SUPPORT AND PROMOTION OF SELF-REGULATED LEARNING THROUGH THE EDUCATIONAL MATERIAL AT THE HELLENIC OPEN UNIVERSITY

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ABSTRACT

In distance education both the physical separation between learner and instructor, and the use of technology create an educational environment that is characterized by learning autonomy and the learner's active involvement. Because of these, self-regulated learning constitutes an inseparable concept of distance education. This study explores the support and promotion of self-regulated learning in the educational environment of the Hellenic Open University. In particular, this paper examines how the educational material, as it is described in its institutional level of function, supports specific self-regulating strategies of learning in the curriculum provided by the Hellenic Open University. For this purpose, the study is based on literature review of distance education and self-regulated learning. Thus, the cognitive strategies of elobaration and organization, the metacognitive strategies of goal-setting, self-monitoring and self-evaluation, the resourse management strategies of seeking help, seeking information and time management, as well as, the motivation are all included in the self-regulated aspects that are examined.

The results of the study indicate that the self-regulated learning is considerably supported and promoted by the printed educational material at the Hellenic Open Univesrity due to its interactive pedagogigal structure. However, it is pointed out that it is possible to maximize the support provided through the improvement of the present structures' function.

Keywords: **Self-regulated learning, distance education, Hellenic Open University, support, printed educational material.**

INTRODUCTION

In distance education both the physical separation between learner and instructor and the use of technology create an educational environment which is characterized by learning autonomy and the learner's active involvement (Moore, 1972, 1973; Wedemayer, 1977; Giagli, Giaglis & Koutsouba, 2010).

In this specific environment the learner is responsible for his learning process (Lionarakis, 2001). In order to achieve his learning goals and objectives during this process, the learner is necessary to attend, evaluate and modify not only his behaviour, but also his cognitive skills.

Learning autonomy has been indicated as a significant factor of the academic achievement in distance education (Holberg, 2002). However, despite its importance, learning autonomy as a notion does not clearly define the stages of learning process for the cognitive success (Lynch, & Dembo, 2004) and does not explain adequately the complicity of interactive communication in distance education (Garrison, & Baynton, 1987). In addition, nowadays the recent advances in Internet and Web-based Technologies, which make easier the diffusion of distance education, create new conditions and underline the development of new theoretical frameworks under the current progress (Giosos, Mavroedis, & Koutsouba, 2008) so as the learning approach and the learners' academic success to be effectively achieved.

According to researchers, self-regulated learning and more specifically its social cognitive perspective, provides the appropriate theoretical framework for the understanding and analysis of the mechanism of the learning procedure in distance education in terms of learner's autonomy (Lynch, & Dembo, 2004; Avezedo, 2005; Artino, 2007). Self-regulated Learning (SRL) refers to the learner's conscious intervention by controlling and regulating thoughts, emotions, strategies, behaviors and beliefs in the learning process in order to attain the learning goals (Zimmerman, & Schunk, 1989). Due to the social cognitive perspective based on Bandura's social cognitive theory, this procedure demands the reciprocal interaction among personal, behavioral and environmental factors (Zimmerman, 1998, 2000).

Based on this perspective, Zimmerman supports the idea that learners can be described as self-regulated in relation to the degree that they are metacognotively, motivationally and behaviourally active participants in their own learning process (Zimmerman, 1989, 1990). Metacognitively, self-regulated learners plan, organize, self-instruct, self-monitor and self-evaluate at different stages of the learning process, that is during the learning process and after it, according to its outcomes. Motivationally, they perceive themselves as competent and self-efficacious regarding the goal orientations, the value of learning, and the factors that influence learning. Behaviorally, they select and create a productive work environment, and they use resources effectively for optimal learning (Zimmerman, 1990). In a specific task, self-regulated learners are aware of the suitable strategies and skills demanded for the attainment of goals they have set. Moreover, they approach their task with confidence, flexibility and resourcefulness and, at the same time, they display extraordinary effort and persistence during learning (Zimmerman, 1989, 1990).

Self-regulation is an extremely complex phenomenon. In recent years, a number of models have been developed so as the processes and the sub-processes of self-regulation to be defined. These models, regadless their different theoretical perspectives, tent to have common characteristics. Self-regulation is perseived by theorists and researchers as a cyclical process.

For instance, Zimmerman (1998, 2000) proposed a three-part cyclical model of self-regulation consisted of: a) the forethought phase including goal setting, selection of strategies and methods, assessing self-efficacy, assessing mastery or performance goal orientation and assessing interest, b) the performance or volitional control phase including focusing attention (excluding distractions and other competing attentions), self-instruction and self-monitoring of progress and c) the self-reflection phase, including self-evaluation against a standard or goal, attributions to ability or effort, self-reactions and adaptation.

Accorcding to social cognitive theory, self-regulation is context specific. The most adaptive self-regulated learners show such abilities that allow them to modify and change their actions and beliefs as a fuction of the task or context (Garcia, & Pintrich, 1994). In particular, Zimmerman and Martinez-Pons (1986) using a structured interview in a series of common learning contexts, assessed high school students regarding the use and the frequency of use of learning strategies and their correlation with academic success.

From this study, the 14 learning strategies which were discerned, characterized self-regulating activities within the body of that literature formed the basis for further research (Risemberg & Zimmerman, 1992; Zimmerman & Martinez-Pons, 1990). These strategies are the strategies of: self-evaluation, organizing and transforming, goal-setting and planning, seeking information, keeping records and monitoring, environmental structuring, self-consequences, and rehearsal and memorizing, seeking social assistance and reviewing records.

Theories and models of SRL were developed in 1980's by educational psychologies in order to describe how the successful learners learn in traditional face to face learning (Bandura, 1986; Boekaerts, Pintrich, & Zeidner, 2000).

Recently, however, researchers supported that learners in distance education in order to regulate their learning process, to quide their cognitive processing and to remain dedicated to their educational task, have to maximise the utilisation of self-regulated strategies, as well as, to motivate themselves to a greater extent due to the high degree of learner autonomy and the lack of interaction between the subjects involved (Hartley, & Bendixen, 2001; Dabbagh, & Kitsantas, 2004). Existing research findings in distance education strengthen the above conclusion relating the use of self-regulated strategies positively with the effectiveness and the academic performance of learners (Dunigan, & Curry, 2006; Yukselturk, & Bulut, 2007; Puzzifero, 2008).

At the same time, these findings point out not only the significance, but also the possibility of support and promotion of self-regulated learning in distance education through the planning of specifically interactive material, the instructor and the educational environmental structure (Lynch, & Dembo, 2004; Dabbagh, & Kitsantas, 2004, 2005; Kramaski, & Gutman, 2006; Anderton, 2006; Orhan, 2007). For instance, Whipp and Chiarelli (2004) in their descriptive case study, found that students in a Web-based course adapted the use of traditional SRL strategies in ways that were unique to the Web-based learning environment suggesting that "SRL strategy use is context dependent and that the unique features of a learning environment may influence whether or not a learner enacts SRL strategies" (p. 13).

Additionally, these outcomes support the Dabbach and Kitsantas's findings who concluded that the application of different categories of web-based pedagogical tools (WBPT) (e.g., collaborative and communication tools, content creation and delivery tools) both activated the process of SRL and supported or facilitated the enactment of different SRL strategies (e.g., goal setting, self-monitoring) in distributed courses.

Based on the above and considering that the notion of SRL has not been investigated in distance education in Greece yet, the aim of this study is to explore the support and promotion of SRL in the educational environment of the Hellenic Open University.

The study is based on the literature review of distance education and SRL and given the importance of educational material in scaffolding SRL in distance education (Dabbagh, & Kitsantas, 2004, 2005; Kramaski, & Gutman, 2006), mainly examines how the printed educational material as it is described in its institutional level of function, supports specific self-regulating learning strategies such as the strategies of goal-setting and planning, self-evaluation, self-monitoring, seeking social assistance, seeking information, time planning and management, as well as, the variable of motivation.

THE HELLENIC OPEN UNIVERSITY, THE PRINTED EDUCATIONAL MATERIAL AND SELF-REGULATED STRATEGIES OF LEARNING

Distance education in Greece was established by the Hellenic Open University (HOU), which aims to provide distance undergraduate and postgraduate education creating and using appropriate educational material. In HOU there are the four Schools: Social Sciences, Humanities, Science and Technology and Applied Arts. Each Faculty forms its curriculum leading to the acquisition of different degrees, through the combination of a numper of different modules that are the basic educational units. Four or six written assignments are necessary in order to participate in the final exams of each module and to complete it successfully. The HOU uses the asynchronous distance learning to reach its educational objectives. Students have to attend the ten-month module and show responsibility, self-discipline and organization as far as their academic obligations are concerned. The HOU in order to facilitate, direct and scaffold its students, provides specific educational material and at the same time utilizes the institutional role of Tutor, the pedagogical role of contact sessions and the effectiveness of its administrative services (HOU, 2012).

The literature review indicates the support and promotion of SRL in distance education environments through the planning and application of specific interactive material (Dabbach, & Kitsantas, 2004, 2005; Kramaski, & Gutman, 2006). The HOU printed educational material is described as a qualitative and exploratory tool, aiming at the development of knowledge and scientific and critical thinking of learners (HOU, 2012). It is the dominant factor of the University's educational process and its planning meets the main features of distance education (HOU, 2012). Therefore, if we try to define how it supports SRL, we must identify those items, which according to social cognitive perception of SRL, activates the learner metacognotively, motivationally and behaviourally during the learning process (Zimmerman, 1989).

Additionally, given the diversity of distance education environments, it is pointed out that this investigation agrees with what Lionarakis (1997) has adopted as a main principal of distance education. Accornding to this principal the importance of the medium is not in the way it is provided, but in the pedagogical way it is utilised.

SRL process is activated by enacting appropriate objectives that are an important feature of successful self-regulated learners (Zimmerman, 1990, 1994, 1998). At the HOU's printed material, this strategy is essentially supported by the introductory remarks, the target, the expected outcomes and the key-words, since these contribute fundamentally to the learners' cognitive orientation. These aspects of material define the initial structure of the basic text and help learners to realize what it is going to be studied. Additioanlly, according to social cognitive models at this forethought phase of SRL, along with the setting of goals, the strategic planning of appropriate learning activities, is also brought into action, in order for these goals to be accomplished by learners (Zimmerman, 2000; Pintrich, 2000).

Cognitive strategies are the basis of SRL (Pintrich, 1999). At the same time these strategies serving as significant variables in distance education, have been positively correlated with performance (Shin, Ingebritsen, Pleasants, Flickinger, & Brown, 1998; King, Harner, & Brow, 2000) and satisfaction of learners (Puzzifero, 2008). In the HOU material, we indicate, that these strategies are supported by the text's cognitive style and "its cutting up into pieces" presentation (Matralis, 1998). The small size of chapters, sections and subsections regarding the development of the subject matter, help the learners to study and facilitate them to use the strategies of rehearsal, elaboration and organization such as highlighting the main points, reaching the main idea, creating a network of information and relating new information with prior knowledge deriving from the reorganization of notes (Weinstein, & Mayer, 1986). Moreover, the linguistic style of material, which uses a plain, clear and explanatory language in writing, increases the text accessibility, contributes to the comprehension and codification of information and, finally, in this way, it supports the approach of in-depth learning by learners (Marton, & Säljö in Marton, & Booth, 1997).

However, the learners' actively cognitive engagement in their own learning process is not the only prerequisite for the comprehension of cognitive subject. The metacognitive processes (Pintrich, 1999; Zimmerman, 1994) that regulate and control the use of knowledge and form the appropriate background for the cognitive processes, play an important role as well (Kostaridou-Efkidi, 2008). In the HOU material, summaries, self-evaluation assignments, questions, as well as, the answers to these questions, enable learners to assess their performance through their interaction with the material (Matralis, 1998). Working on these pedagogical activities, learners prove that they have comprehended the theory included in the modules, based on their personal knowledge and experiences as well as the restructuring and acquisition of their knowledge.

Therefore, it is proved that the learners' self-control regarding the acquisition of knowledge is directed and enhanced by the above aspects. In this way the fundamental goal of SRL, which is the learners' ability to direct their own efforts to acquire knowledge and skill rather than relying on teachers, parents and other agents of instruction, is achieved (Zimmerman, 1998).

The aforementioned forms of educational material enable learners to observe and evaluate the learning strategies they used during the specific project they were carrying out and assess themselves in a conscious way, that is how they met their achievement goals and if they have reached the right outcomes (HOU, 2012). Through this mechanism, it is shown that both in the performance control and reflection phases of SRL (Zimmerman, 2000), these aspects of material support the strategies of self-monitoring and self-evaluation (Dabbach, & Kitsantas, 2005), which in distance education have been associated with the performance of learners (Anderton, 2006; Yukselturk, & Bulut, 2007) and their satisfaction (Puzzifero, 2008). However, self-regulation is not an all-or-nothing phenomenon. Self-regulation is defined as a cyclical process for monitoring progress in the learning process (Zimmerman, 1998,2000), which means that the above mechanism of observation and evaluation is not activated instantly during this process.This mechanism is constantly working, allowing learners to practise and improve their skills, and at the same time enabling them to transfer and implement the above skills into new cognitive ventures, activities, projects and educational environments (Boekaerts, 1999).

During the cognitive processing of educational material, cognitive and metacognitive strategies of SRL are completed by the volition control of learners (Schunk, & Zimmerman, 1994; Kostaridou- Efkidi, 2008), concerning strategies that learners use to manage and control their environment. This control includes a series of resource management strategies such as seeking information, seeking social assistance and time management (Zimmerman, & Martinez-Pons, 1986, 1988). Seeking information strategy used to cover fully a range of knowledge, is important for distance education (Filcher & Miller, 2000) and it is also related with learners' success in this field, as a variable of SRL (Dunigan, & Curry, 2006). In the HOU material, it is proved that this strategy is supported by the references, the guide for further study, the instructions for finding supplementary sources and the study of parallel texts (HOU, 2012).

The time management strategy is a prerequisite for the volition phase of SRL after the goal setting in forethought fhase (Kostaridou-Efklidi,2008) and it is also a factor of success in distance education as a test variable (Puziffero, 2008).

In the HOU material, the study guide combined with the information regarding the estimated 10 hours study (HOU, 2012), supports this volitional strategy of environment control (Zimmerman, & Martinez-Pons, 1986), given that the above factors direct the learners to plan a realistic study schedule adapted to their needs. In this way learners have the ability to control their actions so as to achieve the desired objective at certain time. Simultaneously, if the current plan functions inadequately or ineffectively concerning the objective's achievements, the learners have also the possibility of changing it. In this way it is proved that the study guide is an administrative pedagogical tool that supports not only the time management strategy, but also the learners' strategies of self-monitoring and self-evaluation (Dabbagh, & Kitsantas, 2005). The help seeking strategy from human/social resources is a significant self-regulatory process (Zimmerman, & Martinez-Ponz, 1986, 1988). The learners' engagement with the HOU educational material scaffold the above strategy, since it promotes the communication and collaboration between the subjects involved (Dabbagh, & Kitsantas, 2005).

The answering to the questions, the clarification of the points which are difficult to understand and the suggested way how to elaborate an issue, lead learners to seek help from the Tutor and the other learners. The forms of educational material that scaffold particularly this strategy are the activities and the self-evaluation assignments. However, this strategy at the same time enhances and promotes the social support and interaction among the subjects involved, which are significant variables both in SRL and distance education (Garisson, & Baynton 1987; Holmberg, 1995; Niemi, & Launonen, 2002; Whipp, & Chiarelli, 2004).

It should be mentioned however, that the use of cognitive and metacognitive strategies even if it is crucial for SRL, it is not sufficient without the motivational beliefs (Pintrcich, 1999), such as learners' self-efficacy beliefs, goal orientation beliefs and task value beliefs. SRL strategies are strongly related with motivation (Pintrich & DeGroot, 1990; Pintrich, 1999). It is indicated that effective self-regulation requires learners' motivation to learn (Zimmerman, 1990). Research findings for SRL in distance education ratify and broaden prior studies in traditional classrooms, which showed positive relations between motivation and self-regulated learning (Pintrcich, 1999). Specifically, in these findings, the motivational beliefs mentioned above were strongly and positively correlated with the learners' performance in distance education (King, Harner & Brow, 2000; Wang & Newlin, 2002; Lynch & Dembo, 2004; Yukselturk & Bulut, 2007), as well as, with the learners' use of cognitive and metacognitive learning strategies (Joo, Bong & Choi, 2000; Ng, 2002; Artino & Stephens, 2006).

In the HOU material it is shown that the accessibility increased by its friendly and comprehensive style and the structure characterized both by learner-centered psychological principles (APA, 1993, 1997) and adult education principles (Rogers, 1999), reinforce motivation, because they facilitate learners to involve actively in the learning process, bringing into surface their own experiences in relation with their culture. In particular, we refer to case studies, examples, exercises, activities and self-evaluation assignments. The case studies and examples are close to real life experiences and the use of realistic situations enables learners to connect the abstract thought with the empirical thought. However, the recall of knowledge and skills related to living conditions provides automatically the learners with the opportunity to assimilate the concepts and theoretical correlations effectively (Kokkos, 1998). This fact allows learners to direct and adjust their actions to new cognitive requirements and tasks. In the HOU material the self-evaluation assignments as well as the activities are the forms that provide learners with this specific possibility of transferring and adjustment.

In this way learners familiarize the study and increase their self-efficacy beliefs for their goal achievement. The self-efficacy beliefs, nevertheless, which is a key factor in self-regulated learning according to the social cognitive theory (Bandura, 1986), increases the learners' motivation (Schunk, 1991), enhances the expression of self-regulated learning (Pintrich, 1999) and in distance education is strongly correlated with performance (King, Harner, & Brow, 2000; Ng, 2002; Yukselturk, & Bulut, 2007).

Finally, it appears that the described institutional form of printed educational material in the HOU, adequately supports the development of self-regulated learning strategies investigated in this study.

This conclusion is consistent with the available research data in the literature. We believe, however, that the support and promotion of self-regulation would be more effectively achieved by learners with the provision of a specially designed tool in printed or electronic form adapted to the needs of each module.

The aim of this tool would be;

- **to highlight the key factors of SRL**
- **to illustrate the significance of systematic use of the tool**
- **to guide learners how to keep records regarding the learning strategies they use and**
- **to indicate learners the way to register descriptive and explanatory notes.**

The systematic record keeping, recalls the plan of action, attains the organization and the implementation of actions, allows the control, activates the critical reflection, contributes to the changes of strategies and facilitates the planning of future learning activities, intervening in this way in the self-regulation of learning.

CONCLUSIONS

The present study examined the support and promotion of self-regulated learning in the HOU educational environment through the printed educational material, as the latter is described in its institutional level of function.

Based on the literature, the printed educational material in HOU is an interactive pedagogical tool of learning, whose forms, though differently interrelated in the stages of the learning process, support significantly the strategies of self-regulated learning.

In particular, it was found that the printed material is a content tool that supports the strategy of goal-setting and the cognitive strategies of organization and elaboration, an assessment tool that supports the metacognitive strategies of self-evaluation and self-monitoring and an administrative tool that supports the strategies of seeking information, of seeking help and of time management.

Furthermore, the accessibility and the significantly high degree of interest and engagement that characterize the educational material enhance the motivation of learners regarding their self-efficacy beliefs and strengthen the social interaction and support of the subject involved. In this way the material supports entirely the SRL, since the above variables are prerequisites for the enactment and development of SRL.

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