

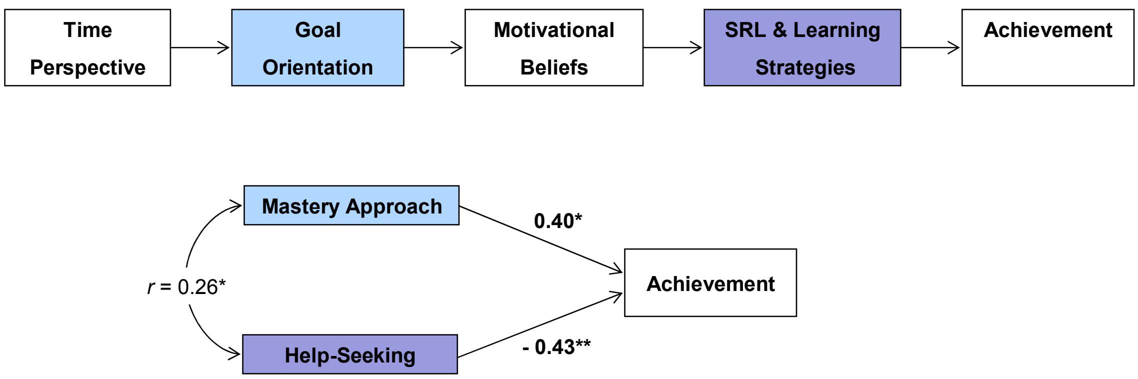


Figure 9.2. Hypothesized model and resultant adjusted model

Note: single arrows = non-standardized regression coefficients (all significant, $p < 0.05$); double arrows = Pearson's correlation coefficients (all significant, $p < 0.05$; ** = $p < 0.01$)

What this means for students is that as their achievement increases, help-seeking decreases. According to the regression coefficients, if their reported level of mastery-approach increases by one point on the relevant scale, then their academic achievement increases by approximately 4 points (out of 100).

9.2.2 The Role of Time Perspective in Learning – Regression Series 2

Even though the hypothesised model was not realized for the outcome of academic achievement, it encouraged further exploration of the relationships between the different predictors, especially FTP. Very few studies have operationalised FTP in an instructional intervention, so the relationships explored in this study are important for the field. Subsequent logistic regressions were applied on each segment of the original model. The variables in each of the categories were treated as unique outcomes in the regressions (based on a median split, each variable was transformed into a categorical variable representing the dichotomy of high vs. low). The first regression series examined the complete sample; the second series was conducted controlling for instruction in order to gain more complete understanding of the dynamic between variables.

9.2.2.1 Time Perspective & Goal Orientation

The first series of logistic regressions performed dealt with goal orientations. Regressing mastery approach onto the time perspective variables, none were significant (Wald's statistic, $p > 0.05$). Consecutive regressions on the other goal orientations revealed (standardized beta values) that present-fatalistic time perspective predicted the likelihood of mastery avoidance ($\beta = 1.95$, Wald's statistic, $p < 0.01$) and that FTP successfully predicted the chances of having performance approach ($\beta = 2.21$, Wald's statistic, $p < 0.05$).

Repeating the regressions controlling for instruction revealed similar results for FTP, but showed increased predictive power for present-hedonistic time perspective on mastery-avoidance goal orientation. This meant that the likelihood of reporting mastery-avoidance increased for students in the full instruction group who reported having a present-hedonistic time perspective ($\beta = 1.45$, Wald's statistic, $p < 0.05$).

Closer examination of the correlational relationship between FTP and both mastery goal orientations (approach and avoidance) did confirm that between FTP there was a non-significant relationship, but a very slight significant negative relationship was evident between FTP and mastery-avoidance goal orientation (see Table 9.3). Statistical analysis failed to find further expression of this relationship due to the low significance.

9.2.2.2 Time Perspective & Motivational Beliefs

There were no significant predictions for motivational beliefs from time perspective in the regressions conducted on the complete sample and also controlling for instruction. However, as indicated from the regression on the hypothesized model, there were some variables from SRL for which time perspective predicted the chances of students reporting their use.

9.2.2.3 Time Perspective & SRL

In the first regression analysis of the complete sample FTP predicted the likelihood of students reporting engagement in metacognitive-SRL ($\beta = 2.47$, Wald's statistic, $p < 0.05$) and the likelihood of reporting usage of time/study environment management strategies ($\beta = 2.94$, Wald's statistic, $p < 0.05$).

Repetition of the regressions controlling for instruction revealed significant results for both present time perspectives on the SRL learning strategy of help-seeking. According to the results, help-seeking was likely to increase for students in the modified instruction group who reported FTP ($\beta = 2.21$, Wald's statistic, $p < 0.05$), as well as for students in the full instruction group who reported present-fatalistic time perspective ($\beta = -1.65$, Wald's statistic, $p < 0.05$).

9.2.2.4 Predictive Power of Time Perspective

These results indicate that time perspective has an influential relationship with the learning processes of goal orientation and SRL. A more concrete picture of these results is provided by using two models illustrating the resultant paths between time perspective and the dependent variables of goal orientation and SRL. Using the results from the regression analysis to indicate statistically significant paths between the variables through standardized beta coefficients, it is possible to construct a vivid depiction of what occurred in the current study. Figure 9.3 illustrates the predictive power of FTP for performance-approach goal orientation, metacognitive SRL, and the two learning strategies of time/study environment management and help-seeking. The single-headed arrows indicate the prediction (standardized beta values), and the double-headed arrows indicate the relationships between the goal orientation and SRL variables (Pearson correlation coefficient values). Only significant values are included for both types of arrows.

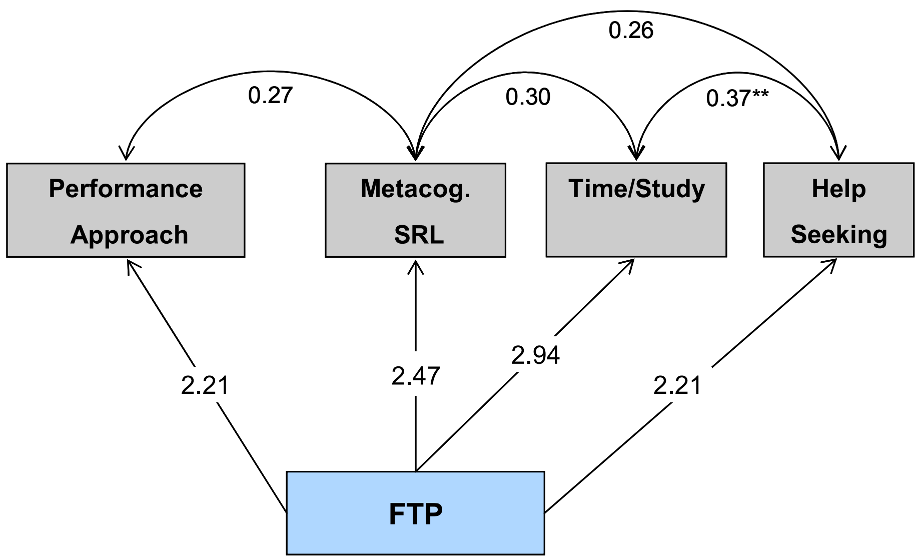


Figure 9.3. Perceived FTP as predictor of goal orientation and SRL

Note: single arrows = non-standardized regression coefficients (all significant, $p < 0.05$); double arrows = Pearson's correlation coefficients (all significant, $p < 0.05$; ** = $p < 0.01$)

The success of FTP as a predictor of both goal orientation and SRL is presented in Figure 9.3, which includes the results from both examinations (complete sample regressions and the regression using instruction as a grouping variable).

As reported above, the other two present time perspectives included in the study also indicated significant results from both regression analyses involving goal orientation and SRL. The predictions stemming from both present-hedonistic and present-fatalistic time perspectives are presented in Figure 9.4.

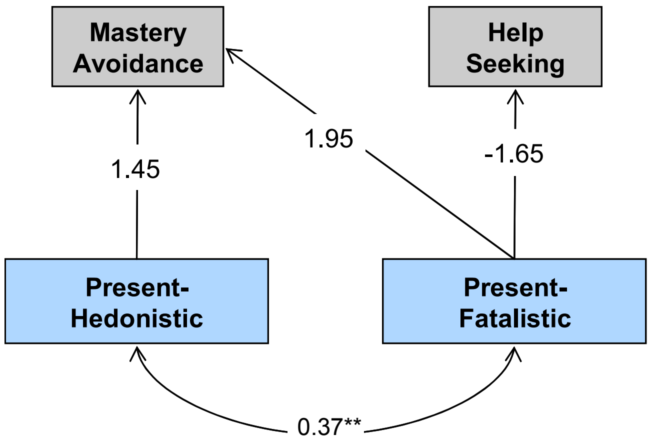


Figure 9.4. Present time perspective as predictors of goal orientation and SRL strategy

Note: single arrows = non-standardized beta coefficients (all significant, p < 0.05); double arrows = Pearson's correlation coefficient ($p < 0.01$)

In Figure 9.3, the single-headed arrows indicate the standardized beta values as in the other figure, but there are no significant correlations to report between the variables of mastery-avoidance and help-seeking. The only significant correlations to report are those between present-hedonistic and present-fatalistic ($p < 0.01$).

9.2.3 Repeated Measures (FTP and gender/age interactions)

Statistical examination of the sample over the three different time-frames employed both single and factorial repeated measures ANOVAs. The focus of these analyses was the change in student perceptions of the dependent variables, especially FTP. Descriptive statistics for all dependent variables are presented in

Table 8.5 (including Cronbach's alpha for each scale at all three time-frames).

Single repeated measures ANOVAs were conducted separately for each instructional group (future oriented – full; non-future – modified) on all dependent variables controlling for gender and age (≤ 23 or > 23).

9.2.3.1 Future Oriented Instruction (Full)

9.2.3.1.1 FTP

A significant within-subjects main effect was detected for FTP (sphericity assumed) over the three time-frames (F (2, 80) = 6.6, $p < 0.01$) in the full instruction group ($n = 44$). No gender or age effects were observed. Closer analysis of the pairwise comparisons revealed that mean student perceived FTP was relatively stable from Time 1 to Time 2 and also when comparing Time 1 with Time 3 (p > 0.05). However, Time 2 to Time 3 indicated a significant difference (p < 0.01). Examining student mean scores confirmed a high level of FTP at Time 1 which increased slightly for Time 3, and decreased for Time 2. Therefore the change from Time 2 to 3 was the most significant. None of the other time perspectives included in the study showed significant differences between the time-frames, which indicated relative stability.

9.2.3.1.2 Goal Orientation

The only significant differences between perceived levels were observed with mastery-avoidance and performance-approach. Mastery-avoidance indicated a significant within-subjects main effect (sphericity not assumed) in the differences between levels (F (2, 86) = 5.54, $p < 0.01$), although no interaction effects were observed for gender or for age. Further examination of the pairwise comparisons for the different time-frames revealed a significant difference when comparing Time 1 and Time 2, as well as Time 1 and Time 3 ($p < 0.05$). Reported levels for mastery-avoidance were highest at Time 1 than the other two measurement periods. A similar within-subjects main effect was observed for performance-approach (F (2, 86) = 6.52, $p <$ 0.01), however pairwise comparisons of the different testing periods only indicate significant differences between the perceived levels of Time 1 and Time 2. This means there was a decrease in reported performance-approach levels from the first period of measurement to the second.

9.2.3.1.3 Motivational Beliefs

None of the dependent variables for motivational beliefs showed significant differences between reported levels for the three time-frames; neither for main effects nor interactions with gender or age.

9.2.3.1.4 SRL

Self-regulation and learning strategies variables revealed more differentiation between levels reported across the three periods of measurement, except for metacognitive SRL, which had neither significant main, nor interaction effects; pairwise comparison also indicated that if differences did occur between mean levels reported, they were not significant.

Reported levels of effort regulation over the three time-frames showed no significant main effects, but did express a significant within-subjects interaction effect with age (F (2, 64) = 3.55, $p < 0.05$) not assuming sphericity. None of the univariate follow-up analyses included in repeated measures procedures were significant ($p >$

0.05). Examining the between subjects effects of age closer, a MANOVA was performed on the three measures of effort regulation. Confirming the repeated measures analysis, there were significant differences (equality of covariance assumed) between the perceived levels reported during the last period of measurement (see Figure 9.5) for students below and above the age of 23 (F (1, 42) = 5.34, $p < 0.05$).

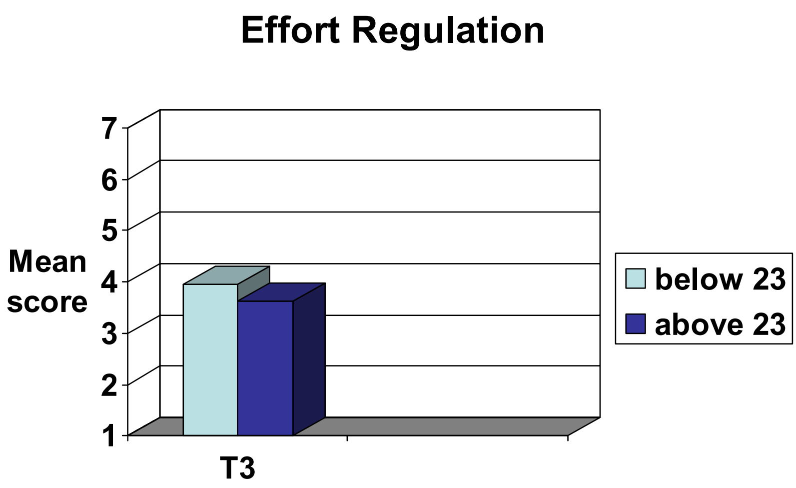


Figure 9.5. Interaction effects of effort-regulation and age (Time 3)

Pairwise comparisons indicated that the significant difference ($p < 0.05$) between levels reported for the two age groups was due to the fact that students below 23 reported higher levels of effort regulation than students above 23.

The variable of time/study environment management showed a significant within-subjects interaction effect with gender (F (2, 80) = 7.26, $p < 0.01$) not assuming sphericity. No main effects or age interaction was observed. Paired comparisons confirmed that the significant differences in reported levels expressed itself in higher levels for females than for males. In order to explore these differences in more detail, a MANOVA was peformed (equality of covariance assumed) confirming the significant between subjects interaction effects for both Time 2 (F (1, 42) = 7.64, $p < 0.01$) and Time 3 (F (1, 42) = 7.29, $p < 0.05$). Pairwise comparisons revealed that the significance between differences in reported levels expressed itself in higher female levels for both second and third measurement periods.

Peer learning showed significant within-subjects interaction effects (sphericity assumed) with both gender (F (2, 80) = 2.07, $p < 0.05$) and gender x age (F (2, 80) = 3.55, $p < 0.05$). Although MANOVA analyses confirmed the significant multivariate interaction effects for gender x age ($p < 0.05$), significant between subjects effects were observed (equality of covariance assumed) only for an interaction with age (F (1, 40) = 4.84, $p < 0.05$) for Time 1 (see Figure 9.6).

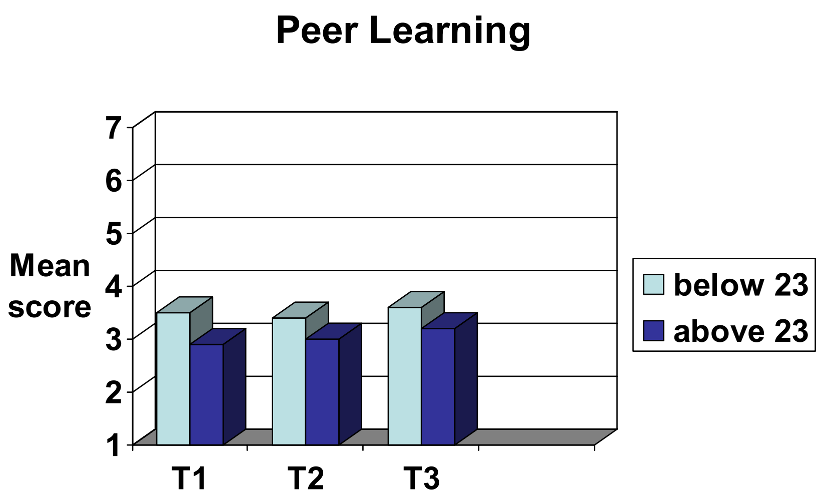


Figure 9.6. Interaction effects of peer-learning with age

Pairwise comparisons indicated that younger students (below 23) reported higher levels of peer learning than their older colleagues, explaining the significance in differences observed. However, at the other periods of measurement (Time 2 and 3) these significant differences were no longer apparent.

Help-seeking only revealed significant within-subjects main effects (sphericity assumed), without interaction (F (2, 80) = 5.38, $p < 0.01$). Pairwise comparison confirmed that significant differences occurred between both Time 1 and 2. Reported levels at Time 1 were higher than at Time 2, indicating a decrease in help-seeking over time.

9.2.3.2 Non-Future Oriented Instruction (Modified)

The same process using repeated measures was applied to the sample controlling for instruction; therefore, only students receiving non-future oriented instruction (modified) were included in the analyses (n = 38).

9.2.3.2.1 FTP

The only time perspective that indicated significant differences in the levels reported over the three phases of measurement was FTP. Within-subject tests were non-significant, but between-subjects analysis in terms of gender was significant ($p < 0.01$). Closer investigations of the pairwise comparisons revealed that females reported higher levels of FTP than males at all phases.

9.2.3.2.2 Goal Orientation

Goal orientation examination indicated significant within-subjects interaction effects (sphericity assumed) for mastery-approach x age (F (2, 68) = 4.96, $p < 0.05$). Continued investigation of pairwise comparisons indicated that this interaction effect arose from the significantly lower reported levels for students below 23 years of age at all phases of measurement, especially Time 2 (see Figure 9.7).

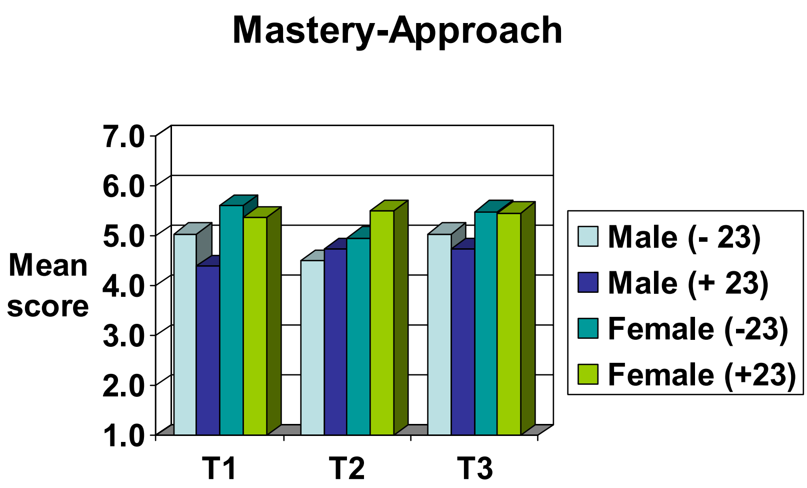


Figure 9.7. Interaction effects of mastery-approach with gender and age

A significant between-subjects effect was also observed for gender ($p < 0.05$). The pairwise comparisons for gender at each of the time-frames indicated that females reported higher levels of mastery-approach at all phases. Closer analysis of the means controlling for both gender and age indicated that both males and females younger than 23 reported lower levels at Time 2.

Performance-avoidance also showed a significant within-subjects interaction effect with age (F (2, 68) = 5.10, $p < 0.05$). Sphericity for this analyses controlling for gender and age could not be assumed, therefore the analysis was repeated only controlling for age giving the multivariate measures more power due to increase sample size (Field, 2000), and the assumption of sphericity was met. The significance of the within-subjects interaction effect increased as well ($p < 0.01$). A between subjects effect was also observed for age ($p < 0.05$). Examination of the pairwise comparisons indicated that higher levels of performance-avoidance were reported for students below 23 years of age. Closer examination of the mean scores for each time-frame showed that the differences between younger and older students were most prominent at Time 1 and Time 3. Reported levels at Time 2 were non-significant.

9.2.3.2.3 Motivational Beliefs

Significant differences between levels reported at the three time-frames were observed for two motivational beliefs variables – control beliefs and task value. Control beliefs indicated both significant within-subjects main effects (F (2, 68) = 4.84, p < 0.05) and interaction effects with gender (F (2, 68) = 5.89, p < 0.01). Between-subjects effects were also significant for gender (p < 0.05) and gender x age (p < 0.01). Closer examination of the pairwise comparisons confirmed the main effects significance and revealed that students reported lower levels of control beliefs at Time 2 than at Time 3. In terms of gender this meant that males reported higher levels than females. Regarding the gender/age interaction, older males reported higher levels than younger males; the opposite applied to females.

For task value, a significant within-subjects interaction effect (sphericity assumed) was observed with age (F (2, 68) = 7.90, p < 0.01). Significant between-subjects effects were also observed for gender (p < 0.01), age (p < 0.05) and gender x age (p < 0.01). See Figure 9.8 for an illustrated presentation of the interactions at all time periods.

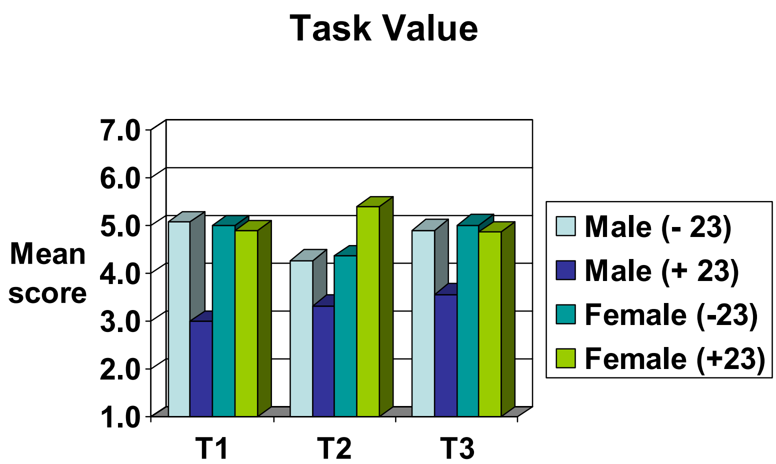


Figure 9.8. Interaction effects of task-value with gender and age

Examination of pairwise comparisons revealed that younger males reported significantly lower levels than the other participants at all measurement periods, and that older females reported higher levels at Time 2.

9.2.3.2.4 SRL

Three variables from SRL and learning strategies indicated significant differences in reported levels over the three measurement periods. Although a significant within-subjects main effect was reported for metacognitive-SRL, violation of the sphericity assumption meant that this was simply not true. Examination of student mean scores for the measurement periods revealed little or no difference between them. However, there were significant between-subjects effects observed for gender ($p < 0.01$). Closer examination of the pairwise comparisons indicated that males reported lower levels than females at all measurement phases.

The time/study environment management variable indicated a significant (sphericity assumed) within-subjects main effect (F (2, 68) = 4.45, $p < 0.05$), as well as a significant within-subjects 3-way interaction effect with gender and age (F (2, 68) = 3.43, $p < 0.05$). Significant between-subjects effects were only observed for gender ($p < 0.01$). Pairwise comparisons revealed that students reported lower levels for task value at Time 2. This was true for males who reported lower levels than females across all three phases, but most significantly at Time 2. Regarding the interaction with both gender and age, females above and below the age of 23 reported relatively stable levels, while males above 23 reported lower levels at Time 1 and Time 2 than younger males.

Help-seeking indicated only significant between-subjects effects for gender ($p < 0.05$), which meant that males were consistently reporting lower levels than females for all three measurements.

9.2.4 Summary of Investigation 2

The predictive power of time perspective for academic achievement is not immediately ascertainable. Instead, it impacts learning processes such as goal orientations and self-regulation as well as selection of learning strategies. In this way, the impact on achievement is more indirect than direct.

Relevant theory and research have indicated that the academic environment is future-oriented (Zimbardo & Boyd, 1999; Husman & Lens, 1999). In order to operate successfully in such environments, this current study has provided insight on how perceived time perspective can influence the processes of learning through goal orientation and SRL which have a more direct relationship to academic achievement. That FTP has a stronger predictive power to approach goal orientations and SRL, while both present time perspectives predict avoidance goal orientations and have a negative relationship to help-seeking confirms the theory of future time perspective in academic settings (see Figure 9.3 and Figure 9.4, respectively).

In line with the results presented dealing with the effect of instruction, changes over the three measurement periods (involving 2 semesters) indicated that generally reported levels for the variables analyzed were lowest at Time 2. Furthermore, examining the sample in terms of gender and age, males generally reported lower levels than females, and younger students also reported lower measures than older students.

There were some exceptions, however that are very interesting regarding the background literature and previous research.

Full Instruction

- Effort regulation indicated that younger students reported higher levels than older students
- Peer Learning indicated younger students were higher than older students (Time 1), but for Time 2 and 3 differences were no longer significant.

Modified Instruction

- Mastery-Approach indicated that females reported higher levels at all time-frames; older students gradually increased over time, whereas for younger students both male and females reported the lowest levels at Time 2.
- PAV – younger students reported highest levels, although over time it decreased.
- CBEL – males reported higher levels than females; older males were highest, whereas older females were lower than younger females.
- TVal – males were lower than females at all times; older females reported higher levels than their colleagues only at Time 2.

9.3 Investigation 3

9.3.1 Description of Interview Participants

The last level of investigation involved semi-structured interviews with a sample of ten students selected on the basis of age and amount of work (hours per week). An overview of the sample is provided in Table 8.6.

9.3.2 Understanding & Expression of Learning Processes

The interviews revealed student perspectives and understandings about knowledge and learning. Following the tradition of research on motivation and self-regulation using qualitative interviews (De Groot, 2002; Butler, 2002; Patrick & Middleton, 2002; Nota, Soresi, & Zimmerman, 2004), the findings are presented in narrative format retaining the qualitative nature of the responses[25].

Due to the nature of the semi-structured interviews, the thematic framework used in its design was echoed in the responses. The existing framework will be used as a guide for reporting the findings starting with time perspective and moving through each of the subsequent themes of goal orientation, motivational beliefs, and SRL.

9.3.2.1 Time Perspective

Participants did not adequately discuss their attitudes toward time in detail or provide an explanation of how their attitude was realized in their studies. This lack of

[25] Since the purpose of the interviews was to expand on the insights gained from the quantitative surveys, quantification of the interview data is redundant.

ability was most obvious in the modified group. The attitude explanation was little more than one word, and the operation of it remained at a superficial level. When attempting to explain how their time orientation is expressed and evident in their study and learning process, students became confused and unsure regarding their initial assertion. One student's reply was:

> Hmm I don't know. I always want to start learning early and know that I have to do things right away, but then things are coming so fast and usually it is too late again. (A45)

Many students used goals-setting to elaborate on the connection between their attitude toward time and studying and learning processes. However, for students who received modified instruction that did not include proximal/distal goal content (goal systems), the explanation often contradicted their initial assessment of their time orientation. For example, one student indicated his perception of being future oriented, however when commenting on how this was evident in his studying and learning, he mentioned that:

> I set unachievable goals that I don't reach, but interestingly I then achieve higher goals than if I had set lower goals. Because I don't reach those either. That is my trick and it works quite well. I am not upset if I don't reach the goals, of course. (B33)

This type of comment illustrates a lack of understanding regarding FTP and goal processes. If unfulfilled goals present no great disappointment or frustration, then a more valid assessment of time orientation would be a form of present rather than future.

Another construct related to FTP is instrumentality, which combines aspects of value and usefulness in perceptions of both future goals and immediate tasks. Students from both groups indicated understanding and recognition of instrumentality at both program and course level. Furthermore, instrumentality in the form of making connections between future career and current course or task activities was highly valued by students from both groups. Students were able to express understanding and value for this construct on a very personal basis:

> Helpful, yes sure, because I am a person, who needs always a sense in my doings. And without any connection I see no sense. (A46)

9.3.2.2 Goal Orientation

Students expressed their goal orientations by discussing a general question regarding enjoyment of learning, and also two specific questions dealing with the definition of success. The first "success-question" encouraged reflection on whether they perceived themselves as successful learners. The second question dealing with success involved a description of how students determine successful performance. Responses to the question regarding enjoyment revealed that almost every student attached positive enjoyment to learning activities (although some included reservations of "not all the time" or "it depends on the topic", etc.). Surprisingly, most participants expressed their self-perceptions of success using "other" referent judgements and comparisons (basing the evaluation solely upon grades or a stated goal to be better than average) indicating a performance goal. Only a few students were able to articulate evaluation and judgements of learning and achievement in a way that reflected a mastery-approach goal orientation. An example is as follows:

> When I've finished an assignment, the first internal feeling for me is to say, if it was good or not so good. (A46)

9.3.2.3 Motivational Beliefs

In line with research on multiple goals and their effect on achievement motivation (Pintrich, 2000; Wentzel, 2000; Urdan & Mestas, 2006) it is important to include general goal components that are useful in gaining understanding of "why" an individual is motivated. Attempting to incorporate this aspect into the interviews, questions were included dealing with reasons for being motivated in the learning process, and especially, reasons for enjoyment.

The interviews revealed that students from both instructional groups were aware of and able to identify key factors influencing their enjoyment of learning, and that these factors were also articulated when discussing concrete examples of courses for which they either had high or low motivation. These factors were expressed as reasons for enjoyment, and incorporated three general categories: content, delivery, and utility. The main reason for enjoyment relating to content involved interest, but the aspect of familiarity was also mentioned. Delivery was articulated in terms of the course format; most often through the aspect of flexibility. Utility as a reason was expressed through the intent to use or benefit from learning the material presented in the course. An example from each is presented below:

> *Content* – "When I'm really interested in the stuff, or when it's already familiar to me." (B45)
>
> *Delivery* – "I enjoy learning more when there is no big pressure." (A22)
>
> *Utility* – "The subjects which I am very interested in and which have to do with the field I want to work later." (B46)

9.3.2.4 SRL

The interview encouraged students to reflect and discuss strategies that were supportive and conducive to successful learning, especially time management strategies. Overlap did occur between participants, but each person referred to a variety of strategies. A complete list of the general time management strategies is presented below. In order to ascertain how these strategies were generated, and by which students, Table 9.5 presents an overview of the strategies, including a frequency value for each strategy (in total) and percentage values of contributing students for each strategy according to total sample and instructional group (full or modified).

Table 9.5. Strategy frequency and percentages for contributing students

Time Management Strategy	Frequency	% (total) *n* = 10	% (full) *n* = 5	% (modified) *n* = 5
Planning	8	30	60	60
Listing	3	30	20	40
Organizing	2	20	20	20
Prioritizing	1	10	20	0

It is important to note that one student from each group did not contribute to the list of generated time management strategies. This did not mean that they did not engage in time management, it indicated a potential difficulty in articulating strategy use during the interview.

Interestingly, only two references were made to supportive technology for effective time management: cell-phones and excel tables. Even though all students participated in the generic self-management course, little or no reference was made to contents presented in this course.

Regarding long and short FTP extension, Simons et al. (2004) assume that "individuals with a longer future time perspective perceive their present behavior as more instrumental in achieving a broader range of both immediate and future goals and the perceived value of present task activity is consequently higher. Conversely, individuals with short FTP are less able to articulate future goals and hence see less value in activities in which they may be currently engaged and which may be considered "detached" from the real world of their experiences." (McInerney, 2004, p.143)]

9.3.2.5 Learning Environment Satisfaction

An additional aspect not concretely examined in the quantitative questionnaires was satisfaction with the learning environment. The combination of both online and onsite learning formats is generally seen as advantageous for students in terms of increased learner control and flexibility for when learning occurs. The majority of students considered the blended learning format of the program and courses to be a positive element, and one that facilitated successful studying. For most students the flexibility of the environment was essential resulting in high amounts of learner control.

> Yes, semi virtual has the advantage that I can determine what, when and how much I can work. Of course at the end of the term the work has to be completed, but I am more flexible than at a normal university. (A37)

All students expressed time as a limited resource. Many participants work parallel to studying (the average working hours per week for the interview participants was 31.28). The main ideas identified from the responses were that the combination of work and study was facilitated and supported through the blended learning format.

> I am working a lot and with the semi virtual format I can handle things better. (A45)

Even for those participants who were unemployed, a high level of satisfaction and positive evaluation of the learning format was expressed:

> Yes, you can determine the time, your are flexible for your private life.

For a few, the blended learning format even meant the difference between pursuing higher education or not (the interviewer's prompt question has been included for context):

> *Would your time-management be different in a traditional onsite course?* I could not participate - I do not have so much time available. (B48)

9.3.3 Interpretation of Quantitative Results

The findings from the qualitative interviews can shed light upon a few of the more meaningful results from the first two quantitative investigations. Both metacognitive SRL and task/study environment management indicated having a significant relationship to FTP in investigation 1. Students who reported having high levels of FTP also reported significantly different scores on the two SRL variables than did students with lower levels of FTP. According to the interview findings, students in both groups (full and modified instruction) indicated awareness and understanding of metacognitive SRL (planning, monitoring, and evaluating). This could be due to the instructional content since both groups received instruction that involved self-assessment and extensive self-reflection exercises dealing with planning and goal-setting. Time management was an additional topic of instruction for both groups, and numerous strategies and helpful concepts were covered. The two examples presented below are from separate interviews with a student from each group. Their responses clearly illustrate that self-evaluation is occurring at a fairly high level, and that both students are making efforts to act and engage in learning after processing the information from the evaluation.

> For courses that I am not motivated I need more time to learn. It would help me to learn more about these courses in the onsite phases. In such courses the self-motivation is more difficult. (A5)
>
> When I learn things during my studies which are very interesting (e.g. questionnaires) then I try to transfer these items to my business and this might have an impact on my learning. (B48)

Another aspect to consider is that the self-report instrument for FTP might be inflating the results. After analysing the interviews, it was clear that some students were overestimating their own degree of FTP, erring on higher levels. If this is true for other students from the sample as well, then it could be biasing the results of the MANOVA involving these variables, leading to a Type I error regarding the differences between students with high and low levels of FTP.

Regarding the discrepancy in the two phases of investigation regarding mastery-approach (in the MANOVA for investigation 1 it showed significant differences with FTP as the grouping variable, whereas for investigation 2 the regression analysis involving all three phases of measurement did not register a significant relationship between FTP and mastery-approach. However, from the theory presented in this study, a relationship does exist, but it was not observable in this sample. A possible explanation could be found in the tendency of participating students to operate with a performance-approach goal orientation, as shown in the interview findings. From the student responses to questions, it was obvious that students were feeling considerable time pressure due to various reasons (work among others). When time to learn is restricted, then it is not surprising that students turn to a more "time compatible" and expedient goal orientation.[26]

The repeated measures analysis carried out for investigation 2 indicated a significant between-subjects interaction effect with age, gender and task value showing higher reported levels of task value for older females than their younger colleagues, and the opposite for males. From the interview analysis it was clear that younger females did not have the firm understanding of what future jobs and career would require of them, consequently responses dealing with task value contained a certain amount of speculation:

> When I can imagine that the subject I work on can help me in my job. (B46)
>
> I think it is worth trying it. It may not be helpful every time, but sometimes I think it can be. (A45)

[26] Whether this is simply indicative of the sample involved or is a trend in programs involving periods of online learning providing the flexibility necessary to allow students to be heavily involved at both work and university is a question that this study cannot address.

For the younger males who were interviewed, their enthusiasm for their programs of study was apparent, as well their firm belief in preconceived ideas about what will (and will not) be involved in future careers. The following are two examples from the interviews with young men from the two different groups.

> I hope, that sometimes I have a job in the marketing-business. Therefore I don't think that courses like "Law" or "HR" are NOT important for me. Others like "Marketing" or "Advertising Psychology" are very important! (B24)

> Yes, that is why courses like math and stats are not so important to me, because I will not use that in the future. But I do enjoy intercultural things and languages, I like to learn about new cultures. (A22)

These responses are different from the more tentative conclusions made by females in the same age range (as presented in the previous examples).

It is important to state that the assumptions mentioned in this section are based on the interpretation of the interviews regarding findings in the quantitative analysis. In order to make such generalisations more credible, an investigation needs to be made on the relevant variables with a much larger sample than was used for the interviews in this current study.

10 DISCUSSION

A major advantage of the current study is that by including multiple factors of motivation (motivational beliefs and goal orientation) and cognition (metacognitive SRL and learning strategies) the conceptual representation of motivation and cognition as two transactive dimensions of the same self-directed process (Schutz, 1994, p.135) is retained. Research designs incorporating multiple factors and perspectives rectify the arbitrary separation of constructs into heuristic models that has occurred during the development of theory and scientific exploration in the field of educational psychology. While understanding and insight is still limited compared to the complexity of reality, multiple factor research designs assist in recontextualizing the dynamic interactions of various elements within instruction and learning. The examination of goal orientations, motivational beliefs and SRL together with time perspective provides new insight into research focusing on these separate constructs. The utilization of a multiple goal orientation model (Elliot & McGregor, 2001; Barron & Harackiewicz, 2001; Harackiewicz, et al., 2002) also adds considerably to the insights gained from this study since it extends the classic dichotomous achievement motivation model (intrinsic vs. extrinsic) onto a framework that merges the mastery/performance model with the approach/avoidance model greatly increasing the potential for more accurate observations of student learning processes.

Other advantages include the examination of motivational and cognitive factors over time and the use of multiple methods in assessment, analysis and evaluation through quantitative self-report surveys and qualitative interviews. Previous research has examined goal orientation, motivational beliefs and SRL over time using multiple phases of measurement that have spanned ten weeks (Radosevich et al., 2004), one year

(Pintrich et al., 1999) and longer (Watkins & Hattie, 1981). However, longitudinal studies are rare, and this study contributes to the growing body of literature investigating learning processes over time.

10.1 Future Oriented Instruction

Malka & Covington (2005) ascertain that instruction designed with the constructs of perceived instrumentality and FTP in mind has great potential to support and encourage student learning processes. The main hypothesis in this current study deals with instructional effects. It was hypothesised that students receiving future oriented instruction (in comparison to students receiving non-future oriented and even those who received no instruction) would present noticeable positive differences on the four major groups of factors examined (FTP, goal orientation, motivational beliefs, and SRL). The results indicate instructional effects at the group level only for the motivational beliefs variable of control beliefs. This variable attempts to measure whether students believe that their efforts to study make a difference in their learning (Pintrich, Smith, Garcia, McKeachie, 1991). and for student who report having these beliefs the theory behind this variable assumes that students should be more likely to study more strategically and effectively. If students are in “control” of their learning, and if they believe their achievement can be controlled through their study and learning efforts, then the chances are higher for students to actively engage the material and work harder to strategically achieve the desired outcomes. Previous research has indicated that perceived control influenced academic performance by its effect (positive or negative) on active engagement in learning (Skinner et al., 1990). Even though this current study indicated significant results with this variable, the level of significance was very low – almost non-significant. Furthermore, confirmatory statistical analysis indicated that the significant differences observed between instructional groups were due to difference between other motivational beliefs variables, namely self-efficacy. This type of finding is supported by the theory of perceived control. According to Pintrich & Schunk (2002) control beliefs represent one of three types of perceived control. The other two beliefs are capacity beliefs (such as self-efficacy, which indicates whether students expect to succeed) and strategy beliefs (the outcome expectations relating to effort and ability). While control beliefs deal directly with the relation between the student and end results, capacity beliefs like self-efficacy deal with the relation between the student and the strategies chosen to achieve the end results. In the current study, the relationship between control beliefs and self-efficacy is quite pronounced, and self-efficacy has a stronger impact on group separation, therefore any significant differences observed on the variable of control beliefs indicates difference between the variables rather than between groups.

The most significant instructional effects for this study were observed in analyses using FTP (high/low) as the grouping variable. These results revealed that students with high levels of FTP reported higher levels for at least one variable from all four categories regardless of instructional group. However, these findings will be discussed in section 10.3 since they deal with the hypotheses regarding the role of FTP in student learning processes.

10.2 FTP & Achievement

Another hypothesis that was generated for this current study stemming from the main hypothesis regarding instructional effects dealt with the assumed positive effect of future oriented instruction on achievement. Malka and Covington (2005) found that perceived instrumentality predicts unique variance in graded performance independently from other motivational variables, such as self-efficacy, task value, and achievement goals. They argue that in order to fully understand classroom achievement, consideration must be given to how academic performance is perceived by students as instrumental to the attainment of valued life goals. According to other literature and research on both the expectancy-value and future time perspective frameworks, results suggest that the combination of valuing future goals and viewing current behavior as instrumental to their attainment should have an impact on performance (Lens & Decruyenaere, 1991; Eccles & Wigfield, 2002). Unfortunately, these assumptions of direct achievement effects were not supported by the statistical analyses performed on the data in this study. Such direct effects on achievement are seldom found in research on instructional interventions operationalising highly contextual factors such as FTP. However, positive indirect effects of future oriented instruction were supported and verified through statistical analysis.

The ability of FTP to predict achievement in this study can be observed as an indirect relationship. This finding corroborates research conducted by Elliot & Church (1997) that identified competence expectancies as indirect contributors (not as mediators involving direct interaction with goal orientation) to achievement outcomes through their influence on goal adoption. In other words competence expectancies are antecedents of goal orientation which have direct impact on achievement (the consequences of goal orientation). This current study extends Elliot & Church's antecedent/consequences concept by including FTP as a predictive antecedent of goal orientation. The results of the regression analyses present validation of FTP as a predictor of variance in differences of reported levels of performance-approach, and both present-hedonistic and present-fatalistic time perspectives as predictors of differences on levels of reported mastery-avoidance goal orientations.

As one of the pioneer studies implementing FTP theory as content for instruction, this study has many positive aspects that are valuable to the developing field of research on this construct. The regressions conducted to ascertain the predictive value of the hypothesized model used in this study (see Figure 9.1) revealed two variables that did have a direct predictive relationship to achievement – mastery approach and the SRL strategy help-seeking.

10.2.1 Goal Orientation Predicts Achievement

Elliot & McGregor, 2001 (2x2 goals) – with such a framework, goal orientation is seen as predicting graded performance more strongly, and performance-approach is consistently observed as the goal orientation having significant predictive power. This current study is one of few that have identified a direct relationship between mastery-approach and achievement. The benefits of this goal orientation on student learning has been comprehensively outlined in the theory of achievement motivation, as outlined in section 3.3.2. Trends in goal orientation research presented by Elliot (2005) reveal that there is a lively debate regarding the distinctions between mastery and performance-approach goals. Clearly, mastery goals have been shown to have positive effects, but interestingly, mastery-approach goals often do not positively predict achievement in relevant literature, whereas performance-approach goals consistently do predict achievement. The findings from the current study contribute to research on goal orientation because the results comply with research that identifies benefits from multiple goals (see Elliot & Moller, 2003; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Pintrich, 2000b). Mastery-approach goals were observed in the current study to predict achievement directly; however, contrary to theoretically based hypotheses FTP did not predict mastery-approach goals. Performance-approach goals are predicted by FTP. Research on multiple goals recognizes the value of both mastery-approach and performance-approach goal orientations, but confines the benefits of performance-approach to environments that are high in competition and normative evaluations. The current study offers an additional interpretation relating to the benefit of performance-approach goals. For academic contexts where the outcome attainment specifies task completion and does not specify task mastery, FTP can have a strong influence. Participants in the current study adopted performance-approach goals more than mastery-approach, and it was observed that FTP had predictive influence on these performance-approach goals. While one interpretation could be that the academic context is therefore normative and competitive, a more realistic interpretation for this particular context is that mastery was not identified as a requirement for course completion. Follow-up research in this same context would be helpful to determine how success is defined by instructors and teachers for the relevant courses.

10.2.2 SRL Predicts Achievement

SRL from a social cognitive perspective involves processes and strategies initiated by learners for the acquisition of skills and information necessary for satisfying learning outcomes (Zimmerman, 1990). It is an ongoing process involving proactive and reactive responses to many forms of feedback involving the learner and environment, which means that SRL activity is strongly influenced by motivation. Effective self-regulation requires significant amounts of preparation time, vigilance and effort – unless the outcomes of these efforts are sufficiently attractive, students will not be motivated to self-regulate (p.6). Considerable research has occurred with both process and strategy components of SRL examining their effects on achievement (see Garcia & McKeachie, 2005 for a review of studies using MSLQ scales). The majority of studies dealing with SRL processes have found significant results for metacognitive-SRL (planning, monitoring and evaluating) indicating their positive influence (Thiede, Anderson, & Therriault, 2003; Winne, 1996)[27]. Research dealing with SRL strategies, especially resource management strategies, have typically found significant results for effort management (Pokay & Blumenfeld, 1990), as well as organisation and planning (Garavalia & Gredler, 2002). New directions of SRL research has expanded into learning environments employing computers and ICT (Nevgi, 2001; Nesbit & Winne, 2003). This current study examining student reported use of learning strategies within a blended learning environment identified the SRL strategy of help-seeking to be a significant predictor of achievement, however with a negative relationship. This means that as achievement increases, the reported use of help-seeking decreases. Although research dealing with help-seeking as a strategic learning resource (Karabenick & Sharma, 1994) is growing, it remains firmly connected to a much larger body of research focusing on the benefits of cooperative learning (see Slavin, 1992; Webb & Palinscar, 1996 for detailed reviews). Just as research on other strategies has extended into ICT learning environments, help-seeking has also been identified as a significant predictor of achievement for students operating in these contexts (Lynch & Dembo, 2004). The findings from this current study and the research by Lynch and Dembo (2004) are similar regarding the positive value of help-seeking in blended learning environments. Further research is needed to more fully explore the impact of these

[27] Contrary to previous research, motivational beliefs, which are also associated with SRL processes, did not significantly predict achievement in this current study. Self-efficacy has been found to be a powerful predictor of achievement in previous research (Pintrich & Garcia, 1997).

findings. It could very well be that the unique learning format that combines the strengths of both onsite (face-to-face) and online (virtual) instruction fosters and encourages the use of help-seeking more effectively than purely online learning environments. These findings are very valuable for the promotion and continuation of blended learning instructional design.

10.3 FTP & Processes Affecting Learning

10.3.1 Relationship Between FTP & Goal Orientation

Elliot & Thrash (2001) have proposed that larger life goals influence achievement goal adoption. Type of instrumentality or specific level of value for a task or course in terms of achieving a future goal can also influence how students report mastery or performance approach orientations. For example, Husman et al (2004) and Malka & Covington (2005) both assert that students are able to perceive high levels of instrumentality for graded performance or for learning – both perceptions can indicate high levels of valence. The current study revealed statistical support for FTP as a predictor of performance-approach rather than mastery-approach goal orientation. The meaning behind this and possible explanations for this findings are drawn from a combination of literature and research dealing with both FTP and goal orientation.

Even though individuals have the potential to influence what transactions occur in the setting, what actually occurs is mostly influenced by the goals and standards of the ecoculture (according to Schutz (1994), this relates to the learning and educational environment). A reality in many educational environments, according to Maehr and Midgley (1991) is the importance of external performance indicators that are predominantly grade-based. In such environments, grades tend to become the standard by which students are judged, and therefore activities tend to be designed encouraging the use of such judgements. The current study's results regarding predominant performance-approach goal orientation may not only be a function of students' internal learning processes, but rather is indicative of the constraints and functionality of their educational environment. This relates to the challenge in blended and online learning environments of incorporating more tasks and learning activities that engage the learner through constructivist principles (see sections 5.2.2 and 5.6.2), which encourage and foster internal learning processes operationalized through the adoption of mastery-approach goal orientation.

Further insight regarding the non-significant relationship between FTP and mastery-approach goal orientation can be gained from the comprehensive review of literature dealing with goals, structures, and motivation within classroom contexts by Carole Ames (1992). Ames elaborates on the important relationship between goal orientation and perception of self-worth and ability. The fundamental concept is that when a student adopts a performance goal learning becomes focused solely on proving ability and competence through achieving better results than others, by surpassing normative standards, or by succeeding with minimal effort. Adoption of a mastery goal, however means that students focus on developing new skills, trying to understand their work, improving their level of competence, or achieving a sense of mastery based on self-referenced standards. The assumption of this current study was that adoption of mastery goal orientation would be encouraged and fostered through supplemental instruction on applying the constructs of FTP and instrumentality to their learning, and also through the innovative format of blended learning which increases student control, flexibility and responsibility for learning. However, results show that FTP in this context has increased the likelihood of adopting a performance-approach goal orientation. A possible explanation based on the premises presented in Ames accumulation of relevant educational research is that the positive intent of blended learning formats to increase the amount of face-to-face interaction between students and instructor may have lead to an increase in “other-referent” performance judgements rather than an increase in “self-referent” judgements that are associated with mastery-approach goal orientations. Further research is necessary in the field of online learning that identifies the influence of solitary or group learning activities in order to more fully understand the complexities of goal orientation.

Research is expanding on the construct of mastery-avoidance goal orientation, and due to its complex nature (the combination of two contradicting components: mastery, which is primarily positive in its effects on learning; and avoidance, which has been identified as having primarily negative effects) as shown in research conducted by Andrew J. Elliot (for a review see Elliot, 2005). Whereas mastery-approach goal orientation deals with efforts to continually develop one’s skills, abilities, mastery and understanding, mastery-avoidance goal orientation deals with efforts made to avoid losing one’s skills and abilities. In general mastery-avoidance goal orientations have been associated with negative outcomes (Elliot &McGregor, 2001) such as more anxiety and less adaptive approaches to studying and learning. It has been identified in a few populations (Elliot, 2005), such as in elderly people who, due to the gradual decrease in skills and ability to function, try hard to avoid losing their expertise. Similar findings have occurred with high level athletes and performers who feel they may have reached the “peak” of their ability, and consequently seek to avoid doing worse than prior achievement. Even though there were no significant values observed regarding the predictive power of FTP for mastery-avoidance, the correlational analysis of the two variables did reveal a slight negative relationship that was marginally significant. Further expression of this relationship was not observed in other statistical tests, but it is encouraging nonetheless, since FTP theory asserts its positive influence on learning. The suggestion from this finding that as FTP levels decrease mastery-avoidance levels increase is supportive to the continued development of the theory. Yet, caution is necessary since the significance was so low, and since this relationship was only observed in correlational analysis. The results observed with present time perspective continue to affirm this aspect of FTP theory (since reporting high levels of present-hedonistic and present-fatalistic time perspective is indicative of low FTP). That both present-hedonistic and present-fatalistic time perspectives were identified in this study as predictors of mastery-avoidance goal orientations is of great value to the growing body of research on goal orientation. Such results can be anticipated from the literature on time perspective from Zimbardo & Boyd (1999) as well as Husman & Lens (1999).

Zimbardo's theory of time perspective identifies five different perceptions that are intended to facilitate optimal functioning in a variety of environments. Optimal functioning occurs when time perspective of the individual matches that of the environment. Zimbardo's research claims that FTP is the optimal time perspective for successful learning experiences in academic environments, which are predominantly future oriented. The two present time perspectives are seen as inhibitors to success in such contexts.

In other research conducted by Husman and Lens, as well as other colleagues in the area of FTP and perceived instrumentality, similar findings have been presented regarding the high level of future orientation that school and academic environments require. According to the results of numerous studies, students with low degrees of FTP are regarded as being at a disadvantage in comparison to those students reporting higher levels of FTP. This current study provides valuable confirmatory evidence for previous findings in the relevant literature, and extends the body of research into the area of blended and online learning, which has received little to no attention in FTP research.

10.3.2 Relationship Between FTP, Motivation & SRL

From a social cognitive perspective, goals are central to the self-regulatory process (Miller & Brickman, 2004), for they represent the target goals (proximal) and anticipated outcomes associated with the current actions being performed (p.12). Goal pursuit is influenced by motivational beliefs, such as self-efficacy and control beliefs (how it is selected and started, and also how it continues in an ongoing process), as well as self-regulatory process of self-observation, self-judgement, and self-reaction. Bandura (1986, p. 476), in his explanation of social cognitive theory and motivation, stated that "personal development is best served by combining distal aspirations with proximal self-guidance." Despite the fact that valued future goals help orient an individual's self-regulatory behavior (including marshalling cognitive strategies) to achieve both the subgoals and the ultimate future goal (McInerney, 2004), and the knowledge that the value of possessing relevant future goals can enhance students' intrinsic interest in schoolwork and their use of effective learning strategies (Phalet, Andriessen & Lens, 2004) research examining these aspects has been slow in development. Miller and Brickman (2004) identify a lack of research addressing the influence and benefits of future goals on the learning processes. Their efforts have resulted in an attempt to rectify this neglected area and have created a model integrating both distal and proximal goals within the context of motivational and self-regulatory processes (see Figure 2.3). The premise of their research is that the development of a goal system incorporating both personally valued future goals and proximal (immediate) target goals and subgoals facilitates the pursuit of future goals, and also increases the likelihood of goal achievement.

This current study adds to the growing body of literature addressing the influence of future (distal) goals on motivation and self-regulation in learning through the design and implementation of an instructional intervention that was future oriented (the teaching content addressed the importance and value of making distal and proximal goals connect in an interdependent relationship). Assessment of student perceived levels of FTP provided a measurement indicating the attitude and values students have toward the future (and consequently their own future goals). The findings from quantitative analysis of the data revealed the positive influence of FTP on SRL, especially in terms of student engagement in self-reflective activities such as planning, monitoring and evaluating (expressed in the dependent variable metacognitive SRL). If students reported high FTP, the likelihood of reporting higher levels of metacognitive SRL also increased (see section 9.1.2.3). The benefit of FTP did not only reside in the area of metacognitive self-reflection, but also in the reported use of self-regulatory strategies, especially the management of time/study environment and help-seeking. Again, the results observed on the sample of students in this current study indicated that FTP predicted student engagement in these regulatory strategies during learning activities.

Findings from the current study also supported research relating to perceived instrumentality and task-value (elements that are essential to the theory of FTP). Although instrumentality was not assessed directly through Likert-scale items on the student self-report surveys, it was included as part of the demographic information collected regarding reason for course participation. Furthermore, instrumentality was a key content area for future oriented instruction, again operationalised in terms of perceptions of value and relevance at both course and task levels. Task value, however, was included as a scale on the self-report survey and mean reported values did correlate significantly with SRL and learning strategies, indicating the existence of a relationship. This relationship can be explained through the theory connecting FTP, instrumentality and SRL as outlined above, which simply states that as value increases so to does the potential for increased activity and engagement in strategic learning and studying. Qualitative interviews supported the quantitative evidence regarding task-value. Participants in the interview were cognizant and able to express and discuss their perceived value for their studies, courses and tasks. Strategies expressed by participants focused on management strategies specifically (see Table 9.5).

Help-seeking strategies were not discussed or expressed in the interviews directly, consequently any conclusions regarding the influences of FTP on such strategies are tentative. Yet the quantitative results indicated that there was significant differences between students reporting high FTP and those reporting low FTP (included in low FTP are students who were identified as present-hedonistic or present-fatalistic), suggesting that FTP has a positive influence on help-seeking as a strategic form of goal pursuit and means of achieving the ends or learning outcomes (in this case graded performance). Such findings are valuable to the body of research dealing with help-seeking, which overlaps with the large field of research on collaborative learning (see Slavin, 1992; Webb & Palinscar, 1996).

10.4 FTP & Learning – A Longitudinal Perspective

Previous research by Pintrich and his colleagues (1999) has found that there are distinct gender differences in relations between goal orientations and the factors of SRL and self-efficacy. This current study increases understanding of the complex interactions within learning processes by expanding the factors examined to include the constructs of time perspective and instrumentality and their influences on other motivational beliefs and SRL factors, and especially their interplay over time.

The general trend observed in the current study over the three phases of measurement was that students' reported levels on the dependent variables decreased at Time 2. This finding could be due to the proximity of the final course assessment at this time. Wicker and colleagues (2004) in their research on changes in motivation over time have found that expectations decreased as the time of final testing drew nearer, and that declines also occurred in goal standards and effort attributions. Similar results have been found in other research on motivational factors regarding the decrease in adaptive motivation as emphasis on evaluation or competition increases (see Pintrich, Conley, Kempler, 2003; Bråten & Olaussen, 2005). Ultimately, these findings reflect an increase in anxiety about expected success and possible outcomes[28]. Instead of goals implying high standards and desired excellence in this outcome (and the willingness to work hard to achieve these standards), what occurs is a reduction and decrease in standards resulting in a similar decrease in outcome expectancy, as well as levels of effort expended to achieve the outcomes. A "just get the job done" mentality arises that has elements of a mastery-avoidance orientation as it implies the desire to not achieve

[28] Such affective emotions do have impact (see Schiefele & Pekrun, 1993; Pekrun et al., 2002) on learning processes, especially goal orientation, motivation, and SRL.

poorer results than previous outcomes. Results from the current study indicate that this could be a feasible explanation (however, additional research is necessary before any conclusions can be drawn), since levels increased again for Time 3 (at the beginning of the next semester, far removed from course evaluations and final examination periods). However, another potential explanation is the general decrease in interest and motivation over the duration of a course (also found in Bråten & Olaussen, 2005), and the increase at Time 3 is due to new instructional content at the beginning of the next semester. Since the observations of the current study involve two separate courses (involving different contents and domains), exact causes for decreases at Time 2 cannot be determined due to confounding instructional context and content issues.

Although the current study observed significant interaction effects on dependent variables with gender and age, it was not a priority of the investigation, and no hypotheses dealt with these factors. Furthermore, the significant results must be treated with caution since most of these interactions were significant when the sample was controlled for instruction. Repeated measures analysis was carried out on the groups separately (this meant that the sample size was further reduced since only one group was analyzed at a time). Consequently, there are no conclusive findings to present that can be generalised beyond this specific sample. A comprehensive overview of past research on gender differences in future time orientation from the perspective of five theoretical orientations (achievement motivation, future time orientation, possible selves, expectancy-value, and social-cognitive) is presented by Greene and De Backer (2004). This overview does make generalisations, however their purpose is directed at encouraging sensitivity to cultural norms and stereotypes within educational contexts that shape and influence differences in goal adoption, goal pursuit, and extension (short or long) of future time orientation. The impact of social and cultural norms regarding gender on this current study is difficult to establish. The fact that the sample consisted of more women than men (63.9% female) in programs of study that all have a business management connection could indicate that there is an increasing equivalency occurring regarding entrance to careers that have been identified as male dominated. However, conclusive evidence cannot be generated from this study. Regarding the influence of age on student learning in this sample, the observed result that peer-learning increases over time for older students could indicate that integration issues may exist at the beginning of studies, but decrease as students have more opportunity to interact with each other in academic and social contexts. Again, further studies are necessary to examine these issues with greater reliability and validity.

10.5 Implications

A major implication of this current study is its potential application in educational settings for both learner and instructor. As stated at the beginning of this dissertation (see section 1.3), a fundamental purpose of this research is to gain insight and understanding about ways in which educators and educational institution can provide means and measures for supporting learner success in blended learning environments. Research of this kind falls into a category of scientific enquiry that has been predicted will be a trend in decades to come, namely “use-inspired basic research” (Schneider, 1998; Pintrich, 2000; Stark & Mandl, 2003). This category is one of four categories in Pasteur’s Quadrant (see Figure 1.1), each indicating a direction for empirical research in terms of usefulness and understanding. The usefulness of the findings from this current study for the field of education involves time perspective, especially FTP and the positive role it plays in student learning processes resulting in future oriented motivation and self-regulation.

The current study shows that future oriented instruction encourages and facilitates the development and recognition of FTP in students increasing the awareness of its positive role in learning processes. For learners the importance of establishing connections between distal and proximal goals cannot be underestimated or ignored. Taking time for self-reflection and assessment of personal goals for the future, as well as immediate value perceptions of present courses and tasks provides necessary insight into where motivational deficits may occur, which can then be responded to and acted upon. Regulation of learning and taking action to improve is supported through FTP, since daily activities are viewed as instrumental in attaining goals farther in the future. Planning, monitoring, and evaluation (the key elements of metacognitive SRL) are supported by FTP. Management of time and study environment are learning strategies engaged by students with FTP. Furthermore, with the realisation of relevance and value of tasks and courses expressed by students with FTP, seeking assistance or asking for help becomes less intimidating.

For instructors and educators, the use of future orientation and incorporation of FTP constructs can facilitate positive learning experiences of students. Given the rise of course offerings dealing with “learning to learn” and the teaching of learning strategies as a means of supporting students throughout their learning experiences in higher education, the current study provides confirmation that such instruction needs to address not only the identification and application of learning strategies, but also reflection and awareness of the influence of student attitudes toward time. Knowledge of learning strategies does not necessarily lead to better academic performance; students must also develop the motivation to use those strategies (Schutz, 1994). As an identified predictor of variance in differences within achievement goal orientations and types of SRL, FTP is important to consider for learning environments and instructional design activities that intend to engage the motivation and interest of target student populations. Given the positive results found in this study on student learning processes within a blended learning environment, FTP plays a supportive role in learning increasing the positive influence of motivational and self-regulatory processes.

Implicit throughout this discussion is the assumption that student perceived time perspectives are causally related to achievement goal adoption, motivational beliefs and SRL, that these factors, in turn, exert a proximal causal influence on achievement-relevant outcomes, such as graded performance. It is important to note that the current study did not directly test the causal nature of the hypothesized relationships. Despite the temporal sequencing of the measurement phases and the use of regressional models in the statistical analysis, the data remain correlational, and therefore solid conclusions regarding causality cannot be drawn, nor generalisations made to other samples of population.

10.6 Limitations

Due to the small sample size that occurred when analyzing for group- and degree of FTP (high/low) differences, analyses with larger samples may indicate different findings. Also due to the students participation in business related programs (Commerce, Business Psychology, Training and coaching and Sportmanagement), perhaps different findings would be observed from more traditional programs of study from the sciences and humanities. Previous research indicates that business students are very focussed on the future, in terms of career- and job related future goals (Bråten & Olaussen, 2005).

While there were distinct advantages to using Zimbardo's time perspective scales, it may make a difference in future studies to employ a variety of FTP and instrumentality measures to determine the instructional effects on these constructs more closely. The self-report measures seem to indicate some ambiguity when compared with the qualitative interviews. Even though some students perceived themselves to be definitely future oriented (high FTP), their discussions and explanations of related concepts in the interviews indicate a more present orientation, rather than future.

McInerney (2004) encourages caution regarding the assumptions relating to the benefits of future orientation on learning, since research on these factors has been conducted primarily on Western cultural groups, which the sample for this current study also represents. According to McInerney, it would be false to assume that thinking about the future is universally important and valued (p.142). Even though the research on FTP has shown that academic environments are future oriented (Husman & Lens, 1999; Zimbardo & Boyd, 1999) expressed through the simple fact that "schooling is a future oriented investment" (Phalet, Andriessen & Lens, 2004, p. 61), it would be a mistake to assume that this common focus is culturally or economically universally appropriate (McInerney, 2004).

10.7 Future Research

The findings from this current study offer exciting insights into many areas of educational research involving the factors of time perspective, goal orientation, motivational beliefs and SRL. However, this study cannot answer many of the questions arising from previous research, or even a few of the issues arising from the unique context applied with this sample of students. It is simply a glimpse into the complex interactions of student learning processes. Further research can expand understanding on these issues, leading to (hopefully) still more questions, insights and ponderings, and consequently more new research. Some of the general themes arising from this study that are viewed to be important for further research involve the following:

- Interdisciplinary and multiple perspectives
- Examination of FTP and SRL together with volition and will components
- Continued examination of ICT learning environments, including blended and online formats
- Further application of FTP theory (including instrumentality and future orientation) within instructional interventions at multiple levels of schooling

Elliot & Thrash (2002) call for research that integrates the disciplines of biological and psychological research; however the current study remains solidly placed within the field of educational psychology from a social cognitive perspective. Future analysis of these factors is encouraged employing a multivariate approach incorporating fields and disciplines relating to personality and educational psychology (e.g. neurological and physiological sciences coupled with cognitive and educational sciences). Clarity occurs through multiple perspectives dealing with similar factors applied in different domains and contexts of learning.

Regarding FTP's relationship to SRL, volition and will (Husman, McCann, & Crowson, 2000), an area for further exploration is whether perceived FTP influences the capability for delay of gratification. Research by Bembenutty and Karabenick (2004) has explored this topic, and the findings of this current study regarding the role of FTP with SRL and learning strategies accentuates the need for further research combining aspects of self-regulation, volition, will, and their operation in variables such as delay of gratification. [explain briefly…]

As technological advancement continues regarding new and innovative ways of communicating knowledge and engaging in learning activities, educational research must also continue to evaluate and examine the effects of learning and operating in these environments. This current study deals with blended learning, specifically, and the findings observed raise further questions regarding the broader field of distance and online learning – how does FTP and future oriented instruction influence student learning within these environments? Future research is needed to answer this question.

Help-seeking (Karabenick & Sharma, 1994; Karabenick, 2004) as a strategic resource for students was observed to have a significant effect on achievement, and was predicted by level of FTP. Further research is needed to confirm these findings, especially in blended learning environments, since Lynch and Dembo (2004) also found significant relationships between help-seeking and performance attainment. Is blended learning as a format of instruction creating a unique environment that is conducive to seeking assistance and interacting with peers in the pursuit of learning? If this is true, then such findings are extremely important for the continuation of blended learning as an effective instructional design, and its encouraged use at all educational levels.

ICT environments such as blended learning and online and distance learning involve students with a broad range of ages within classes, courses, and seminars. Adult learning is increasing, especially in higher education (due in part from increased policy and program promotion at the country level, such as OECD, EU initiatives, etc.). How are adult learners functioning within these learning environments? Are there differences between older and younger learners on the factors of goal orientation, motivational beliefs, and SRL? Questions regarding age differences on these factors remain open in terms of whether age and experience influences goal adoption, adaptive motivation, and regulation of learning.

A final comment of the need for future research arising from issues and findings observed in this current study deals with future oriented instruction, specifically how FTP theory (including perceived instrumentality, task value, future orientation, etc.) is included and applied as content within instructional interventions. Research has focused on identifying these factors as unique and separate constructs within learning; the next step is to examine these constructs in operation, separately and in multiple contexts. The absence of significant instructional effects observed in this current study is not seen as a limitation or weakness of the instructional intervention. Rather, it is evidence of the need for further research in the area of future oriented instruction. As a pioneer study in this area, the current study provides insight for subsequent studies operationalising similar learning processes within learning environments. It attempted to provide students with necessary tools for the identification of valued distal goals, which are catalysts for the process of developing proximal goals. According to the literature, the adoption of a valued future goal does not automatically result in the formation of a proximal goal system. Miller and Brickman assert that "students need to recognize the personal value of their efforts in order for them to expend effort to learn from (not simply complete) the tasks present in school" (p. 19). This presents a major challenge for instructional interventions that intend to assist students in their acquisition of such valuable subject knowledge and self-knowledge. For according to Husman and Lens

(1999), this type of discovery and self-learning is most effective when students come to appreciate the value of learning activities on their own without external influence. While this is true to an extent, it could apply to any aspect of learning – outcomes are indeed best or most effective when students are able to internalise the concepts on their own, making their own connections and meaningful bridges to other relevant topics and themes. The role of the teacher and instructor, therefore, is critical in providing guidance and support rather than obstacles and hindrances. How, exactly future oriented instruction can best be achieved in learning environments, is unclear, and only continued efforts in its implementation will ensure that viable and successful methods for its application will be found and put to use.

11 REFERENCES

Allen, I., & Seaman, J. (2005). Growing by Degrees: Online Education in the United States. Report sponsored by The Sloan Consortium.

Allport, G. (1937). *Personality: A psychological interpretation*. New York: Henry Holt.

Ally, M. (2004). Foundations of Educational Theory for Online Learning (pp.3-32). In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning*. Athabasca University. Retrieved on May 28, 2006 from http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

Ames, C. (1987). The Enhancement of Student Motivation. In M.L. Maehr & Kleiber, D.A. (Eds.), *Advances in Motivation and Achievement: Enhancing Motivation* (Vol. 5, pp. 123-48). Greenwich, Connecticut: Academic Press.

Ames, C., & Archer, J. (1987). Mothers' beliefs about the role of ability and effort in school learning. *Journal of Educational Psychology*, 79, 409-414.

Anderson, T. (2002). Getting the mix right: An updated and theoretical rationale for interaction. *ITFORUM, Paper #63*. Retrieved August 16, 2006 from http://it.coe.uga.edu/itforum/paper63/paper63.htm

Anderson, T., & Elloumi, F. (Eds.) (2004). Theory and practice of online learning. Athabasca University. Retrieved on May 28, 2006 from http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

Anderson, T. (2004a). Toward a Theory of Online Learning (pp.33-60). In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning*. Athabasca

University. Retrieved on May 28, 2006 from http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

Anderson, T. (2004b). Teaching in an Online Learning Context (pp. 271-294). In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning*. Athabasca University. Retrieved on May 28, 2006 from http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

Aronson, D.T. & Briggs, L.J. (1983). Contributions of Gagne and Briggs to a prescriptive model of instruction. In C. M. Reigeluth (Ed.), *Instructional design theories and models* (pp. 75-100). Hillsdale, NJ: Erlbaum.

Astleitner, H. (2003). Web-Based Instruction and Learning: What do we know from experimental research? In N. Nistor, S. English & S. Wheeler (Eds.) *Towards the Virtual University: International On-Line Learning Perspectives*, pp. 37-64. Greenwich, CT: Information Age Publishing.

Azevedo, R. Cromley, J.G., Winters, F.I., Moos, D.C., & Greene, J.A. (2005). Adaptive Human Scaffolding Facilitates Adolescents' Self-regulated Learning with Hypermedia. *Instructional Science*, 33(5-6), 381-412.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1999). Social cognitive theory of personality. In L.A.Pervin & O.P. John (Eds.), *Handbook of Personality*. New York: Guildford.

Barron, K., & Harackiewicz, J. (2001). Achievement goals and optimal motivation: Testing multiple goal models. *Journal of Personality and Social Psychology*, 80, 706–722.

Bembenutty, H. & Karabenick, S. A. (2004). Inherent association between academic delay of gratification, future time perspective, and self-regulated learning: Effects of time perspective on student motivation. *Educational Psychology Review*, 16 (1), 35-57.

Berge, Z. L. (2002). Active, interactive, and reflective learning. *The Quarterly Review of Distance Education, 3*(2), 181-190.

Bloom, B.S. (1985). *Developing talent in young people*. New York: Ballantine Books.

BMBF (2006). E-Learning - Alltagstaugliche Innovation? Projektträger Neue Medien in der Bildung+Fachinformation. Retrieved August 21, 2006 from http://www.medien-bildung.net/veranstaltungen/veranstaltungen_240.php

Boekaerts, M., & Niemivirta, M. (2000). Self regulated learning: Finding a balance between learning goals and ego-protective goals. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 417-450). San Diego, CA: Academic.

Boniwell, I. & Zimbardo, P. G. (2004). Balancing one's time perspective in pursuit of optimal functioning. In P.A. Linley & S. Joseph (Eds.), *Positive psychology in practice*. Hoboken, NJ: Wiley.

Borkowski, J.G., & Thorpe, P.K. (1994). Self-regulation and motivation: A life-span perspective on underachievement. In D.H. Schunk & B.J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational applications* (pp. 45-73). Hillsdale, NJ: Erlbaum.

Borkowski, J. G., Chan, L. K. S., & Muthukrishna, N. (2000). A process-oriented model of metacognition: Links between motivation and executive functioning. In G. Schraw & J. Impara (Eds.), *Issues in the measurement of metacognition*. Lincoln, NE: Buros Institute of Mental Measurements, University of Nebraska.

Bong, M. (2001). Between- and within-domain relations of academic motivation among middle and high school students: Self-efficacy, task-value, and achievement goals. *Journal of Educational Psychology*, 93 (1), 23-34.

Brandon, B. (2003) Using RSS and Weblogs for e-Learning: an overview, *The e-Learning Developers' Journal.* Retrieved on August 16, 2006 from http://elearning.typepad.com/thelearnedman/files/eLearning_RSS_Weblogs.pdf

Bransford, J., Brown, A., & Cocking, R. (1999). *How people learn: Brain, mind experience and school.* Retrieved August 20, 2006 from the National Academy of Sciences Web site: http://www.nap.edu/html/howpeople1

Bråten, I., & Olaussen, B.S. (2005). Profiling individual differences in student motivation: A longitudinal cluster-analytic study in different academic contexts. *Contemporary Educational Psychology*, 30, 359-396.

Butler, D. (1998). A strategic content learning approach to self-promoting self-regulated learning by students with learning disabilities. In D.H. Schunk & B.J. Zimmerman (Eds.), *Self-regulated learning* (pp. 160-183). New York: Guildford Press.

Butler, D. (2002). Qualitative approaches to investigating self-regulated learning: Contributions and challenges. *Educational Psychologist*, 37 (1), 59-63.

Cantor, N. (1983). Conflict, learning, and Piaget: Comments on Zimmerman and Blom's "Toward an empirical test of the role of cognitive conflict in learning". *Developmental Review*, 3, 39-53.

Capper, J. (2001). The Emerging Market for On-line Learning: insights from the Corporate Sector. *European Journal of Education*, 36 (2), 237-45.

CGTV (1992). The Jasper experiment: An exploration of issues in learning and instructional design. *Educational Technology Research & Development*, 40 (1), 65-80.

Cocivera, T., & Cronshaw, S. (2004). Action Frame Theory as a practical framework for the executive coaching process. *Consulting Psychology Journal: Practice and Research*, 56 (4), 234–245.

Cognos GmbH & Institut für Innovationsforschung, Technologiemanagement und Entrepreneurship (Ed.) (2002). *Akzeptanz von E-Learning*. http://support.cognos1.de/de_DE/schulung/studie_ueberblick.pdf

Couper,M.P., &. Hansen, S.E. (2001). Computer assisted interviewing. In J.F. Gubrium & J.A. Holstein (Eds.), *Handbook of interview research: Context and method*. Thousand Oaks, CA: Sage Publications.

Crompton, S., Ellison, J., & Stevenson, K. (2002). Better things to do or dealt out of the game? Internet dropouts and infrequent users. Statistics Canada – Canadian Social Trends (No. 11-008). Retrieved on August 16, 2006 from http://www.statcan.ca/english/studies/11-008/feature/star2002065000s2a01.pdf

Csikszentmihalyi, M., & Csikszentmihalyi, I. (1988). Optimal experience: Psychological studies of flow in consciousness. New York: Cambridge University Press.

Csikszentmihalyi, M. (1992). The flow experience and its significance for human psychology. In M. Csikszentmihalyi & I. Selega (Eds.), *Optimal Experience: Psychological Studies of Flow in Consciousness* (pp. 15-35). New York: Cambridge University Press.

Curran, C. (2001). The phenomenon of online learning. *European Journal of Education*, 36 (2), 113-132.

D'Alessio, M., Guarino, A., De Pascalis, V., & Zimbardo, P.G. (2003). Testing Zimbardo's Stanford Time Perspective Inventory (STPI) – Short Form: An Italian study. *Time & Society*, 12 (2/3), 333-347.

Dabbagh, N., & Kitsantas, A. (2005). Using Web-based Pedagogical Tools as Scaffolds for Self-regulated Learning. *Instructional Science*, 33(5-6):513-540.

Dansereau, D. et al. (1979). Development and evaluation of a learning strategy training program. *Journal of Educational Psychology,* 71, (1), 64-73.

Debande, O. (2004). ICTs and the development of eLearning in Europe: The role of the public and private sectors. *European Journal of Education*, 39, (2), 191-208.

De Charms, R. (1968). *Personal causation: The internal affective determinants of behaviour*. New York: Academic Press.

De Charms, R. (1976). *Enhancing motivation: Change in the classroom*. New York: Irvington.

Deci, E.L., & Moller, A.C. (2005). The concept of competence: A starting place for understanding intrinsic motivation and self-determined extrinsic motivation. In A.J. Eliot & C.S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 579-597). New York: Guilford.

Deci, E.L. & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum.

Deci, E.L. & Ryan, R.M. (1987). The support of autonomy and the control of behavior. *Journal of Personality and Social Psychology*, 53, 1024-1037.

Deci, E.L., Ryan, R.M. (2005). *The handbook of self-determination research*. New York: University of Rochester Press.

Descartes, R. (1985). Mediations and priniciples (transl.). In J. Cottingham, R. Stoothoff, & D. Murdoch (Eds.), *Philosophical Writings of Descartes* (Vol.1). Cambridge: Cambridge University Press.

Douglis, F. (2003) Blended learning: choosing the right blend, in: B. Hoffman (Ed.) *The encyclopedia of educational technology.* Retrieved August 16, 2006 from http://coe.sdsu.edu/eet/Articles/blendlearning/index.htm

Downes, S. (2001). Learning objects: Resources For Distance Education Worldwide. *International Review of Research in Open and Distance Learning,* 2 (1). Retrieved August 16, 2006 from http://www.irrodl.org/index.php/irrodl/article/view/32/81

Downes, S. (2005). Place to go: Moodle. Retrieved August 31, 2006 from http://innovateonline.info/index.php?view=article&id=245

Dutton, J., Dutton, M., & Perry, J. (2002). How do ondine students differ from lecture students? *Journal of Asynchronous Learning Networks*, 6 (1), 1-20.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41 (10), 1040-48.

Eccles, J.S. (2005). Subjective Task Value and the Eccles et al. Model of Achievement-Related Choices. Andrew J, Elliot and Carol S. Dweck, Ed. *Handbook of Competence and Motivation*. New York: Guilford.

Eccles, J.S. & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109-32.

Ee, J., Moore, P.J., & Atuputhasamy, L. (2003). High-achieving students: their motivational goals, self-regulation and achievement and relationships to their teachers' goals and strategy-based instruction. *High Ability Studies*, 14(1), 23-39.

Elliot, A. J. & Harackiewicz, J. M. (1994). Goal setting, achievement orientation, and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, 66 (5), 968-80.

Elliot, A.J. & Dweck, C.S. (2005). *Handbook of competence and motivation*. New York: Guildford Press.

Elliot, A.J. (2005). A conceptual history of the achievement goal construct. In A.J. Elliot and C.S. Dweck (Eds.), *Handbook of competence and motivation*. New York: Guildford Press.

Elliot, A.J., & McGregor, H.A. (2001). A 2x2 achievement goal framework. *Journal of Personality and Social Psychology*, 80, 501-519.

Elliot, A.J., McGregor, H.A., & Thrash, T.M. (2002). The need for competence. In E.L. Deci & R.M. Ryan (Eds.), *Handbook of self-determination research* (pp. 361-387).

Elliot, A.J., & Moller, A.C. (2003). Performance-approach goals: Good or bad forms of regulation? *International Journal of Educational Research*, 39, 339-356.

Elliot, A.J., & Thrash, T.M. (2001). Achievement goals and the hierarchical model of achievement motivation. *Educational Psychology Review*, 12, 139-156.

Elliott, E.S., & Dweck, C.S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54, 5-12.

Engler, B. (1995). *Personality theory: An introduction* (4th Ed.). Boston: Houghton Mifflin.

Eppler, M. J. & Mickeler, F. (2003). The evaluation of new media in education: Key questions of an e-learning measurement strategy. *SComS: New Media in Education*, 39-59. Retrieved August 16, 2006 from http://www.knowledgemedia.org/modules/pub/download.php?id=knowledgemedia-57&user=&pass=

EU-Commission (2003). eLearning: Better eLearning for Europe. Directorare-General for Education and Culture (NC-52-03-207-EN-C). Retrieved August 14, 2006 from http://europa.eu.int/information_society/eeurope/index_en.htm

EU-Commission (2006). Bridging the broadband gap. Brussels: Commission of the European Communities. Retrieved on August 20, 2006 from http://europa.eu.int/information_society/eeurope/i2010/docs/digital_divide/communication/com_bridging_bb_gap_2006_en.pdf

EURYDICE (2004) Key Data on Information and Communication Technology in Schools in Europe. Annual Report (Brussels, European Commission). Retrieved on August 16, 2006 from http://194.78.211.243/Documents/ICT/en/FrameSet.htm

Fahy, P.J. (2004). Media Characteristics and Online Learning Technology (p.137-174). In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning*. Athabasca University. Retrieved on May 28, 2006 from http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

Field, A. (2000). *Discovering statistics using SPSS for Windows*. Thousand Oaks, CA: Sage Publications.

Flavell, J. H., et al. (1966). Spontaneous verbal rehearsal in memory task as a function of age. *Child Development*, 37, 283-299.

Fraser, A. B. (1999) Colleges should tap the pedagogical potential of the World-Wide Web. Chronicle of Higher Education , 48, B8. Retrieved August 16, 2006 from http://fraser.cc/Talks/Chronicle.html

Freud, S. (1966). *The complete introductory lectures on psychoanalysis* (J. Strachey, Trans.). New York: Norton.

Fricke, R. (2002). Evaluation von Multimedia. In L.J. Issing & P. Klimsa (Hrsg.), *Information und Lernen mit Multimedia und Internet* (pp. 445-465). Weinheim: Beltz, Psychologie Verlags Union.

Gagné, F. (1993). Constructs and models pertaining to exceptional human abilities. In K. A. Heller, F. J. Mönks, & A. H. Passow (Eds.), *International Handbook of research and development of giftedness and talent* (pp.69-87). Oxford: Pergamon Press.

Gagné, R.M., & Medsker, K.L. (1996). *The conditions of learning: Training applications* (pp.44-56). New York: Harcourt Brace College Publishers.

Garavalia, L.S., & Gredler, M.E. (2002). Prior achievement, aptitude, and use of learning strategies as predictors of college student achievement. *College Student Journal*, 36 (4).

Gardner, H. (1993). *Multiple intelligences* (2nd ed.). New York : Basic Books.

Garrison, R. (2000). Theoretical challenges for distance education in the 21st century: A shift from structural to transactional issues. *International Review of Research in Open and Distance Learning*, 1 (1), 1-17.

Garrison, R. & Kanuka, H. (2004). Blended Learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7 (2), 95-105.

Gonzales, A., & Zimbardo, P.G. (1985). Time in perspective. *Psychology Today*, 19 (3), 21-26.

Goodyear, P., Salmon, G., & Steeples, C. (2001). Competencies for online teaching, *Education Training & Development*, 49 (1), pp. 65–72.

Grabinger, R.S. (1996). Rich environments for active learning. In D.H. Jonassen (Ed.), *Handbook of research of educational communications and technology* (pp. 665-692). New York: Macmillan.

Gubrium, J.F., & Holstein, J.A. (2001). *Handbook of interview research: Context and method*. Thousand Oaks, CA: Sage Publications.

Gustafson, K. L. & Branch, R. M. (1997). *Survey of Instructional Development Models* (3rd ed.).

Hannafin, M.J., Land, S.M., & Oliver, K. (1999). Open learning environments: Foundations, methods, and models. In C.M. Reigeluth (Ed.), *Instructional design theories and models*, Vol. 2 (pp. 115-140). Mahwah, NJ: Erlbaum.

Hannemann, D. (2002). E-learning in virtuellen Hochschulen. Retrieved August 13, 2006 from http://www.bibb.de/de/limpact12973.htm

Harackiewicz, J., Barron, K., Pintrich, P., Elliot, A., & Thrash, T. (2002). Revision of achievement goal theory: Necessary and illuminating. *Journal of Educational Psychology*, 94, 638–645.

Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 17, 300-312.

Hattie, J., Biggs, J., & Purdie, N. (1996). Effects of learning skills interventions on student learning: A meta-analysis. *Review of Educational Research*, 66, 99-136.

Hawking, S. (1988). *A brief history of time*. New York: Bantam Retrieved on August 25, 2006 from http://www.physics.metu.edu.tr/~fizikt/html/hawking/A_Brief_History_in_Time.html

Heckhausen, H. & Gollwitzer, P.M. (1987). Thought contents and cognitive functioning in motivational versus volitional states of mind. *Motivation and Emotion*, 11, 101-120.

Hedberg, J.G. (2006). E-Learning Futures? Speculations for a Time Yet to Come. *Studies in Continuing Education*, 28 (2), 171-183.

Heine, S.J., Kitayama, S., Lehman, D.R., Takata, T., Die, E., Leung, C., et al. (2001). Divergent consequences of success and failure in Japan and North America: An investigation of self-improving motivations and malleable selves. *Journal of Personality and Social Psychology*, 81, 599-615.

Higgins, E.T., & Trope, Y. (1990). Activity engagement theory: Implications of multiply identifiable input for intrinsic motivation. In E.T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition* (Vol.2, pp. 229-264). New York: Guilford.

Hodges, C. B. (2004). Designing to Motivate: Motivational Techniques to Incorporate in E-Learning Experiences. *The Journal of Interactive Online Learning*, 2, (3). Retrieved August 21, 2006 from http://www.ncolr.org/jiol/issues/PDF/2.3.1.pdf

Hofer, B.K., & Yu, S.L. (2003). Teaching self-regulated learning through a "Learning to Learn" course. *Teaching of Psychology*, 30(1), 30–33.

Husman, J., and Lens, W. (1999). The role of the future in student motivation. *Educational Psychologist*, 34, (2), 113–125.

Husman, J., Derryberry, W.P., Crowson, H.M., Lomax, R. (2004) Instrumentality, task value, and intrinsic motivation: making sense of their independent interdependence. *Contemporary Educational Psychology*, 29, (1), 63-76.

Husman, J., McCann, E., Crowson, H.M. (2000). Volitional strategies and future time perspective: embracing the complexity of dynamic interactions. *International Journal of Educational Research*, 33, 777-799.

Islam, K. (2002). Is e-learning floundering? *E-Learning: Enterprise learning and knowledge management strategies.* Retrieved August 16, 2006 from http://www.ltimagazine.com/ltimagazine/article/articleDetail.jsp?id=18563&pageID=1&sk=&date

Jalobeanu, M. (2003). The Internet in Education: The past, the present and, hopefully, the future. In N. Nistor, S. English & S. Wheeler (Eds.) *Towards the Virtual University - International On-Line Learning Perspectives*, pp. 23-36. Greenwich, CT: Information Age Publishing.

Jelfs, A., & Colbourn, C. (2002a). Do students' approaches to learning affect their perceptions of using computing and information technology? *Journal of Educational Media*, 27(1–2), 41–53.

Jelfs, A., & Colbourn, C. (2002b). Virtual seminars and their impact on the role of the teaching staff. *Computers and Education*, 38, 127–136.

Jonas, K. J, Boos, M. & Sassenberg, K. (2002). Unsubscribe, pleeezz!!!: Management and training of media competence in computer-mediated communication. *CyberPsychology and Behavior, 5* (4), 315-329.

Jonassen, D.H. (2000). Computers as mindtools for schools (2nd edition). Upper Saddle River: Merrill.

Kappel, H., Lehmann, B. & Loeper, J. (2002). Distance education at conventional universities in Germany. *International Review of Research in Open and Distance Learning*, 2, (2). Retrieved August 2, 2006 from http://www.icaa.org/iuicode?149.1.1.7

Karabenick, S. A. (2004). Perceived achievement goal structure and college student help seeking. *Journal of Educational Psychology*, 96, 569-581.

Karabenick, S.A., & Sharma, R. (1994). Seeking academic assistance as a strategic learning resource. In P.R. Pintrich (Ed.), Student motivation, cognition, and learning: Essays in honor of Wilbert J. McKeachie (pp. 189-211). Hillsdale, NJ: Erlbaum.

Kawachi, P. (2003). Initiating intrinsic motivation in online education: Review of the current state of the art. *Interactive Learning Environments, 11* (1), 59-81.

Keeton, M.T. (2004). Best online instructional practices: Report of phase 1 of an ongoing study. *Journal of Asynchronous Learning Networks*, 8 (2), 1-26.

Kehr, H.M., Bles, P. & Rosenstiel, L. von (1999). Self-regulation, self-control, and management training transfer. *International Journal of Educational Research*, 31, 487-498.

Kehr, H.M. (2004). *Motivation und Volition*. Göttingen: Hogrefe.

Keller, J.M., & Suzuki, K. (2004). Learner motivation and e-learning design: A multinationally validated process. *Journal of Educational Media*, 29 (3), 229-239.

Kerr, M.S., Rynearson, K. & Kerr, M.C. (2006). Student characteristics for online learning success. *The Internet and Higher Education*, 9 (1), 91-105.

Kerres, M., & De Witt, C. (2003). A didactical framework for the design of blended learning arrangements. *Journal of Educational Media*, 28 (2/3), 101-113.

Klisma, P. (1993). *Neue Medien und Weiterbildung: Anwendung und Nutzung in Lernprozessen der Weiterbildung*. Weinheim: Deutscher Studien Verlag.

Knezek, G. & Christensen, R. (2002). Impact of new information technologies on teachers and students, *Education and Information Technologies*, 7(4), 369–376.

Lazarus, B.D. (2003). Teaching courses online: How much time does it take? *Journal of Asynchronous Learning Networks*, 7 (3), 1-8.

Lee, D. (2004). Web-based instruction in China: Cultural and pedagogical implications and challenges. Educational Technology Research and Development, 52 (1), 101-

105. Retrieved August 2, 2006 from http://www.aect.org/intranet/publications/etrd/5201.asp

Lens, W., & Decruyenaere, M. (1991). Motivation and de-motivation in secondary education: Student characteristics. *Learning and Instruction*, 1, 145–159.

Li, J. (2003). US and Chinese cultural beliefs about learning. *Journal of Educational Psychology*, 95, 258-267.

Lim, C. P. & Barnes, S. (2002). 'Those who can, teach' – the pivotal role of the teacher in the Information and Communication Technologies (ICT) learning environment, *Journal of Educational Media*, 27(1–2), 19–40.

Locke, Edwin A., Latham, Gary P. (1984). *Goal setting: A motivational technique that works!* Prentice-Hall.

Locke, Edwin A., Latham, Gary P., Smith, Ken J., Wood, Robert E. (1990). *A theory of goal setting and task performance*. Prentice-Hall.

Lynch, R. & Dembo, M. (2004). The relationship between self-regulation and online learning in a blended learning context. International Review of Research in Open and Distance Learning. Retrieved March 4, 2006 from http://www.irrodl.org/content/v5.2/lynch-dembo.html

Macdonald, J., Heap, N. & Mason, R. (2001). "Have I learnt it?" Evaluating skills for resource based study using electronic resources. *British Journal of Educational Technology*, 32(4), 419–434.

Mac Keough, K. (2001). National strategies for the promotion of online learning in higher education. European Journal of Education, 36 (2), 223-236.

Maehr, M.L. & Midgley, C. (1991). Enhancing student motivation: A school wide approach. *Educational Psychologist*, 26, 399-427.

Malka, A. and Covington, M.V. (2005) Perceiving school performance as instrumental to future goal attainment: effects on graded performance, *Contemporary Educational Psychology*, 30 (1), 60-80.

Mandl, H. & Reinmann-Rothmeier, G. (2001). Unterrichten und Lernumgebungen gestalten. In A. Krapp & B. Weidenmann (Hrsg.), *Pädagogische Psychologie* (pp. 601- 646). Weinheim: Beltz Psychologie Verlags Union.

Martens, R.L., Gulikers, J., & Bastiaens, T. (2004). The impact of intrinsic motivation on e-learning in authentic computer tasks. *Journal of Computer Assisted Learning,* 20, 368–376

Mason, R. (2006). Learning technologies for adult continuing education. *Studies in Continuing Education*, 28 (2), 121-133.

Mason, R. & Weller, M. (2000). Factors affecting students' satisfaction on a web course. *Australian Journal of Educational Technology*, 16(2), pp. 173–200.

McGrath, J., & Kelly, J. (1986). *Time and human interaction: towards a social psychology of time*, New York: Guildford Press.

McGreal, R., & Elliott, M. (2004). Technologies of online learning (elearning). In T. Anderson & F. Elloumi (Eds.), *Theory and Practice of Online Learning* (pp. 115 -

136). Athabasca, AB: Athabasca University. Retrieved August 25, 2006 from http://cde.athabascau.ca/online_book/pdf/TPOL_chp05.pdf

McInerney, D.M. (2004). A discussion of future time perspective. *Educational Psychology Review*, 16 (2), 141-151.

McKeachie, W.J., Pintrich, P.R., & Lin, Y.G. (1985). Teaching learning strategies. *Educational Psychologist*, 20, 153-160.

McLoughlin, C. (2002). Learner support in distance and networked learning environments: Ten dimensions for successful design. *Distance Education*, 23 (2), 149-162.

Metros, S. (2003) E-learning: from electronic-learning to engaged-learning, plenary address presented to the Ninth Sloan-C International Conference , Florida, 14_16 November. Retrieved August 16, 2006 from www.sloan-c.org/conference/proceedings/2003/plenary.asp

Miller, R.B., Greene, B.A., Montalvo, G.P., Ravindran, B., & Nichols, J.D. (1996). Engagement in academic work: The role of learning goals, future consequences, pleasing others, and perceived ability. *Contemporary Educational Psychology*, 21, 388-422.

Miller, R. B., DeBacker, T. K. and Greene, B. A. (1999). Perceived instrumentality and academics: the link to task valuing, *Journal of Instructional Psychology*, 26 (4), 250-60.

Miller, C.S., Lehmann, J.F., & Koedinger, K.R. (1999). Goals and learning in microworlds. *Cognitive Science*, 23 (3), 305-336.

Miller, R. B. & Brickman, S. J. (2004). A model of future-oriented motivation and self-regulation: effects of time perspective on student motivation. *Educational Psychology Review*, 16 (1), 9-33.

Milliron, M. D., & Miles, C. L. (2000, November/December). Education in a digital democracy: Leading the charge for learning about, with and beyond technology. EDUCAUSE Review, pp. 50-62. Retrieved August 16, 2006 from http://www.educause.edu/pub/er/erm00/articles006/erm0064.pdf

MMB Institut für Medien- und Kompetenzforschung (2004). *Expertise: Status quo und Zukunftsperspektiven von E-Learning in Deutschland*. Essen: Bundesministerium für Bildung und Forschung. Retrieved on November 2, 2004 from http://www.mmb-michel.de/Bericht_NMB_Expertise_Endfassung_20040906.pdf

Murphy, K.L., Mahoney, S.E., Chen, C., Mendoza-Diaz, N.V., & Yang, X. (2005). A constructivist model of mentoring, coaching and facilitating online discussions. *Distance Education*, 26 (3), 341-366.

Nelson, T.H. (1965). Complex information processing: A file structure for the complex, the changing and the indeterminate. *ACM/CSC-ER Proceedings of the 1965 20th national conference* (pp. 84-100). New York: ACM Press. Retrieved on August 24, 2006 from http://delivery.acm.org/10.1145/810000/806036/p84-nelson.pdf?key1=806036&key2=4036346511&coll=&dl=ACM&CFID=15151515&CFTOKEN=6184618

Nesbit, J. C. & Winne, P. H. (2003). Self-regulated inquiry with networked resources. *Canadian Journal of Learning and Technology*, 29 (3). Retrieved on Sept.28, 2004 from http://www.cjlt.ca/content/vol29.3/cjlt29-3_art5.html

Nevgi, A. (2001). Motivational strategies of students in a virtual university. Paper presented a the 3rd International, Inter-disciplinary Evidence-Based Policies and Indicator Systems Conference. Retrieved January 21, 2005 from http://www.edu.helsinki.fi/iqform/

Nicholls, J.G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, 91, 328-346.

Nicholls, J.G., Patashnick, M., Chung Cheung, P., Thorkildsen, T.A., & Lauer, J.M. (1989). Can achievement motivation theory succeed with only one conception of success? In F. Halisch & J. van den Beroken (Eds.), *Intentional perspectives on achievement motivation* (pp. 100-119). Lisse, The Netherlands: Swets & Zeitlinger.

Nistor, N., Schnurer, K., & Mandl, H. (2005). Akzeptanz, Lernprozess und Lernerfolg in virtuellen Seminaren – Wirkungsanalyse eines problemorientierten Seminarkonzepts. (Research Report No. 174). Munich, Germany: Ludwig Maximilians Universität, Institute for Educational Psychology.

Nota, L., Soresi, S., & Zimmerman, B.J. (2004). Self-regulation and academic achievement resilience: A longitudinal study. *Educational Research*, 41, 198-215.

Nückles, M., Schwonke, R., Berthold, K., & Renkl, A. (2004). The use of public learning diaries in blended learning. *Journal of Educational Media*, 29 (1), 49-66.

Nuttin, J., & Lens, W. (1985). *Future time perspective and motivation: theory and research method*. Leuven and Hillsdale, NJ: Leuven University Press and Erlbaum.

O'Connor, J. & Van der Horst, B. (2006). *Neural Networks and NLP Strategies - Part 3: The NLP Strategies Model*. Retrieved August 20, 2006 from http://www.cs.ucr.edu/~gnick/bvdh/print_nlp_strategies_3.htm

OECD (June, 30, 2005). *The definition and selection of key competencies: executive summary*. DeSeCo Project. Retrieved May 19, 2006 from http://www.oecd.org/dataoecd/47/61/35070367.pdf

OECD (2005). *E-Learning in Tertiary Education*. Policy Brief. Retrieved August 16, 2006 from http://www.oecd.org/dataoecd/27/35/35991871.pdf

Opaschowski, H. (2006). *Deutschland 2020: Wie wir Morgen leben – Prognosen der Wissenschaft*. 2nd Edition. Wiesbaden: Verlag für Sozialwissenschaften.

Osguthorpe, R.T., & Graham, C.R. (2003). Blended learning environments: Definitions and Directions. *The Quarterly Review of Distance Education*, 4 (1), 227-233

O'Toole, J.M., & Absalom, D.J. (2003). The impact of blended learning on student outcomes: Is there room on the horse for two? *Journal of Educational Media*, 28 (2/3), 179-190.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, 66 (4), 543-578.

Paris, S.G., & Newman, R.S. (1990). Developmental aspects of self-regulated learning. *Educational Psychologist*, 25(1), 87-102.

Parker, N.K. (2004). The Quality Dilemma in Online Education (pp. 385-409). In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning*. Athabasca

University. Retrieved on May 28, 2006 from http://cde.athabascau.ca/online_book/pdf/TPOL_book.pdf

Pekrun, R. (1988). *Emotion, Motivation und Persönlichkeit*. Weinheim: Psychologie Verlags Union.

Pekrun, R., Goetz, T., Titz, W., & Perry, R.P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist*, 37(2), 91-105.

Peters, O. (2000). Digital learning environments: New possibilities and opportunities. *International Review of Research in Open and Distance Learning,* 1(1). Retrieved August 16, 2006 from http://www.irrodl.org/index.php/irrodl/article/view/3/23

Phalet, K., Andriessen, I., & Lens, W. (2004). How future goals enhance motivation and learning in multicultural classrooms. *Educational Psychology Review*, 16 (1), 59-89.

Phares, E.J. (1976). *Locus of control in personality*. Morristown, NJ: General Leraning Press.

Phipps, R. & Merisotis, J. (1999). What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education. Washington, D.C.: The Institute for Higher Education Policy. Retrieved August 16, 2006 from http://www.ihep.org/Pubs/PDF/Difference.pdf

Pintrich, P. R. & Zusho, A. (2001). The development of academic self-regulation: The role of cognitive and motivational factors. In A. Wigfield & J. S. Eccles (Eds.), *Development of achievement motivation*. San Diego: Academic Press.

Pintrich, P. R. (2000a). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 531-566). San Diego, CA: Academic Press.

Pintrich, P.R. (2000b). An achievement goal theory perspective on issues in motivation terminology, theory and research. *Contemporary Educational Psychology*, 25, 95-104.

Pintrich, P.R. (2000c). Educational Psychology at the millennium: A look back and a look forward. *Educational Psychologist*, 35 (4), 221-226.

Pintrich, P. R., Roeser, R. W., & De Groot, E. A. M. (1994). Classroom and individual differences in early adolescents' motivation and self-regulated learning. *Journal of Early Adolescence*, 14 (2), 139-61.

Pintrich, P.R. & De Groot, E.V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82 (1), 33-40.

Pintrich, P.R. & Schrauben, B. (1992). Students' motivational beliefs and their cognitive engagement in classroom tasks. In D. Schunk & J. Meece (Eds.), *Student perceptions in the classroom: Causes and consequences* (pp. 149-183). Hillsdale, NJ: Erlbaum.

Pintrich, P.R., Smith, D.A., Garcia, T., & McKeachie, W.J. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). *Educational and Psychological Measurement*, 53 (3), 801-813.

Pintrich, P.R. & Schunk, D.H. (2002). *Motivation in education: Theory, research and applications* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Pintrich, P.R., Conley, A.M., & Kempler, T.M. (2003). Current issues in achievement goal theory and research. *International Journal of Educational Research*, 39, 319-337.

Pintrich, P.R., Smith, D.A., Garcia, T. & McKeachie, W.J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)*. National Center for Research to Improve Post-secondary Teaching and Learning. Technical Report No. 91-B-004. Regents of the University of Michigan.

Pugh, K. J., Bergin, D. A. (2006). Motivational influences on transfer. *Educational Psychologist*, 41 (3), 147-160.

Purdie, N., Hattie, J. & Douglas, G. (1996). Student conceptions of learning and their use of self-regulated learning strategies: A cross-cultural comparison. *Journal of Educational Psychology*, 88, 87-100.

Puustinen, M., & Pulkkinen, L. (2001). Models of self-regulated learning: A review. *Scandinavian Journal of Educational Research*, 45 (3), 269-287.

Radosevich, D.J., Vaidyanathan, V.T., Yeo, S., & Radosevich, D.M. (2004). Relating goal orientation to self-regulatory processes: A longitudinal field test. *Contemporary Educational Psychology*, 29, 207-229.

Raynor, J.O. (1981). Future orientation and achievement motivation: Toward a theory of personality functioning and change. In G. d'Ydewalle & M. Lens (Eds.), *Cognition in human motivation and learning* (pp.199-231). Hillsdale, NJ: Erlbaum.

Reese, H.W. (1962). Verbal mediation as a function of age level. *Psychology Bulletin*, 59, 502-509.

Reece, M., & Lockee, B. (2005). Improving training outcomes through blended learning. Journal of Asynchronous Learning Networks, 9 (4).

Reigeluth, C.M. (1999). *Instructional design theories and models*. Mahwah, NJ: Erlbaum.

Robinson, F. P. (1946). *Effective Study*. New York: Harper & Row

Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80 (1, Whole No. 609).

Rovai, A.P. (2004). A constructivist approach to online college learning. *The Internet and Higher Education*, 7 (2), 79-93.

Russel, T.L. (1999) The No Significant Difference Phenomenon, North Carolina State University, Raleigh, NC. http://teleeducation.nb.ca/nosignificantdifference/

Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.

Säljö, R. (2004). Learning and technologies, people and tools in co-ordinated activities. *International Journal of Educational Research*, 41, 489-494.

Schiefele, U., & Pekrun, R. (1993). Psychologische Modelle des Fremdgesteuerten und Selbstgesteuerten Lernens. In F.E. Weinert (Ed.) *Psychologie des Lernens und der Instruktion*. Göttingen: Hogrefe.

Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychologist*, 26, 299-323.

Schmidt, B. (2004). *Virtuelle Lernarrangements für Studienanfänger: Didaktische Gestaltung und Evaluation des "Online-Lehrbuchs" Jugendforschung und der begleitenden virtuellen Seminare*. München: Herbert Utz Verlag.

Schmidt, J.T. (2004). *Development and evaluation of a music teaching method based on Sternberg's theory of intelligence*. Unpublished master's thesis. Ludwig-Maximilians-Universität, Munich, Germany.

Schmidt, J.T., & Werner, C.H. (2006). Designing online instruction for success: Future oriented motivation and self-regulation. In D. Remenyi (Ed.) *5th European Conference on e-Learning* (pp.323-333). Reading: Academic Conferences Limited.

Schmitz, B., & Wiese, B.S. (2006). New perspectives for the evaluation of training sessions in self-regulated learning: Time-series analyses of diary data. *Contemporary Educational Psychology,* 31 (1), 64-96.

Schneider, A.L. (1998). Pasteur's Quadrant: A framework for designing reward strategies to enhance public service in public universities. *Metropolitan Universities: An International Forum*, 9 (3), 53-61. Retrieved October 1, 2006 from www.eric.ed.gov/sitemap/html_0900000b80013ad7.html

Schneider, D.K. (2006). Instructional design models and methods. Online learning in diplomacy workshop. TECFA – University of Geneva. Retrieved on August 30, 2006 from http://www.diplomacy.edu/Conferences/MFA/workshop.asp

Schunk, D.H. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychology*, 25, 71-86.

Schunk, D. H. (1991a). *Learning Theories: An educational perspective* (Ch.9, pp. 265-296). New York: Merrill.

Schunk, D.H. (1991b). Self-efficacy and academic motivation. *Educational Psychologist*, 26, 207-231.

Schunk, D.H. (1993). *Enhancing strategy use: Influences of strategy value and goal orientation*. Paper presented at the Annual Meeting of the American Educational Research Association (Atlanta, GA).

Schutz, P.A. (1994). Goals as the transactive point between motivation and cognition. In P.R. Pintrich, D.R. Brown, and C.E. Weinstein (Eds.), *Student motivation, cognition and learning: Essays in honor of Wilbert J. McKeachie*. Mahwah, NJ: Erlbaum.

Schroeder, R. (2003). Blogging online learning news and research. *Journal of Asynchronous Learning Networks*, 7 (2), 56-60.

Seale, C.F. (2001). Computer assisted analysis of qualitative interview data. In J.F. Gubrium & J.A. Holstein (Eds.), *Handbook of interview research: Context and method*. Thousand Oaks, CA: Sage Publications.

Seel, N.M. (2001). Epistemology, situated cognition and mental models: Like a bridge over troubled water. *Instructional Science*, 29, 403-427.

Shell, D., & Husman, J. (2001). The multivariate dimensionality of personal control and future time perspective beliefs in achievement and self-regulation. *Contemporary Educational Psychology*, 26, (4), 481-506.

Shuell, T. J. (1996). Teaching and learning in a classroom context. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 726-764). New York: Macmillan.

Simons, J., Dewitte, S., & Lens, W. (2000). Wanting to have vs. wanting to be: The effect of perceived instrumentality on goal orientation. *British Journal of Psychology*, 91, 335-351.

Simons, J., Dewitte, S., & Lens, W. (2004). The role of different types of instrumentality in motivation, study strategies, and performance – Know why you learn, so you'll know what you learn! *British Journal of Educational Psychology*, 74, 343-360.

Simons, J., Vansteenkiste, M., Lens, W., & Lacante, M. (2004). Placing motivation and future time perspective theory in a temporal perspective. *Educational Psychology Review*, 16 (2), 121-139.

Sims, R., Dobbs, G., & Hand, T. (2002, October). Enhancing quality in online learning: Scaffolding planning and design through proactive evaluation. *Distance Education,* 23(2), 135-148.

Skinner, B.F. (1965). *Science and human behaviour*. New York: Free Press.

Skinner, E.A., Wellborn, J.G., & Connell, J.P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology*, 82, 22-32.

Slavin, R. E. (1992). When and why does cooperative learning increase achievement? Theoretical and empirical perspectives. In R. Hertz-Lazarowitz & N. Miller (Eds.), *Interaction in cooperative Groups: The Theoretical Anatomy of Group Learning* (pp.145-173). Cambridge, UK: Cambridge University Press.

Stark, R. & Mandl, H. (2003). *Web-based learning in the field of empirical research methods* (Research Report No. 59). Munich, Germany: Ludwig Maximilians Universität, Institute for Educational Psychology.

Sternberg, R. J. (1994). Changing conceptions of intelligence and their impact upon the concept of giftedness: The triarchic theory of intelligence. In J.L. Genshaft, M. Bireley & C.L. Hollinger (Eds.), *Serving Gifted and Talented Students* (pp. 33-47). Austin: Pro-Ed.

Sternberg, R.J. (2005). Intelligence, Competence, and Expertise. In A.J. Elliot & C.S. Dweck (Eds.) *Handbook of Competence and Motivation* (pp.15-30). New York: Guildford Press.

Stipek, D. (1996). Motivation and instruction. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 85-113). New York: Macmillan.

Stokes, D. (1997). *Pasteur's quadrant: Basic science and technological innovation*. Washington, DC: Brookings Institute.

Sweller, J., & Cooper, G.A. (1985). The use of worked examples as a substitute for problem solving in learning algebra. *Cognition and Instruction*, 2 (1), 59-89.

Thaiupathump, C., Bourne, J., & Campbell, J.O. (1999). Intelligent agents for online learning. *Journal of Asynchronous Learning Networks*, 3 (2), 1-19.

Thiede, K.W., Anderson, M.C., Therriault, D. (2003). Accuracy of metacognitive monitoring affects learning of texts. *Journal of Educational Psychology*, 95 (1), 66-73.

Thrash, T.M., & Elliot, A. J. (2001). Delimiting and integrating the goal and motive constructs in achievement motivation. In A. Efklides, J. Kuhl, & R. Sorrentino (Eds.), *Trends and prospects in motivation research* (pp.3-21). Amsterdam: Kluwer Academic Publishers. Retrieved June 26, 2005 from http://www.scp.rochester.edu/research/apav/publications/2001.html

Thurber, B.D., Pope, J.W., & Stratton, J. (2003). *Computer, telecommunications and Western culture*. Retrieved August 17, 2006 from http://www.Hoboes.com/html/NetLife/CRIT/CWC.html

Turner, J.C., & Meyer, D.K. (2000). Studying and understanding the instructional contexts of classrooms: Using our past to forge our future. Educational Psychologist, 35 (2), 69-85.

Twigg, C. A. Innovations in Online Learning: Moving Beyond No Significant Difference. In *The Pew Learning Program*, 2001. Retrieved August 16, 2006 from http://www.thencat.org/Monographs/Mono4.pdf

UM-St. Louis (2006). Destination 3: Instructional design models and components. In *Roadmap to Effective Distance Education Instructional Design*. University of

Missouri St. Louis. Retrieved on August 29, 2006 from http://www.umsl.edu/technology/frc/DEID/destination3deid/3bmodels.html

Urdan, T.C. & Maehr, M. (1995). Beyond a two-goal theory of motivation and achievement: A case for social goals. *Review of Educational Research*, 65, 213-243.

Valiathan, P. (2002) Blended learning models, *Learning Circuits.* Retrieved August 16, 2006 from http://www.learningcircuits.org/2002/aug2002/valiathan.html

Wang, G. et al. (2003). *Departure, abandonnment and dropout of e-learning: dilemmas and solutions*. [online] Masie Center E-Learning Consortium, http://www.masie.com/researchgrants/2003/JMU_Final_Report.pdf

Warren, C.B. (2001) Qualitative interviewing. In J.F. Gubrium & J.A. Holstein (Eds.), *Handbook of interview research: Context and method*. Thousand Oaks, CA: Sage Publications.

Warren, L. & Holloman, H. (2005). On-line instruction: are the outcomes the same? *Journal of Instructional Psychology*, 32 (2), 148-151.

Watkins, D. & Hattie, J. (1981). The learning processes of Australian university students: Investigations of contextual and personological factors. *British Journal of Educational Psychology*, 5 (3), 384-393.

Webb, N.M., & Palinscar, A.S. (1996). Group processes in the classroom. In D. Berliner & R. Calfee (Eds.), *Handbook of Educational Psychology* (pp.841-873). New York: Macmillan.

Weinstein, C. E. & Meyer, R. E. (1986). The teaching of learning strategies. In M. C. Wittrock (Ed.), *Handbook of research on teaching*. New York: Macmillan.

Wentzel, K. (2000). What is it that I'm trying to achieve? Classroom goals from a content perspective. *Contemporary Educational Psychology*, 25, 105–115.

Werner, C.H. & Schmidt, J.T. (2006, September). Customized corporate education using Moodle. *Proceedings of the 3rd International Moodle Conference, Hagenberg, Austria*, 71-78.

Whipp, J. L., & Chiarelli, S. (2004). Self-regulation in a Web-based course: A case study. *Educational Technology Research and Development*, 52(4), 5-22.

White, R.W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-333.

Widrick, S. M., Mergen, E., & Grant, D. (2002). Measuring the dimensions of quality in higher education. *Total Quality Management,* 13(1), 123-131.

Wiener, B. (1985). *Human Motivation*. New York: Springer-Verlag.

Wicker, F.W., Turner, J.E., Reed, J.H., McCann, E.J., & Do, S.L. (2004). Motivation when optimism declines: Data on temporal dynamics. *The Journal of Psychology*, 138 (5), 421-432.

Wiley, D.A. (2000). Connecting learning objects to instructional design theory: A definition, a metaphor, and a taxonomy. Retrieved August 17, 2006 from http://reusability.org/read/chapters/wiley.doc

Williams, C. (2002). Learning on-line: A review of recent literature in a rapidly expanding field. *Journal of Further and Higher Education*, 26(3), 263–272.

Wilson, B. (2004). Designing e-Learning environments for flexible activity and instruction. *Educational Technologies Research and Development*, 52 (4), 77-84.

Wilson, B.G., & Cole, P. (1996). Cognitive teaching models. In D.H. Jonassen (Ed.), *Handbook of research in instructional technology*. New York: Scholastic Press.

Wilson, B.G., & Madsen Myers, K. (2000). Situated cognition in theoretical and practical contexts. In D.H. Jonassen & S.M. Land (Eds.), *Theoretical foundations of learning environments* (pp. 57-85). Mahwah, NJ: Erlbaum.

Winne, P.H. (1995). Inherent details in self-regulated learning. *Educational Psychologist*, 30, 173-187.

Winne, P. & Hadwin, A. (1998). Studying as self-regulated learning. In D.J. Hacker, J. Dunlosky, & A.C. Gresser (Eds.), *Metacognition in educational theory and practice*. Hillsdale, NJ: Erlbaum.

Winne, P. H., & Perry, N. E. (2000). Measuring self-regulated learning. In M. Boekaerts, P. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 531-566). San Diego, CA: Academic Press.

Winne, P.H. & Nesbit, J.C. (2003). Self-regulated inquiry with networked resources. *Canadian Journal of Learning and Technology*, 29 (3).

Winne, P.H. (1996). A metacognitive view of individual differences in self-regulated learning. *Learning & Individual Differences*, 8 (4).

Winne, P.H. (2004). Dynamic, and interactive learning environments: Theoretical and methodological challenges when researching motivation in context. *European Psychologist*, 9 (4), 257-63.

Winne, P.H. (2005). A Perspective on State-of-the-art Research on Self-regulated Learning. *Instructional Science*. 33(5-6), 559-565.

Wolters, C.A., & Rosenthal, H. (2000). The relation between students' motivational beliefs and their use of motivational regulation strategies. *International Journal of Educational Research*, 33, 801-820.

Young, J.R. (2002). Hybrid teaching seeks to end the divide between traditional and online instruction. *Chronicle of Higher Education*, 48 (28).

Zhang, D.& Nunamaker, J. F. (2003). Powering E-Learning in the new millennium: an overview of E-Learning and enabling technology, *Information Systems Frontiers*, 5(2), 207–218.

Zimbardo, P.G. (1990) Strategies for Coping with Social Traps: Time Perspectives Influences. Paper presented at the 98th Annual Convention of American Psychological Association, Boston. Retrieved August 14, 2005 from http://www.zimbardo.com/zimbardo.html

Zimbardo, P. G., and Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, 77, 1271-1288.

Zimbardo, P. G., Johnson, R., and Weber, A. and (2002) *Psychology: Core Concepts* (4th ed.), Boston: Allyn and Bacon.

Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81, 330-341.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, 41, 64-70.

Zimmerman, B.J., & Pons, M.M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American Educational Research Journal*, 23, 614-628.

12 APPENDICES

12.1 APPENDIX A – Instruments

This appendix includes examples of both the self-report questionnaire on motivational beliefs, learning strategies and time perspective and the questions for the semi-structured interview. Both of these instruments were operationalised via the Moodle learning management system: the questionnaire was administered online and the interviews were conducted using individual online CHAT sessions. Due to the limitations of a paper-based dissertation, the instruments included in this appendix are paper-based versions of the online instruments.

12.1.1 Self-Report Questionnaire (paper-based version)

DESCRIPTION

Joel Schmidt, doctoral student at the University of Munich (Germany), is conducting research on college teaching and learning in blended learning environments at the University of Applied Management.

We would like to ask for your participation in the study. Over the course of the semester you will be asked to fill out questionnaires related to your attitude toward time as well as motivation and learning in this class. If you participate, you will receive feedback on your learning skills, motivation, and also your attitude toward time that may be useful to you in your college career.

YOUR PARTICIPATION IS VOLUNTARY AND NOT RELATED IN ANY WAY TO YOUR GRADE IN THIS CLASS.

WELCOME

The following questionnaire asks you about your study habits and learning skills, motivation for work in this course, and attitudes toward time.

THERE ARE NO RIGHT OR WRONG ANSWERS TO THIS QUESTIONNAIRE. THIS IS NOT A TEST.

It will take approximately 15-20 minutes to complete.

We want you to respond to the questionnaire as accurately as possible, reflecting your own attitudes and behaviours in this course.

Your answers to this questionnaire will be analyzed by computer and you will receive an individual report (profile) after all data has been processed. The individual report will help you identify motivation and learning skills that you may want to improve during further study.

All your responses are strictly confidential and will be used only for the purposes of this study. Results of the study will be published in academic journals, periodicals, and university publications. After 5 years, all original questionnaires will be destroyed and only statistical data will be archived in an anonymous format to be used only for academic review, including verification of the reliability and validity of the study.

By completing this questionnaire you are indicating your willingness to be involved in this study. Thank you for supporting collaborative efforts in international educational research!

If you have any questions regarding your participation, please contact Joel Schmidt:
joel.schmidt@myfham.de

PART A – DEMOGRAPHICS

1.	Please enter your name (last, first) in the field below. This information is necessary for returning feedback to you.		
2.	Please enter your email address in the field below. This information is necessary for returning feedback to you.		
3.	What course are you taking this questionnaire for?		
4.	Please specify your gender (male or female).	M	F

5.	Please specify your age-range (select only one option).	18 - 23 24 - 30 31 - 40 41 - 50 over 50
6.	Please specify your current semester (select only one option).	1st 2nd 3rd 4th
7.	How many hours per week do you work (at a job)? Please use numbers.	
8.	How many (if any) university courses have you taken in this subject area? Please use numbers.	
9.	How many courses are you taking this semester? Please use numbers.	
10.	How many hours a week do you study for this course? Please use numbers.	
11.	What is your reason for taking this course?	☐ Fulfills program requirement ☐ Content seems interesting ☐ Will be useful in other courses ☐ Will improve my career options ☐ Looks like an easy elective ☐ Fits my schedule Other:

PART B – MOTIVATION

12.	It is important for me to understand the content of this course as thoroughly as possible.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
13.	If I study in appropriate ways, then I will be able to learn the material in this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
14.	My fear of performing poorly in this course compared to others is often what motivates me.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
15.	I think I will be able to use what I learn in this course in other courses.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
16.	I believe I will receive an excellent grade in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
17.	I'm certain I can understand the most difficult material presented in the readings for this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
18.	It is important for me to do better than other students.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
19.	I just want to avoid doing poorly in this class.	Not at		Very

		all true of me 1	2 3 4 5 6	true of me 7
20.	It is my own fault if I don't learn the material in this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
21.	It is important for me to learn the course material in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
22.	My goal in this class is to get a better grade than most of the other students.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
23.	I'm confident I can learn the basic concepts taught in this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
24.	It is important for me to do well compared to others in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
25.	I just want to avoid doing poorly in this class compared to others.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
26.	I'm confident I can understand the most complex material presented by the instructor in this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
27.	I want to learn as much as possible from this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
28.	I am very interested in the content area of this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
29.	If I try hard enough, then I will understand the course material.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
30.	My goal for this class is to avoid performing poorly.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
31.	My fear of performing poorly in this class is often what motivates me.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
32.	I expect to do well in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
33.	I desire to completely master the material presented in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
34.	I think the course material in this class is useful for me to learn.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
35.	I worry that I may not learn all that I possibly could in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
36.	If I don't understand the course material, it is because I didn't try hard enough.	Not at all true of me		Very true of me

		1	2 3 4 5 6	7
37.	I like the subject matter of this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
38.	Understanding the subject matter of this course is very important to me.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
39.	My goal is to avoid performing poorly compared to the rest of the class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
40.	Sometimes I'm afraid that I may not understand the content of this class as thoroughly as I'd like.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
41.	I am often concerned that I many not learn all that there is to learn.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
42.	Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7

PART C – LEARNING STRATEGIES

43.	During class time, I often miss important points because I'm thinking of other things.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
44.	When studying for this course, I often try to explain the material to a classmate or friend.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
45.	I usually study in a place where I can concentrate on my coursework.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
46.	When reading for this course, I make up questions to help focus my reading.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
47.	I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
48.	Even if I have trouble learning the material for this class, I try to do the work on my own, without help from anyone.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
49.	When I become confused about something I'm reading for this class, I go back and try to figure it out.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
50.	I make good use of my study time for this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
51.	If course readings are difficult to understand, I change the way I read the material.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
52.	I try to work with other students from this class to complete course assignments.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
53.	I work hard to do well in this class even if I don't like what we	Not at all true		Very true of

	are doing.	of me 1	2 3 4 5 6	me 7
54.	When studying for this course, I often set aside time to discuss course material with a group of students from the class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
55.	I find it hard to stick to a study schedule.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
56.	Before I study new course material thoroughly, I often skim it to see how it is organized.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
57.	I ask myself questions to make sure I understand the materials I have been studying in this class.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
58.	I try to change the way I study in order to fit the course requirements and the instructor's teaching style.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
59.	I often find that I have been reading for this class but don't know what it was all about.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
60.	I ask the instructor to clarify concepts I don't understand well.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
61.	When course work is difficult, I either give up or only study the easy parts.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
62.	I try to think through a topic to decide what I am supposed to learn from it rather than just reading it over when studying for this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
63.	I have a regular place set aside for studying.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
64.	When I can't understand the material, I ask another student in this class for help.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
65.	I make sure that I keep up with the weekly readings and assignments for this course.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
66.	I attend this class regularly.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
67.	Even when course materials are dull and uninteresting, I manage to keep working until I finish.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
68.	I try to identify students in this class whom I can ask for help if necessary.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
69.	When studying for this course I try to determine which concepts I don't understand well.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
70.	I often find that I don't spend very much time studying because of other activities.	Not at all true of me		Very true of me

		1	2 3 4 5 6	7
71.	When I study for this class, I set goals for myself in order to direct my activities in each study period.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
72.	If I get confused taking notes in class, I make sure I sort it out afterwards.	Not at all true of me 1	2 3 4 5 6	Very true of me 7
73.	I rarely find time to review my notes or readings before an exam.	Not at all true of me 1	2 3 4 5 6	Very true of me 7

PART D – TIME PERSPECTIVE

74.	I take risks to put excitement in my life.	Not at all true of me 1	2 3 4	Very true of me 5
75.	I like my close relationships to be passionate.	Not at all true of me 1	2 3 4	Very true of me 5
76.	Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.	Not at all true of me 1	2 3 4	Very true of me 5
77.	Taking risks keeps my life from becoming boring.	Not at all true of me 1	2 3 4	Very true of me 5
78.	I complete projects on time by making steady progress.	Not at all true of me 1	2 3 4	Very true of me 5
79.	My life path is controlled by forces I cannot influence.	Not at all true of me 1	2 3 4	Very true of me 5
80.	I am able to resist temptations when I know that there is work to be done.	Not at all true of me 1	2 3 4	Very true of me 5
81.	I find myself getting swept up in the excitement of the moment.	Not at all true of me 1	2 3 4	Very true of me 5
82.	I do things impulsively.	Not at all true of me 1	2 3 4	Very true of me 5
83.	You can't really plan for the future because things change so much.	Not at all true of me 1	2 3 4	Very true of me 5
84.	When I want to achieve something, I set goals and consider specific means for reaching those goals.	Not at all true of me 1	2 3 4	Very true of me 5
85.	Since whatever will be will be, it doesn't really matter what I do.	Not at all true of me 1	2 3 4	Very true of me 5
86.	Ideally, I would live each day as if it were my last.	Not at all true of me 1	2 3 4	Very true of me 5
87.	I prefer friends who are spontaneous rather than predictable.	Not at all true		Very true of

		of me 1	2	3	4	me 5
88.	I keep working at difficult, uninteresting tasks if they will help me get ahead.	Not at all true of me 1	2	3	4	Very true of me 5
89.	I try to live my life as fully as possible, one day at a time.	Not at all true of me 1	2	3	4	Very true of me 5
90.	Often luck pays off better than hard work.	Not at all true of me 1	2	3	4	Very true of me 5
91.	It upsets me to be late for appointments.	Not at all true of me 1	2	3	4	Very true of me 5
92.	It is important to put excitement in my life.	Not at all true of me 1	2	3	4	Very true of me 5
93.	I make decisions on the spur of the moment.	Not at all true of me 1	2	3	4	Very true of me 5
94.	I believe that a person's day should be planned ahead each morning.	Not at all true of me 1	2	3	4	Very true of me 5
95.	I feel that it's more important to enjoy what you are doing than to get work done on time.	Not at all true of me 1	2	3	4	Very true of me 5
96.	I meet my obligations to friends and authorities on time.	Not at all true of me 1	2	3	4	Very true of me 5
97.	I believe that getting together with one's friends to party is one of life's important pleasures.	Not at all true of me 1	2	3	4	Very true of me 5
98.	It is more important for me to enjoy life's journey than to focus only on the destination.	Not at all true of me 1	2	3	4	Very true of me 5
99.	It takes joy out of the present and flow of my activities, if I have to think about goals, outcomes, and products.	Not at all true of me 1	2	3	4	Very true of me 5
100.	I make lists of things to do.	Not at all true of me 1	2	3	4	Very true of me 5
101.	Before making a decision, I weigh the costs against the benefits.	Not at all true of me 1	2	3	4	Very true of me 5
102.	I often follow my heart more than my head.	Not at all true of me 1	2	3	4	Very true of me 5
103.	Fate determines much in my life.	Not at all true of me 1	2	3	4	Very true of me 5
104.	If things don't get done on time, I don't worry about it. (r)	Not at all true of me 1	2	3	4	Very true of me 5

105.	There will always be time to catch up on my work. (r)	Not at all true of me 1	2	3	4	Very true of me 5
106.	It doesn't make sense to worry about the future, since there is nothing that I can do about it anyway.	Not at all true of me 1	2	3	4	Very true of me 5
107.	I take each day as it is rather than try to plan it out. (r)	Not at all true of me 1	2	3	4	Very true of me 5
108.	Life today is too complicated: I would prefer the simpler life of the past.	Not at all true of me 1	2	3	4	Very true of me 5
109.	When listening to my favourite music, I often lose all track of time.	Not at all true of me 1	2	3	4	Very true of me 5
110.	Spending what I earn of pleasures today is better than saving for tomorrow's security.	Not at all true of me 1	2	3	4	Very true of me 5

12.1.2 Survey Feedback for Students (Learning Profile)

This is an example of the feedback that was provided to all participants in the study. The learning profile includes descriptions of the major learning processes that were included in the survey, as well as pictorial graphs that indicate mean levels over the three different time frames. Although not every variable is included in the feedback, it does provide students with a glimpse inside their own learning practices. Since all of the variables included in the feedback are non-static and adaptable, such feedback can indicate areas for potential improvement or revision.

Research Project-2005/06 (Schmidt)

UNIVERSITY of Applied Management

Learner Profile

Thank you for participating in the research project with Joel Schmidt examining learning processes in blended learning environments. This research is part of ongoing efforts at the university to improve instruction and student support.

As promised, we are providing you with feedback from the questionnaires (all three). This feedback is intended to help you determine your own strengths and weaknesses as a student. The following factors are included in your feedback profile: time perspective, goal orientation, and metacognitive self-regulation.

You are presented with a graph showing your average score on each factor for survey 1 and 2. Remember, these are the results of your own perceptions based on the questionnaire; it only presents a "picture" at a certain time. However, you have the benefit of examining more than one picture so that you can see changes over time and subject. Time 1 & 2 correspond with Accounting (BuBi 1).

All of these factors are adaptable, so you can decide whether you want to change certain aspects of how you learn.

Time Perspective

Three different time perspectives were examined in the survey: future, present-hedonistic, and present-fatalistic. Each of them has different impacts within an academic context. In general, a future time perspective (FTP) is seen to be the most advantageous (goal focused, perseverance, and planning). Present-hedonistic (PH) is regarded as being potentially limiting to academic success (easily distracted, focus on present enjoyment instead of tasks relating to a future goal). Present-fatalistic (PF) is regarded as the most inhibiting since it represents a belief that present actions have no impact on the future (over value of "fate" or luck, often associated with feelings of hopelessness).

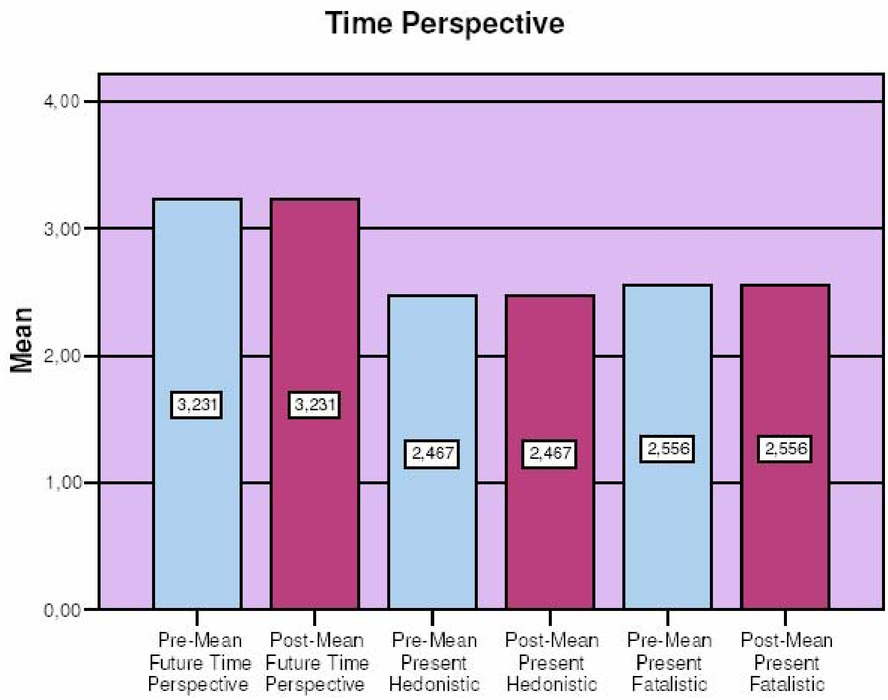
Goal Orientation

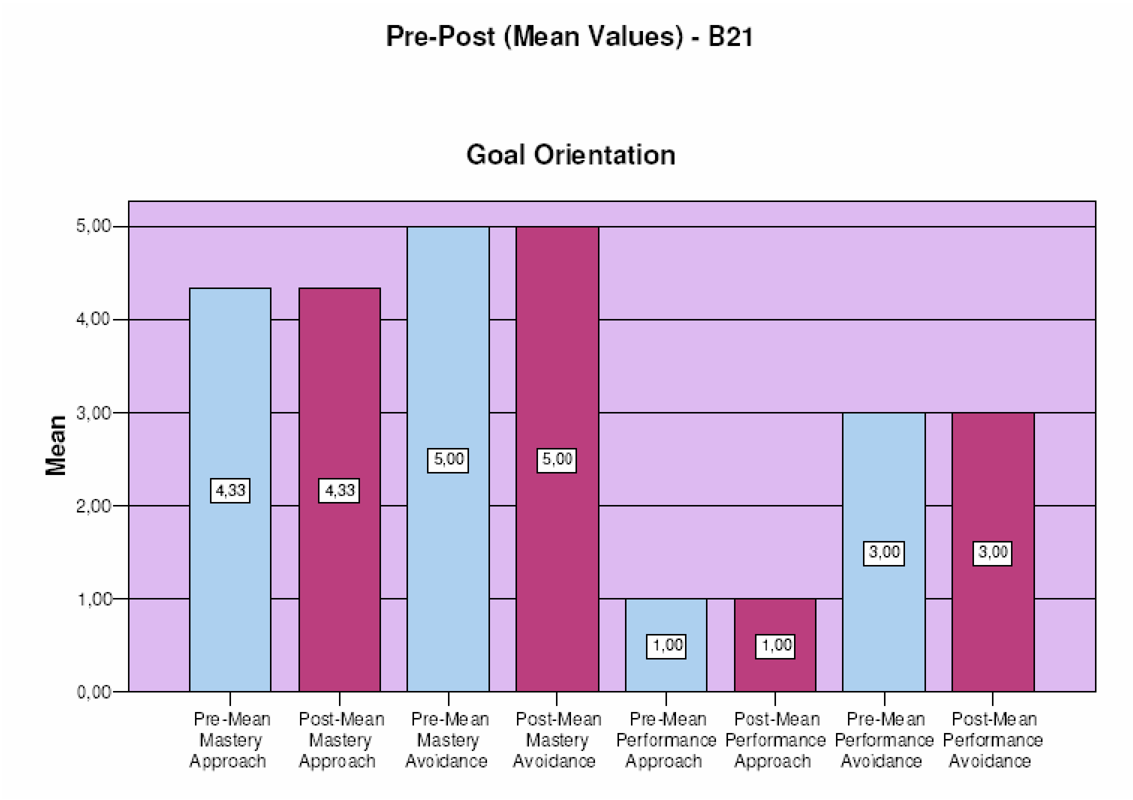
Four different achievement goal orientations were examined (why you engage in learning): mastery-approach, mastery-avoidance, performance-approach, performance-avoidance. In general, mastery-approach (Mapp) reflects a purpose focused on learning to improve competence (to "master" a skill) and is determined by your "self" rather than others. Mastery-avoidance (Mav) represents a purpose focused on avoiding incompetence (failure). Performance-approach (Papp) reflects a purpose of gaining normative competence (goal to be better than the average). Performance-avoidance (Pav) reflects a purpose focused on avoiding normative incompetence (to be worse than others). These goal orientations can provide insight on why you learn (even at the course level). A person may have different orientations for certain areas, fields or subjects – what are yours?

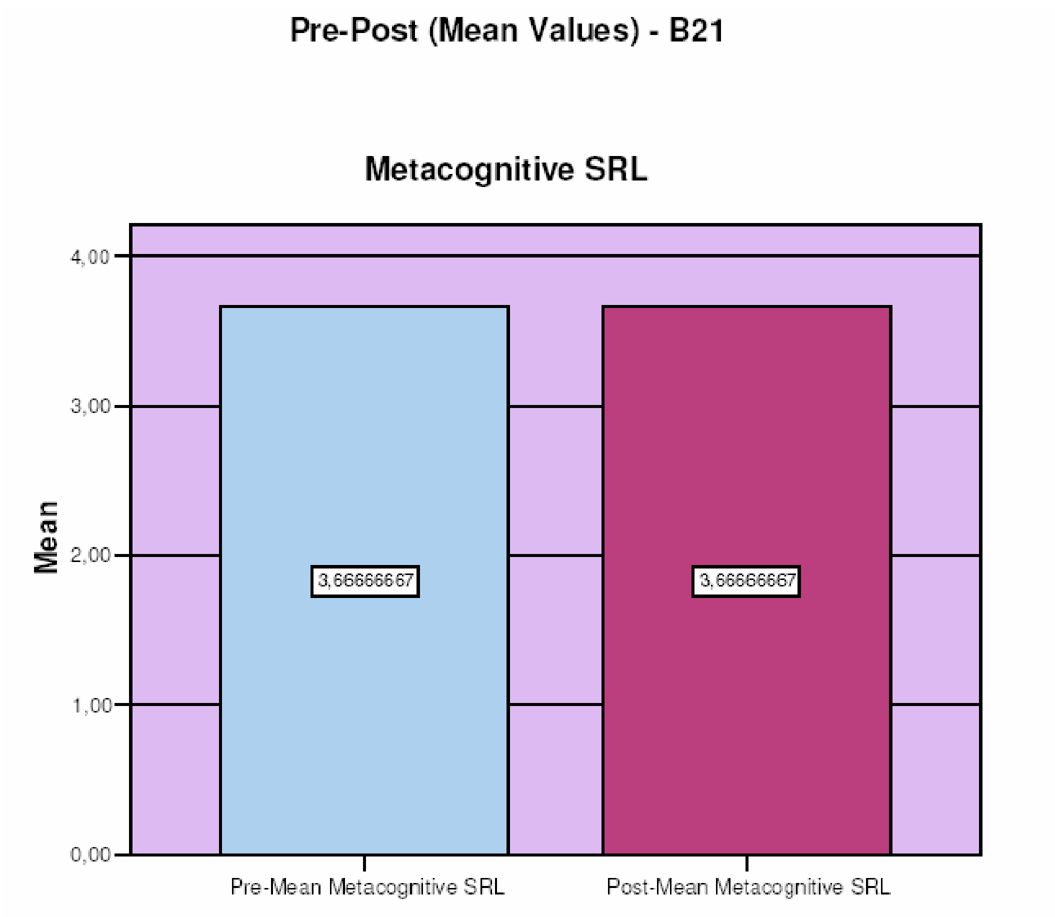
Self-Regulation
Metacognitive (self-awareness of your own learning processes – "thinking about how you think") self-regulation reflects how aware you are about what you are doing when you study and learn. Fundamental aspects involve self-planning, self-monitoring, and self-evaluating. A high score indicates that you try to plan your work and check to see if you understand the course material.

Graphs

Pre-Post (Mean Values) - B21




Pre-Post (Mean Values) - B21
Goal Orientation
Mean
5,00
4,00
3,00
2,00
1,00
0,00
4,33
4,33
5,00
5,00
1,00
1,00
3,00
3,00
Pre-Mean Mastery Approach
Post-Mean Mastery Approach
Pre-Mean Mastery Avoidance
Post-Mean Mastery Avoidance
Pre-Mean Performance Approach
Post-Mean Performance Approach
Pre-Mean Performance Avoidance
Post-Mean Performance Avoidance


Pre-Post (Mean Values) - B21
Metacognitive SRL
Mean
4,00
3,00
2,00
1,00
0,00
3,66666667
3,66666667
Pre-Mean Metacognitive SRL
Post-Mean Metacognitive SRL

12.1.3 Semi-structured Interview (paper-based version)

Introduction

Thanks for participating! The questions are focused on learning motivation and other aspects from the questionnaire. Please answer the questions informally and do not be concerned about whether your responses are "right" - I am just interested in having a conversation with you on these topics.

1. Do you enjoy learning? Explain.

   - what do you enjoy about learning?

2. Do you see yourself as a successful student? Explain.

   - define success

3. When do you feel the most motivated to learn?

4. Why did you choose your program of study?

   - (has it met your expectations?)

   - (are you happy with your choice?)

5. How important are your studies to success in your chosen career?

6. What is your attitude toward time?

   - (are you focused on the future or the present?)

7. Is this reflected in how you study? Explain.

8. Do you set goals when studying?

   - what kind of goals?

[A few more questions]

9. How do you determine if you performed well on your assignment or test?

   - if you reflect on your performance what aspects do you consider?

10. What do you do to manage your time?

11. Does the semi-virtual format influence your time-management?

    - is your time-management different in traditional onsite formats?

12. When you study do you think about using the things you learn in your chosen career? Explain.
13. Is it helpful to establish this connection between studies and career? Explain.
14. How far ahead in the future do you set goals?

[The last two questions…]

15. Think back to a recent course that you were very motivated about: why was it motivating? Explain (what was … [concrete description of the "why"]).
16. Think back to a recent course that you were not motivated about: what would increase your motivation if you had to do it again?

Closing

Great!! Thanks for participating! This is the end of the interview. I appreciate your participation.... I will sign off now.. Bye!

12.1.4 Example Interview

In addition to the interview protocol, it is helpful to have an example of a complete interview transcript. The interview provided in the example was conducted with one of the female students (A45) who received future oriented (full) instruction. For complete demographic details, please refer to Table 8.6.

Interview-A45

Do you enjoy learning?

Well, not every time, but it is nice to use the head sometimes.

When you do enjoy it what do you enjoy the most?

Well I enjoy it most when I like the course personally because I have the feeling that I get something from learning for myself. Courses like psychology or marketing I enjoyed really much while courses like math or personal were a bit boring (because I am not so good in it).

Do you see yourself as a successful student?

Well I don't know - I was never a student with excellent marks (because I enjoyed my free time as well and my sports). But I like to learn new things and get a better view on different things.

Success is defined by marks in this context? Or do you consider other aspects as well?

Well I think it is defined by marks until you work. Before that it is definitely defined by marks. That is also why I was always jealous about friends who went to other schools like Montessori or so.

When do you feel the most motivated to learn? what is necessary for you?

Hmm, I guess when I know I need for my future - then I am the most motivated. It is not "lost time" in those cases. But I also appreciate it when a teacher tells me knew things about a course/topic and when they point out for what I could use it

Why did you choose your program of study?

Do you mean Sport Management?

Yes.

Well, I did Track and field my whole life. After a back injury I was pretty sure that I want to work in track & field. I started with internships and volunteering and was certain that I will make it after a year studying sport science (my marks weren't good enough to be accepted in Bayreuth) I dropped it because it was too far away from what I wanted to study. Then I found this program - I looked at the content and knew it would be what I always wanted.

Has the program met your expectations?

So far the program met my expectations.

How important are your studies to success in your chosen career?

Well, I think everybody needs a proper basis, but also learning by doing - I think the right mix between both is the key. So I think there are some courses i would never have chosen but which are really important to get to know. As we said in the course we had - it is a path and along the path are things that are easy and nice and others that don't are nice. But one has to do all of this to be good.

What is your attitude toward time?

Hm, I know that I have to improve my perspective of time - I am always late with things. I can work better when I am under pressure (but its' not good for my health...).

Do you see yourself as focused on the future or on the present?

Do you mean if I am as focused now as i will be in the future?

Not really...more like what do you focus on the most....future or present?

Oh ok. Well I think on the future.

Do you have a reason for why you think so?

Although I change sometimes things in my future goals (but I guess this is because I am a Gemini and they always have two things they want to do). Well I know what I want to do in the future - the present is just my preparations to get once there. I at least think so.

Is your attitude toward time reflected in how you study?

Hmm I don’t know. I always want to start learning early and know that I have to do things right away, but then things are coming so fast and usually it is too late again...

Do you set goals when you study?

Well I set goals like next week I'll do that and that or today I will finish this and that. Or I want to learn it really good because I know that it is something really helpful for the future.

Just a few more questions... thanks for your very honest reflection to my questions :)

How do you determine if you performed well on your assignment or test?
I guess I just feel when it is good or not. I know that I am not this good in tests; because I have the feeling it is the worst way to learn things. I love doing homework and presentations because I have the feeling what I write about will be in my mind forever.

What do you do to manage your time?
Well to manage my time… I have my cell phone with a calendar (the best they've ever invented) and then I use tons of papers to write things down. Sometimes I make a list in the evening what I have to do the next day or I sit down in the morning and think about what I have to do the week, but I know that I have to improve that - i.e. use just one calendar or so. Sometimes I don't know which is the most recent info on things.

Does the semi-virtual course format influence your time-management?
Yes I think so - I am working a lot and with the semi virtual format I can handle things better.

What do you mean?
I often learn in the morning or in the evening - I couldn't do both if I would have to attend university regularly, but still think I learn more right now than back in the days when I went to university. I also learn to set times (for team meetings etc) and stick to a time frame (i.e. when our group has meeting and we just have 1 hour to discuss all the courses and do our group work).

When you study do you think about using the concepts you learn in your chosen career?
What do you mean by concepts?

The things that you learn in a course - concepts, theories, models, techniques, etc...
Oh of course - everything can be useful and if I was successful with a concept in school why shouldn't it work out for the career. I just think that it takes some time to adjust. Sometimes the principles or so are so obvious, but you need a certain time to adjust.

Is it helpful to establish this connection between studies and career?
I think it is worth trying it. It may not be helpful every time, but sometimes I think it can be.

Can you expand on that?
Ok, I think I learn in the courses a lot what I will never find anywhere else - so why not trying to figure out certain theories and apply it to normal life.

How far ahead in the future do you set goals?
I know what I will do until about 40. I don't know if my dream will come true before or after I will be 40, but I wouldn't plan more than 20 years. I think it is also different for men and women. I know for me that there will be a time I have to decide what to do first - family or career - so that is my factor x and I don't

know how I would decide.

Regarding plan x - in some ways this means that you need to plan more and have some flexibility or have even multiple plans (A,B,C etc.). It can be a challenge...

Yeah, but life would be boring without those challenges. I think I fairly know about my main goal - the way towards it may implement plan a, b or c.

That's great!
These are the last two questions.

Think back to a recent course that you were very motivated about: why was it motivating?

Ok marketing: I think it is very interesting, you can do so much with marketing tools. Although it is a hard and complex course I knew that I could use it for my business and that made it much easier to study for it. I found theories I already have seen at my work or on television, so I tried to learn from the course as good as possible. This is also a course I would love to read more about in my free time.

Think back to a recent course that you were not motivated about: what would increase your motivation if you had to do it again?

Ok, definitely math – hmm, I think if somebody would give me more time to understand it (back in school as well) it would be better for me and my motivation. With math is the problem that there is no why - it is just because it is that way. I am always asking about things, and in math it is the worst you can do. So maybe if somebody would accept that I have to ask and still would try to explain it to me slowly and continuously, I would be more motivated. And another thing is that I always need examples from life. I never knew that in a curve discussion a zero point shows the turn from negative to positive values.

Thanks for participating! It was a dynamic and flowing interview and once again I thank you for your honest reflection. It is greatly appreciated.

You're welcome.

12.1.5 Detailed Coding Overview (with anchor examples)

The following table provides a detailed overview of the coding system used in this study. The code hierarchy adheres to the hypothesised model used in the original design and selection of dependent variables for inclusion in the study (see Figure 9.2). Even though different methods for integrating quantitative and qualitative methods were used in this current study than those put forward by Mayring (1999), he does make an important assertion regarding the necessity for a disciplined and systematic approach when using qualitative designs. One tool that Mayring suggests can contribute to the validity and reliability of qualitative data analysis is the creation of a coding index that provides the code hierarchy, code name, code definition, as well as the quintessential example response on which that codes is based (his term is anchor example). Hopefully this table will be of benefit for both readers and examiners of this study.

. Detailed coding overview with anchor examples

Code Hierarchy	Code	Code Definition	Anchor Example
Time Perspective (TP)	Future	Theory = integrating the future into the present through motivational goal-setting. Interview = self-defined.	“I am focused on the future more than on the present.” A46
	Present	Theory = non-integration of future into the present. Interview = self-defined.	“I live in the present; I don't waste time being afraid of the future.” B24
TP-Operation	Extension-long	Large amount of time considered when making plans or setting goals.	“I have a dream and a vision of my job in the future after studying. And my study targets are the exams, so you can say goals in a time of 6 months.” A46
	Extension-short	Not so large amount of time considered when making plans or setting goals.	“1/2 year maximum.” B24
	Goals-proximal	Goals that can be achieved in the immediate or near future.	‘Yes, I try to structure my courses, I have goals for every day, like “reading chapters 13-19” or "doing all the exercises of a certain unit".’ B24
	Goals-distal	Goals that can be achieved in the distant future.	“I know what I will do until about 40. I don’t know if my dream will come true before or after I will be 40, but I wouldn't plan more than 20 years.” A45

Detailed Coding Overview continued

Code Hierarchy	Code	Code Definition	Anchor Example
	Goals-system	Development of a system of proximal sub-goals that lead toward the achievement of relevant distal goals.	“I set main goals and sub goals. The main goals are long-term, eg I want to finish my studies in 3 semesters. Or I want to earn 36 credit points in this semester. The sub goals are focused on the running term, eg I want to be better than average in English II or I don’t want to pass any course worse than 1,9 (A-).” A37
	Goals-non-system	No evidence of a systematic approach. Focus is “either/or” in terms of proximal or distal goals.	“Yes, I am a master of time management. I set unachievable goals that I don’t reach, but interestingly I then achieve higher goals than if I had set lower goals. Because I don’t reach those either. That is my trick and it works quite well. I am not upset if i don’t reach the goals, of course.” B33
Instrumentality Program-Selection	Content	Selection of degree program based on issues of content.	“Then I found this program - I looked at the content and knew it would be what I always wanted.” A45
	Flexibility	Selection of degree program based on issues of flexibility (location, time, etc.).	“Because I can travel a lot and use my spare time better than people driving every day 2 hours to Munich. I do not like restrictions from the outside.” A22
	Service	Selection of degree program based on opportunities to benefit society.	“My father is in business and has high leading roles. My whole life I have seen business. Also in this field of study one can work everywhere and can do something for the general public.” A37
	Tradition	Selection of degree program based on issues of tradition or personal history.	“My father is in business and has high leading roles. My whole life I have seen business. Also in this field of study one can work everywhere and can do something for the general public.” A37

Detailed Coding Overview continued

Code Hierarchy	Code	Code Definition	Anchor Example
Instrumentality Expectations	Unsatisfied	Program selection has not met student expectations.	"Unfortunately, up to now, only a bit." B46
	Satisfied	Program selection has met and satisfied student expectations.	"No, it even exceeded my expectations, it is super interesting, especially topics in organisational psychology." B33
Instrumentality	Program Relevance	Program is relevant to the chosen career of the student.	"Very important. A finished degree offers me more chances to do Seminars as an independent trainer." A5
	Program Non-relevance	Program is not relevant to the chosen career of the student.	"Perhaps, but probably I have to learn something different to find a job." B24
Instrumentality Course Relevance	Benefit	Student recognizes the value and benefit of making connections between studies and career.	"Helpful, yes sure, because I am a person, who needs always a sense in my doings. And without any connection I see no sense." A46
	Utility	Student views what is learned in studies as useful for future career activities.	"Otherwise I wouldn't have chosen this program of study if I can't need it later on. if I notice that I cannot use the knowledge of the study for the job I want to have, there would be no sense to spend the time." B46

Detailed Coding Overview continued

Code Hierarchy	Code	Code Definition	Anchor Example
Motivation Enjoyment	Limited	Enjoyment of learning is expressed with limitations or restrictions.	“In my experience you can't avoid. But it's not one of my favourite hobbies.” B45
	Unlimited	Enjoyment of learning is expressed fully without referring to limitations or restrictions.	“Yes, I enjoy it very much.” B33
Motivation Enjoyment-Reason	Familiarity	Enjoyment of learning results from interaction with familiar subjects or topics.	“When I'm really interested in the stuff, or when it's already familiar to me.” B45
	Freedom	Enjoyment of learning results from a high degree of student control.	“Yes, I think so. I enjoy learning more when there is no big pressure.” B45
	Opportunist	Enjoyment of learning results from the perception that learning will have direct benefit to student (status, employment, etc.).	“Knowledge means better chances in the future, respect. Not everybody has the opportunity to learn or the ability.” A37
	Interest	Enjoyment of learning results from personal interest and value of subjects or topics studied.	“To get new knowledge about things that interest me.” A5
Motivation-Ideal	Delivery	Aspects increasing student motivation in general relating to presentation and delivery of instruction and learning material.	“When the courses are well presented (with examples and tests).” B24

Detailed Coding Overview continued

Code Hierarchy	Code	Code Definition	Anchor Example
	Failure	Aspects increasing student motivation in general relating to not succeeding or failing at a learning activity.	"I think falling through the exam would be a STRONG motivation. No, seriously. I think to recognise that it's unavoidable does it as well." B45
	Success	Aspects increasing student motivation in general relating to successful completion of learning activities.	"When I get good marks and when I can imagine that the subject I work on can help me in my job." B46
	Knowledge	Aspects increasing student motivation in general relating to new knowledge or content of learning.	"I enjoy learning new things to expand my horizon." A46
	Challenge	Aspects increasing student motivation in general relating to challenge and level of difficulty.	"To get new aspects for my company, to prove myself that I can still do it, to get new inputs." B48
	Value	Aspects increasing student motivation in general relating to perceived value of the learning activity.	"When I see a positive target or result in the future for myself or my interests." A46
Motivation-Actual	Control	Aspects increasing student motivation in a specific course relating to learning activities.	"Yes, because then I can write about topics that interest me personally and that touch me, like the conflict in the middle east or politics in Germany or the changes in business Germany." A37
	Interest2	Aspects increasing student motivation in a specific course relating to personal interest in the subject/topic.	"I like Mathematics, I like working with numbers. it is Motivating because I like this subject." B24

Detailed Coding Overview continued

Code Hierarchy	Code	Code Definition	Anchor Example
	Ability	Aspects increasing student motivation in a specific course relating to student ability (skills, success, familiarity, ect.).	“For example Mathematics, I looked forward to this course, because I'm very good in Mathematics.” B24
	Delivery2	Aspects increasing student motivation in a specific course relating to the presentation and delivery of instruction and learning materials.	“The person during the onsite course how he/she moderated the day/hours and the content.” B48
	Humour	Aspects increasing student motivation in a specific course relating to delivery in terms of humour.	“Again it is a feeling of mine in the first moment after the course or during the course I am able to remember back until today. Funny: people were Ok, jokes, good atmosphere, the surroundings were good. Interesting: the main idea of the course was thing, which interested me a since a long time before the course.” A46
	Relevance	Aspects increasing student motivation in a specific course relating to the relevance of subject/topic for future goals.	“Ok marketing: I think it is very interesting, you can do so much with marketing tools. Although it is a hard and complex course I knew that I could use it for my business and that made it much easier to study for it. I found theories I already have seen at my work or on television, so I tried to learn from the course as good as possible. This is also a course I would love to read more about in my free time.” A45
Goal Orientation	Mastery-Approach	Purpose of learning is development of competence or task mastery (self-referential)	“I guess I just feel when it is good or not. I know that I am not this good in tests; because I have the feeling it is the worst way to learn things. I love doing homework and presentations because I have the feeling what I write about will be in my mind forever.” A45

Detailed Coding Overview continued

Code Hierarchy	Code	Code Definition	Anchor Example
	Mastery-Avoidance	Purpose of learning is to avoid incompetence or task failure (self-referential).	None found
	Performance-Approach	Purpose of learning is to develop normative competence or task ability (in terms of others).	“According to the mark, so connected to my subgoal. I want to be better than average.” A37
	Performance-Avoidance	Purpose of learning is to avoid normative incompetence or task failure.	“Not to fail. Might be a bit simple, but it's not easy to define it in general.” B45
Goal Orientation Mastery-Approach	Self-referent	Reasons for engaging in learning activities and evaluation of success stated in terms of the “self”.	“With my feelings.” A46
Goal Orientation Performance-Approach	Other-referent	Reasons for engaging in learning activities and evaluation of success stated in terms of “others”.	“Out of the view of others, at least to be better than average.” A37
SRL Time Management	Operation Strategies	Strategies for time-management that are used and employed.	“Planning and organizing. My life would not run without my outlook. I see a project and plan it accordingly.” A37
Blended Learning Impact	Positive	Learning in a blended format offers advantages over traditional face-to-face formats.	“Yes, semi virtual has the advantage that I can determine what, when and how much I can work. Of course at the end of the term the work has to be completed, but I am more flexible than at a normal university.” A37

Detailed Coding Overview continued

Code Hierarchy	Code	Code Definition	Anchor Example
	Self-evaluation	Students express the ability or facility to self-evaluate their own learning processes.	“When I’ve finished an assignment, the first internal feeling for me is to say, if it was good or not so good.” A46

12.2 APPENDIX B – Future Oriented Instruction (course-level)

The following documents are some of the instructional materials used for the supplemental future oriented instruction that occurred during the PDSM course for the full instructional group. As described in section 8.3.2, the future oriented instruction combined online pre-work and coaching sessions during the seminar and afterwards. The following documents are included:

- Coaching Review Document
- Worksheet for System of Proximal Sub-Goals
- Worksheet for Future and Proximal Goal Connection

12.2.1 Coaching Review Document (for 2nd and 3rd sessions)

PESM – Coaching Session (English 2)

UNIVERSITY
of Applied Management

Future Oriented Learning - Review

Types of Goals What are two types of goals that can help you in your studies (related to time)?	1. … 2.
Successful Goal-setting What are the qualities of a "well-set" goal?	
Relevance to the Future A course you are taking may or may not be relevant (meaningful) to you. What are 3 kinds of relevance it might have? (remember the tiger in a circus…)	1. … 2. 3. ..
Present-Future Connection In your opinion, why is it important to connect your present activities as a student to future events or aspirations (goals)?	List at least three reasons…

Food for thought…

Take time to consider a few of your personal goals and aspirations (things you want to achieve) for the future.

Can you make a connection to English language skills? What role (if any) will your competency in English play in achieving your future goals?

Do you know anyone who is currently working in a career that you are considering? Are they "competent" in English? How do they view the importance of English for being successful at work?

Can your attitude toward the future influence your success as a student today?

12.2.2 Worksheet for System of Proximal Sub-Goals

UNIVERSITY of Applied Management Sciences

Proximal Sub-Goals

Relevant Future-Goal (brief):

Course Name:
Perception of Relevance:
Implementation (Target-Goal):

Time	Task	Target-Goal	Method & Approach	Help-Network (who?)

12.2.3 Worksheet for Future & Proximal Goal Connection

Future & Proximal Goal Connection

UNIVERSITY of Applied Management Sciences

Goal Dependency

Often, what a person wants to achieve in the future depends upon certain requirements or qualifications that have to be fulfilled before achievement is possible. A good example is a career as a lawyer – before you can be a lawyer, you have to pass a practical exam (in the US it is the "Bar" Exam), and before you can take the exam you need to complete a law degree. One requirement leads to another, making entrance into certain fields very complex and time consuming.

Formal qualifications and requirements are often clearly stated regulated by government or agencies, but not all informal requirements are easy to identify, and sometimes the requirements are self-determined by an individual (e.g. a personal statement outlining "before I do that…I need to do this").

Taking time to identify the connection and relationship between your studies and future goals can have a great impact on your success as a student. The stronger the connection between your current program of study and your future goals, the higher the level of achievement will be in your studies.

It is a good exercise to clearly articulate your goals (such as writing them down or telling them to a close friend), rather than just letting them be a purely "mental" exercise. The following worksheet is designed to assist you in this process.

Using some of your desired achievements for the future (Zukunftsvision Arbeitsblatt), complete this form so that you can identify how "dependent" (Abhängig) your future goal is on your current program of study. Be sure to explain how or why it is dependent:

- Externally determined or self-determined
- Formal or informal requirement/qualification
- Other reasons for dependency

If you have questions, please contact your instructor.

Future & Proximal Goal Connection

UNIVERSITY of Applied Management Sciences

What you want to achieve… (Was du erreichen willst…)	Connection to your degree (Abhangigkeit)			How / Why is it important? Explain. (erklären)
	very dependent 1	dependent 2	not dependent 3	

12.3 APPENDIX C – Future Oriented Education (program-level)

This section is an amended version of a larger work (Schmidt & Werner, 2006) that was presented in September, 2006 at the *European Conference on E-Learning*, held in Winchester, England. Concepts and theories on future orientation and instrumentality, especially their potential impact on student motivational and achievement outcomes, that have already been presented in the main body of this dissertation are expanded and applied to instruction in higher education in a multi-level model. This model presents future oriented methods at pre-program, during program, and post-program interactions between students and institutional representatives (not just course instructors, but also academic coaches, program advisors, and student counsellors to name a few). This section was presented at the conference as a work in progress, since many aspects and areas undergo a constant process of revision and change as they are applied in reality. A brief overview of the current model is offered in the following sections.

12.3.1 Future oriented design methods

Efforts need to be increased for developing methods of online instruction that tap into and encourage the future orientation of students, and for providing meaningful connections to the content and possible future outcomes. Figure 12.1 provides a detailed overview of the *UAM Milestones Educational Model* offering a framework for concrete operational examples of how online instruction (teaching techniques, course, and program) benefits from a future oriented design.

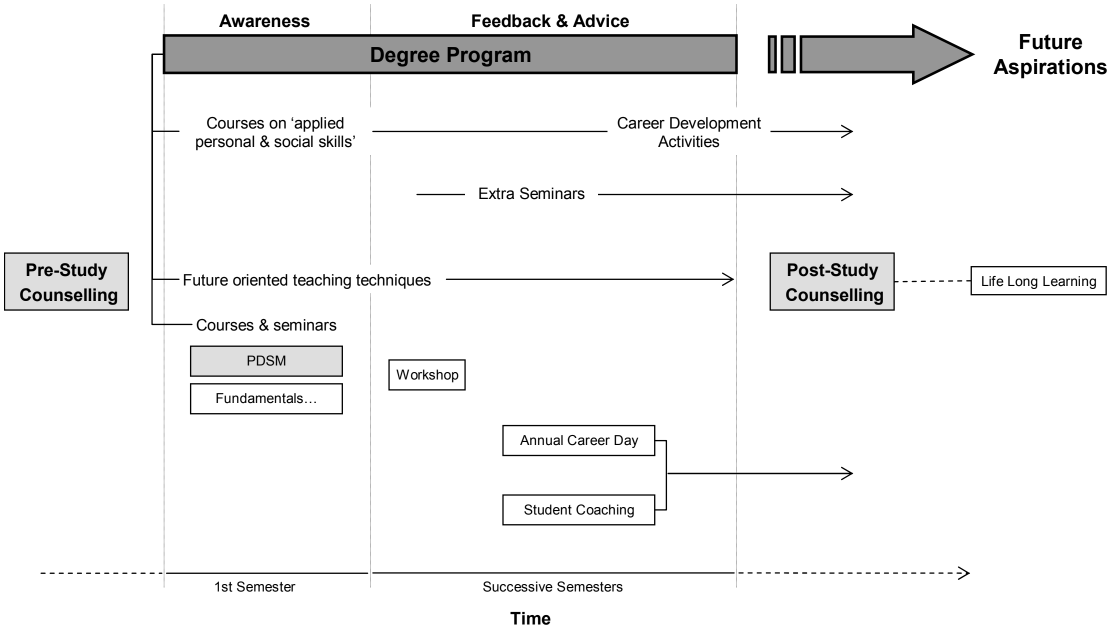


Figure 12.1. UAM Milestones Educational Model

This model outlines the forms of student support (raising awareness; providing feedback & advice) that are possible within typical university degree programs on a spectrum of time.

The time-line presented in this model illustrates opportunities for consultation with students beginning with pre-study counselling that continues within a study program through academic coaching, and extends into the future through post-study counselling (conceivably it could involve aspects of life long learning – effective alumni programs) to help students achieve their future aspirations. Movement through the model can be described as follows:

Pre-Study Counselling:

- Self-assessment opportunities to help identify future goals (academic, career, personal)
- Planning for effective achievement of those goals

Raising Awareness (primarily during the first semester):

- Courses on 'applied personal & social skills' (wide range of activities and interactions with students relating to topics such as effective presenting, negotiation, communication, etc.)
- Future oriented teaching techniques (see below)
- Courses & Seminars (PDSM – see section 3.1; and other introductory course covering fundamental knowledge of the chosen degree program) addressing questions such as:
    - what is the program of study (e.g. Sport Management)?
    - what are the career prospects?
    - what do prospective employers require?
    - how to organise course program and schedule?
    - what other endeavours can assist in to developing the required profile?

Feedback & Advice (during successive semesters):

- Activities to improve student employability (e.g. extra seminars, classes, or workshops that extend the offerings of applied personal and social skills)
- Annual activities (e.g. Career Days - offering structured programming including personality assessment, practical exercises, feedback, and suggestions for improvement)

- Academic/Career Coaching – individual or group sessions (link these sessions to other activities, such as career days for returning students and alumni)
- Activities to help students access the job market:
    1) Job application training
    2) Interview training
    3) Assessment Centre training

Post-Study Counselling:

- Consultation and advice on how to continue personal development and growth in meaningful ways that help students identify new goals, move toward professional activity or continued study, connect to a relevant network of experts in the chosen field, and to maintain contact with the institution to share in the exchange of new expertise and knowledge.

12.3.2 Future Oriented Teaching Techniques

Many of the measures listed and described above in the milestones model rely upon general teaching techniques that encourage and foster student motivation through the development of distal and proximal goal systems that emphasize task and course instrumentality, impacting an overall program. Some helpful elements to consider are listed below with concrete examples of possible activities. They are by no means comprehensive, and can easily be combined or added to other methods by using the full scope of instructional tools and technologies that are available.

a) Encourage high levels of perceived relevance (course and task)

<u>Course Level</u>

- Present course material embedded within a framework of the overall field. Provide a meaningful introduction that outlines the benefits and uses of such knowledge for future endeavours (consider using various media – video, audio, web-pages, internet, etc.)
- Invite experts from the field to join a discussion forum (e.g. host a chat session on FAQ's) or to participate in the evaluation of student projects or presentations (e.g. panel of judges).
- Assist the students in recognizing peer expertise and relevant experience with the chosen topic (creation of student profiles, reflections on past experiences and/or prior knowledge, etc.).
- …

<u>Task Level</u>

- Whenever possible assign tasks that are constructive in nature, making connections to real concrete examples (e.g. case studies, role plays, observations, simulations, etc.) solidifying the connection between theory and practice.
- Provide opportunities for students to develop their own autonomy, control and responsibility for learning (task variety, topic choice, format of end product).
- Open-ended projects and/or portfolios (multiple assignments of which only the best are calculated in the final grade)

- Meaningful task sequencing (linking of tasks to create a useful portfolio or resource for continued use or reference).

- …

b) Encourage effective self-regulation of learning processes

Forethought Phase (planning)

- A wide array of management techniques exist that can assist students in goal-setting, idea generation, task scheduling, etc. Online environments have an advantage of offering instant access to these methods and techniques (make use of links, documents for further self-study, open source material, etc.). Figure 4 is an example of a Gantt Scheduling Chart – one of many planning tools that could be presented to students as a resource (adapted from Dessler 2005, p. 90).

Figure 12.2. Gantt Scheduling Chart (adapted from Dessler 2005, p. 90)

Performance Phase (self-observation)

- Include assignments that are non-graded but peer-reviewed – this often encourages students to be aware of the quality, without having the pressure of always satisfying instructor criteria for top marks. Caution is warranted with this activity – practice and guidance is necessary so that students are constructive, positive and working together to create successful learning experiences.

- Use the internet to help locate self-study exercises and programs that could be added to current instructional activities. Students who are interested can improve at their own pace and continue to explore the subject area in a meaningful way.
- …

Reflection Phase (self-evaluation)

- Provide opportunities for reflection – online, onsite; synchronous, asynchronous – many vehicles are available, from journals, log-books, short "lessons-learned" reflections, discussions, forums, chat-rooms, blogs, etc.
- Guidance in reflection also is helpful – model this activity as a reflective practitioner (e.g. student newsletter, ongoing forum for discussion, informal opportunities outside of the course, etc.)
- …

12.3.3 Future Considerations

As research in educational psychology continues to identify factors that positively influence student motivation to learn, and the subsequent steps that are taken to acquire new knowledge, parallel efforts in research are necessary in designing possible instructional interventions incorporating these factors in concrete operations within a learning environment. Future oriented instruction is one possibility out of many to consider, but it has great potential to support and improve student learning and achievement within online learning environments.

Management education cannot stop at the end of formal training or educational programs. It must be integrated into the internal self-learning processes of the individual resulting in personal development over the life span. Therefore, the role of educators using web-based technologies is to continually seek to provide effective means of encouraging and fostering this learning competency within the design of online instructional environments.

Tabellarischer Lebenslauf

Persönliche Daten

Name	Schmidt
Vorname	Joel, Timothy
Geboren am	17.08.1971
Geburtsort	St. Louis, USA
Staatsangehörigkeit	Kanadisch; Amerikanisch

Studium

1989-1992	Bachelorstudium in Musik u. Englische Literatur Augustana University College, Alberta, Kanada Abschluss: BA
1995-1996	Auslandsstudium (Deutschland) in Deutsche Sprache und Musikwissenschaft – Universität Osnabrück (keine Abschluss)
1997-1999	Lehramtstudium in Musik u. Englische Literatur University of British Columbia, Vancouver, Kanada Abschluss: BEd
2002-2004	Magisterstudium in Psychologie u. Pädagogik LMU, München – Psychology of Excellence Abschluss: Magister (MA)
2004-2007	Promotionsstudium in Psychologie u. Pädagogik LMU, München Abschluss: Dr. phil.

Beruflicher Werdegang

1992-1995	ECO-A Cappella Ensemble (Musikfirma), in Alberta Manager/Musiker/Co-Gründer
1993-1995	Landschaftsbau Firma, in Alberta Manager (Operation u. Qualitätskontrolle)
1999-2002	Maple Ridge Secondary School, in Vancouver Gymnasiums-Lehrer (Musik u. Englische Literatur)
2002-2004	Fremdsprachenschule Landshut Lehrer für Business Englisch (Selbständig)
Seit 2004	Fachhochschule für angewandtes Management (Erding) Lehrkraft für besondere Aufgaben
Seit 2006	Fachhochschule für angewandtes Management (Erding) Leiter Internationale Beziehungen