Learning diary as a tool for metacognitive strategies development

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Abstract

We intend to research if the useless of learning diary are important for development of metacognitive strategies and if these are influenced by the level of motivation for learning and by the evaluation process. The sample of our study comprised 92 students from the first year at Faculty of Science of Education and it was developed during 2008-2011 academic years. The students filled in learning diaries during their first year of study (2008-2009) and they have participated at an investigation based on questionnaires (Achievement Motivation Inventory and Metacognitive questionnaire). The results provide a better understanding upon the students’ learning needs and upon the necessity of working on the development of the metacognitive competencies during the university initial training.

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1. Introduction

The learning diary has great influences of the development of metacognitive strategies during the life, in generally, and in university didactical space, especially. The encouragement of the capacity to learn about learning is very important in the academic background because it represents the level where the future active, implicated and free citizens are trained in the learning process. Furthermore, it is very necessary in the training of the future teachers, seeing that they will be able to touch a level of excellence in teaching through the use of metacognitive strategies in the self-activity of constancy learning, in the activity of teaching of these reflexive strategies, but also in the educational research that they can develop. The aims of the university teaching system is sketched around the building-up of the competences towards

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the independence and responsibility development, the competences of learning to learn, the professional and vocational skills, but also transversal skills that concern the capacity to be able to transfer what they learn and reflect upon the learnt things. In the recommendation of the European Parliament and Council are presented the key competences which should be formed both in the initial and continuing formation to ensure the constant form of Education. Key competences take into account individual needs for personal development, to develop active citizenship, social inclusion development and the responsible deployment in the working background. In the frame of reference are detailed eight key competences, including those relating the ability learn to learn. All these skills that should be formed by the current European Education, can be operationalized to the level of the general objectives of the syllabus or it can be adapted the university curriculum to form in addition, besides the cognitive acquisitions, these complex skills. These skills can be evaluated by additional evidence of assessment, because for their sizing, they require more time and different types of training. In order to pursue the acquisition of skills, the discussions at European level are focused on the teacher’s European portfolio, a method that helps teachers from this background to show both in the initial and continuous training, that they have some of these skills already formed. From this European portfolio, should not miss the learning diary which is an alternative method of assessment and learning, which involves the activation of metacognitive strategies so much needed in the future professional in the art of formation.

The learning diary presents the way that can be from and check students’ ability of reflection. The diary helps students to think about new ideas, about practical activities that they carried out, about the way of their studying. The diary stimulates the metacognitive capacity, to reflect upon own thinking capacities. There are many authors who emphasize the importance of training of the “reflexive teachers” (Schon, 1987), the “analysis of professional practice” in many areas (Castincaud, 2003) and development of the “paradigm of reflexive practitioner”(Dumitriu, 2003). The usefulness of this method is even higher in teacher training, that pass the position of being “doer teacher of technicians to a reflexive, self-supported and responsible practitioner for his action” (Altet, 1997). F. Castincaud states that the “analysis of professional practice is not intended only to “specialists” that have solutions, but a trainer who is he guarantor of the development of teachers and a defender of ethics settlements: judgments issued as hypotheses rather than categorical statements, interventions made in the professional register.” The practitioner teaching has provided the theoretical basis, but turns into an expert assisted in solving its own problems, by reflection. Types of “know” are enriched with “know how to analyze” “savoir-analyzer” (Altet, 1994, 1996). Also, P. Perrenoud notes that “reflexive practice must become a strong and sustainable disposal of professionalization” (2003). I. Cerghit brings out into relief the value of communication methods “with-himself”. He defines the personal reflection as a mode of action and mental capacity, closely related to intelligence and the power of anticipation, the possibilities of generalization and the creation, “the human essence”(Cerghit, 1997) as an “counter-poison to the slight teaching” (Cerghit, 1997). S. Brown recounts the formative aspects of learning diaries through the fact that they express the learning experiences, reflect the progress and problems from learning, integrate the theory and the practice and different aspects of a certain topic and gives expression to feelings and attitudes towards their own learning (2004, p.186). After J. Heywood, the learning diaries may include the following aspects: an autobiography of education; a report on at least three experiences in university teaching and learning; a spatial diagram upon the university things or spaces; a description of school practice; the analysis of some significant events; a sociogram of the class; an exercise of a personal design and the reflection upon some terms proper to the certain domain (Heywood, J., 2000, p. 339-340). In university is possible to use some kind of learning diaries, but not all types of diaries are recommended to be evaluated, only those who help student in the complex learning of the information. These diaries evaluated by teacher area: the metacognitive diary, the diary synthesis, the double diary, the learning diary, dialectical incidents and the diary in three parts (Temple, 2011, p. 23). All these types of journals
are ways we could develop for students, the metacognitive strategies and opportunities to achieve academic and personal success. More than that, the students involved in teacher education studies need to be responsible for their own learning process, both for their own academic achievement and for their training as teachers (they will provide educational settings for metacognitive skills development).

In our study we intend to find out what is the students’ perceptions about their own metacognitive skills and if there is any relationship between these skills, the motivation for achievement and some items from learning diary.

2. Methodology

The participants in this study were 92 sciences of education students who were following an optional course about learning how to learn, in the end of the first academically year (2008-2009) and who attending bachelor degree on July, 2011. We apply the questionnaire during the 2008 -2011 years. The mean of performance is 8.28 and the median is 8.40.

2.1. Instruments and variables

In order to find out the level of metacognitive competencies of the freshmen we applied a questionnaire which describes the level of the metacognitive competence (M. Stanciu, 2008). The concept of metacognitive competence was operational in 8 indicators: the taking notes capacity, the capacity of elaboration and presentation of an individual project, the capacity of elaboration and presentation of a group project, the capacity of elaboration and presentation of a scientific work, the capacity to follow a learning plan, the capacity to evaluate a learning plan, the capacity of management information.

The achievement motivation was assessed through Achievement Motivation Inventory of Heinz Schulter, George Thornton III & Andreas Frintrup. The inventory consists from 170 items, displayed by 17 dimensions: Persistence, Dominance, Engagement, Confidence in Success, Flexibility, Flow, Fearlessness, Internality, Compensatory Effort, Pride in Productivity, Eagerness to Learn, Preference for Difficult Tasks, Independence, Self-Control, Status Orientation, Competitiveness and Goal Setting.

The learning diary was applied for the studying activities and involved different thoughts about factors that have stimulated the learning, about ways through they learned, about the success causes and easiness of the failures during studying.

2.2. The results analysis

The research objective consist in the identification of the freshmen students perceptions upon their developmental level of their metacognitive competences and their relation with the achievement motivation, assessment and some dimensions of learning diary.

2.2.1. Hypothesis 1

It is a significant difference between performance in learning and the development of metacognitive strategies;

In order to analyze if there are significant differences we have applied the Independent Samples T-test, considering that the performance in learning can be appreciated through mean of marks and the progress of metacognitive strategies through quotas obtained from questionnaire’s points. The answers show that exist an important difference between mean resulted from the competence to frame an individual plan and performance. In this way, the students who have grades over border, declare that they have a full-blown capacity to elaborate an individual program, the statistical dates are the following: t(90)=0,016 and p=0,02. Significant differences appeared from the datas analysis for the performance in learning and the
capacity to work in group for a plan \( (t(90) = 0.466, p = 0.009) \), capacity to elaborate an individual plan \( (t(90) = 1.134, p = 0.119) \), capacity to resume a material for learning \( (t(90) = 0.001, p = 0.038 \) and internality \( (t(90) = 0.138, p = 0.018) \). This fact demonstrates that are metacognitive competences more developed to those who have good marks than to those with low performances, fact that also indicates that through the development of metacognitive competences, the grades of academic learning could be raised-up.

There are important differences for our example between the capacity to elaborate a scientific work and the received marks \( (t(90) = 0.14 p = 0.356) \), and also between the capacity to evaluate a plan and performance \( (t(90) = 0.542, p = 0.110) \).

### 2.2.2. Hypothesis 2

There is a significant difference between students who follow the faculty courses in order to obtain a diploma, metacognitive competences and the desire of studying. In order to analyze if there are significant differences we have applied the Independent Samples T-test, considering that the performance in learning can be appreciated through the mean of marks, the development of metacognitive strategies through obtained levels to questionnaire items and Dominance as factor of AMI questionnaire. The results show that there is a significant difference between mean obtained to the ability to take notes and the fact that in the learning diaries appear as a motivation, the getting of a diploma \( (t(90) = 2.342 \) and \( p = 0.047 \) \) which show clearly that the students who say that they are having courses to get a diploma consider that they have a less ability to take notes. For the rest of the metacognitive competences we did not obtain important differences. For Dominance we obtained lower averages, for those who declare that they are following a faculty for a diploma and higher averages for those who diploma is not so important. For the students whom diploma not represents an ending they do not have the tendency to be dominators in their group, they prefer not to have dominating roles as leaders \( (t(90) = 1.320 \) and \( p = 0.048 \) \). Moreover, the students who come to faculty to have a diploma say that the factor which represented an obstacle in their learning, was the fear of not having a failure. This means that the students who have an extrinsical motivation for learning, consider that they have an external cause of learning, too.

### 2.2.3. Hypothesis 3

There are significant relations among performance, metacognitive competences and the stimulating factors of studying who appear to be in the learning diaries. In order to analyze the dates, we put in application the Correlation method among students mean, quotas from the metacognitive competences and factors that influence the learning in the way they appear in the learning diaries. We obtained important correlations in performance and capacity to take notes \( (p(90) = 0.278, r < 0.001) \), between performance and capacity to create an individual plan \( (p(90) = 0.340, r < 0.001) \), performance and the elaboration of a learning plan \( (p(90) = 0.254, r < 0.001) \) and performance and capacity to structure a material in order to be learnt \( (p(90) = 0.299, r < 0.001) \).

Furthermore, there are significant positive correlations between students mean and their appearance in the learning diaries as factors of studying: the presence of a job \( (p(90) = 0.476, r < 0.001) \), the lack of time \( (p(90) = 0.264, r < 0.001) \) and family obligations \( (p(90) = 0.301, r < 0.05) \).

Interesting is the result for the significant negative correlation between considering the stress as negative factor for learning and for students that have not the ability to take notes \( (p(90) = 0.302, r < 0.001) \) and to build up and follow at the same time a learning plan \( (p(90) = 0.344, r < 0.001) \).

### 3. Discussions

This investigation shows us the perception of the students from the first year from the Faculty of Science of Education regarding their metacognitive capacities and possibilities to use in learning activities the learning diary. The students with high learning performance have also metacognitive skills. For a future research we intend to enlarge the sample, to diversify the modalities for measurement the
metacognitive skills with others instruments and to develop others items for learning diaries (Dinsmore, Alexander & Loughlin, 2008, 12).

We consider important to introduce the university didactic courses for a more detailed analyze of the role of learning to learn activities, the forms and the methods regarding an authentically learning in academic life of the student (Eekelen, Boshuizen & Vermunt, 2005, 448). There is a perceived need of using tools to deepen the students’ understanding upon their own learning process; the learning to learn framework will enable students to cope with a changeable world; the learning diary offers to the students opportunities for personal development and success experience in their academic work.

References