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Abstract

Life-long knowledge and the self-regulation construct have been widely studied in educational areas (such as the program for research on self-regulated learning – PEAAR (http://autoregulacao.uidce.fpce.ul.pt) concerning individual life options which meet the challenges of the twenty-first century. Researchers contributing to PEAAR have attempted to continuously evaluate the relation between educational practice and opportunities to develop self-regulated learning skills in learners. Researchers of this program have also attempted to validate results from research implemented in learning environments which promote active learning skill acquisition. In this sense, this paper presents the perspectives and implications from recent European studies and gives emphasis to the research done on self-regulation in technologically enhanced environments (TELEs) in terms of: i) Problem solving and information gathering based on WEB research and related with self-regulatory behavior and models which may be adapted to this learning environment; ii) curriculum specificity and self-regulated learning in scholastic motivation and expertise acquisition in TELEs; iii) teacher/student relations in TELEs.

Key-words: self-regulated learning, technology enhanced learning environments, Web, problem-solving, motivation, expertise
Introduction

Information Technology has brought many new challenges to learners studying within contemporary academic contexts in the sense that it requires continuous updated training. The access to different sources of information for example, involves new ways of planning and accomplishing learning tasks. It also entails specific skill development, such as information searching, selection and evaluation. Overall, learners have to be capable of self-regulating their learning process in order to achieve the goals they established and/or that were established for them. On the other hand, teachers should encourage social and intellectual environments which promote self-regulated learning.

In light of this reality, this paper presents the conclusions and implications from recent European studies and gives emphasis to the research done on self-regulated learning (SRL) in technology enhanced learning environments (TELEs) through the PEAAR program (Program for Research on SRL). To be more exact, we articulate problem-solving and information gathering based on WEB research with self-regulatory behavior and the SRL models which may be adapted to TELEs. Furthermore, we also focus on motivation and student/teacher relations in these contextualized contexts as means for developing motivation and consequently, domain-specific expertise.

Self-Regulated Learning: Perspectives and Practices

The educational paradigm of the 21st Century emphasizes the learner as the central element in the teaching/learning process and highlights the importance of context and pedagogical tools, such as technology (Steffens, 2007). Accordingly, teachers must help their students control their own learning process by providing them with opportunities to develop metacognitive skills and planning skills, to establish objectives and to select monitoring and evaluation strategies, which will allow them to regulate their actions.
Thus, SRL is centralized on learners’ conscious reflection about the meaning of problems and decision making in order to solve problems and reach objectives in a specific context (Monereo, Castello, Clariana, Palma e Pérez, 1995; cit. by Veiga Simão 2002). Furthermore, the SRL construct has been important for researchers to understand the process and attitudes learners adopt in acquiring and developing knowledge and competencies (Lopes da Silva e Sá, 2003). Moreover, researchers can use SRL as a learning tool to describe the level learners reach as they manage their internal and external ways of reaching goals.

Considering these aspects on SRL, this construct may be considered as a group of actions directed towards modifying occurrences that deviate from learners’ stipulated objectives. Nevertheless, there is no consensus in regards to the actual definition of SRL (Veiga Simão, Duarte, & Costa Ferreira, 2008). To specify, each model emphasizes different aspects (e.g. volitive, social, cognitive and cultural aspects). However, the common viewpoints of the different models present learners as active constructors of their meanings, objectives and strategies (Printich & Schrauben, 1992). According to all models, learners are also able to monitor, control and regulate certain aspects of their cognition, motivation, behavior and environment. Additionally, learners are capable of evaluating their own results and making necessary changes by comparing the last with references and existing criteria.

In this sense and in accordance with authors such as Zimmerman and Shunk (2008), SRL can be conceptualized in terms of learners’ cognitive, metacognitive, behavioral, emotional and social involvement. Also, the various proposals presented by various authors (Lopes da Silva e Sá, 2003) consider the conceptualization of SRL in terms of the phases of a cycle (forethought/defining objectives; strategic planning; monitoring/execution/volitive control; self-reflection/self-reaction), in terms of
dimensions (metacognitive, behavioral, motivational and contextual) and in terms of psychological processes (self-monitoring, self-evaluation and self-reaction). SRL is also a combination of knowledge about the appropriate motivation actions to achieve goals in environments that promote learner autonomy. These competencies are fundamental for learners to effectively learn to learn, to guide their academic progression and to ensure their continuous training after they leave the national education system (Zimmerman & Shunk, 1998; Boekaerts et al., 2000; cit. by Rosário, 2001).

According to Zimmerman and Shunk (2008), not only does the teaching/learning process involve cognitive components, but it implies social components as well. Social groups allow individuals to have an active involvement when constructing knowledge because of social influences and learner plasticity (Coll & Solé, 2001). This way, the individual construction of knowledge becomes inseparable from the collective construction which is done through the cultural and interpersonal interaction between teacher and learner (as well as student peers) in a classroom context (Vygotsky, 1988). This perspective emphasizes the role of peers in terms of SRL strategy acquisition, collaborative learning, interaction and participation as social constructors of knowledge. This viewpoint also highlights the teacher’s role as a stimulator for competent, efficient and motivated use of technology and other resources which enhance the learning process (Lopes da Silva, Veiga Simão & Sá, 2004). Teachers have a double function which requires them to simultaneously be learners and teachers as they develop teaching models and practices connected to SRL and focused on their students in order to create new learning environments.

*Self-regulated Learning and Motivation*

Self-regulation involves feelings, thoughts, self-generated and systematic actions which are adapted to different challenges, depending on the motivational and learning
needs of each individual (Schunk & Ertmer, 2000; Pintrich, 2000). That is, learners attribute unique meanings to content which is proposed to them in class and interpret how and why each problem must be solved (Boekaerts & Niemivirta, 2000; Veiga Simão, 2005). Thus, content and activities must be contextualized and meaningful to facilitate correspondence dynamics between learners and their learning experience and consequently, to provide them with excellent academic results (Rosário & Almeida, 2005; Ericsson, 2002; Veiga Simão, 2005).

According to some authors (Bronson, 2000; Chu, Jamieson-Noel & Winne, 2000; Paris & Winograd, 2003; Rheinberg, Vollmeyer & Rollett, 2000; Semmar, 2006; Veiga Simão, 2005; Zimmerman, 2000), motivation is a fundamental dimension of SRL because the last implies effort and decision-making, mainly, in regards to motivational decisions about objectives, task value and difficulty, self-perceptions and performance. Moreover, the variance levels of motivation to self-regulate one’s own learning depend greatly on self-perceptions.

According to Lemos (2005), motivated learners will make more of an effort, show greater interest, reveal superior resistance levels, use cognitive and metacognitive strategies proactively and behave more optimistically when confronted with a task than unmotivated learners. Consequently, the level of motivation influences the level of performance/actual learning because it determines the ways in which learners take certain measures in order to learn (Ericsson, 2002; Kozlowski & Bradford, 2006).

Considering this view on the motivational dimension of SRL, one of the principal preoccupations teachers should have is to create learning environments favourable to motivation stimulation. Learners should be provided with incentives to establish ambitious and realistic learning objectives in these contexts, which ought to in turn,
promote genuine and autonomous learning for self-esteem and creativity enhancement (Bronson, 2000; Rosário & Almeida, 2005; Veiga Simão, 2002). According to Vansteenkiste, Zhou, Lens and Soenens (2005), motivation can emerge from autonomous learning environments which promote adaptive learning, academic success and personal well-being. In agreement with this notion, Grolnick and Ryan (1987) verified that learners in motivating environments tend to show a higher level of interest and conceptual learning about the content that is to be focused.

What learners think of their own intellect influences their development in terms of the effort they put into tasks, as well as their action organization, information memorization and short-term/long-term objective establishment (Demetriou, 2000). Self-efficacy, for example, refers to learners’ beliefs about their capacities to organize and implement necessary actions in order to obtain their desired performance results (Schunk & Ertmer, 2000; Zimmerman, 2000) and influences the way in which these learners face academic challenges and learning strategy use (Kenney-Benson, Pomerantz & Ryan, 2006; Pastorelli, Caprara, Barbaranelli, Rola, Rozsa, & Bandura, 2001). Learners that have a strong sense of self-efficacy use a wider range of SRL strategies, maintain high levels of motivation and are more likely to achieve success in their learning (Jakubowski & Dembo, 2002; Semmar, 2006). Nevertheless, SRL doesn’t only involve the will to learn. It also entails cognitive dimensions and strategic reasoning and action (Porath & Bateman, 2006).

**Contextualized Learning Environments**

Learning must be contextualized in order for students to actively take meaningful content from any given situation and to affectively, cooperatively and intrinsically connect to what is being studied if they are to obtain excellence (Bruner, 1971;
In SRL, context and interpersonal relations are fundamental for positive academic achievement considering learners control their learning progress not only through a mental process, but through social interaction as well (Land, 2000; Jakubowski & Dembo, 2002; Paris & Winograd, 2003). In order to promote SRL in a classroom, it is necessary to include learning strategies in a continuous manner in the national curriculum of the different disciplines (Boekaerts & Niemivirta, 2000; Randi & Corno, 2000). It is also essential that educational institutions establish objectives in accordance with SRL strategies that allow learners to elaborate, transform, contrast and reconstruct knowledge that they acquire in their academic path (Veiga Simão, 2002).

A pedagogical program that promotes SRL should include motivational components that influence the way in which learners believe in their capacity to learn and the way in which they give value to educational tasks (Jakubowski & Dembo, 2002; Vanzile-Tamsen, 1998). Consequently, educational programs should be flexible and respect learner differences by containing various personalization approaches which contemplate individual intellectual activation and information sequencing (Bruner, 1971). These programs should appeal to each learner’s distinctive intrinsic motivation and simultaneously, drive them to a common objective, which is the acquisition of genuine information.

It is vital that teachers create opportunities and space to expand learners’ ideas, to appeal to their sensitivity and to promote flexibility in domain-specific environments (Rice, 2002). Many researchers agree that SRL involves regulating motivational strategies and builds on domain-specific knowledge (Ziegler et al., 2003; cit. by Steffens, 2007). However, and as we have mentioned, it needs to be applied in a continuous manner in specific contextualized learning environments where a variety of...
different participants and resources is fundamental (Paris, & Winograd, 2003). In addition, and according to authors such as Nisbet and Shucksmith (1987), a strategy must be distinguished from a skill in a SRL classroom environment. The first must be a planned and intentional action in which teachers decided whether or not it’s the most adequate one for that particular activity. A skill such as underlining, summarizing, taking notes (Nisbet & Shucksmith, 1987), observing, comparing, ordering, classifying, representing, acquiring, recovering, interpreting and transferring data as well as demonstrating and valuing learning, can be used strategically by teachers in order to obtain the desired results in a specific task. These skills may be intentionally applied in any discipline and may be modeled in a contextualized and meaningful setting (Veiga Simão, 2005).

SRL in TELEs

The capacity to innovate and to cooperate with the rhythm of changes related with learning and learning tools is crucial in today’s academic society. SRL results from the interaction of personal and contextual variables as an active and constructive process. It allows learners to define objectives as well as to plan interventions, monitor, regulate and control cognitive, metacognitive, motivational, behavioral and contextual factors (Azevedo & Cromley, 2004). In this sense, the SRL models offer a conceptual framework to examine how learners learn and adapt to different situations during their learning process in TELEs (Delfino & Pérsico, 2007). In these environments, learners tend to highlight constructive activities, collaborative work and the freedom to learn.

TELEs are comprised of various parts, namely, Information Technology, teaching strategies, activities and evaluation methods. One of these parts, such as Information Technology, is not enough to provide learners with SRL. Although technological tools
(e.g. Web sites, hypermedia and multimedia) have great potential to promote SRL, they must be integrated with interventions that contemplate other factors, such as social aspects and pedagogy (Hansen, 2007). The technological resource is not the most determining factor, but instead, how one uses it creatively and constructively (Kirkwood & Price, 2005).

SRL in TELEs is influenced by factors which are associated to learners such as learning styles and interests. It is also influenced by factors which are associated to teachers, the learner community and learning environment which includes technology (Beishuizen, 2007). In regards to learners, specific characteristics are determining for SRL to be developed in TELEs because previous knowledge, learning approaches, interests, motivation and age influence individual experiences and learning outcomes. As for the teachers, they must know their responsibilities and adaptation needs and their role must be clarified to students. Lastly, TELEs are continuously updated, and with this update, new adjustments must be made so as to adapt them as much as possible to learning environments.

The new TELEs contribute to a re-appreciation of the teaching/learning process because of the velocity with which access to information and communication can be established in a vast learner community. Learning in TELEs implies offering learners activities which promote metacognitive reflection which will allow them to select searching strategies, monitor strategy impact and critically evaluate accessed information.

The SRL models offer a conceptual framework which permit further understanding and development of how learners adapt and learn with the help of new technologies (Azevedo & Cromley, 2004). Learners benefit from the potential of TELEs, as they
adopt strategic processes and activate competencies to reach stipulated objectives. TELEs provide opportunities for learners to plan, monitor and evaluate their learning activities, as well as share resources, interact socially and obtain feedback as long as teachers implement them properly. Nonetheless, this type of learning environment in SRL depends greatly on how SRL strategies are used by learners (e.g. how learners adapt, plan actions, ask for help and monitor their own learning process in a specific learning environment).

The Web and Information Problem Solving: Information Literacy

Constructing knowledge in TELEs requires learners to choose paths and relevant data, to question their choices and to construct their own data bases. Learning in TELEs also implies metacognitive reflection in relation to effective searching strategies (Rimor & Kozminsky, 2000). We will specifically consider the potential of an Information Technology tool, the Web, which is one of the most used channels for individuals to establish communication and share, search and recover information. This tool may have the potential to promote SRL and may be defined as a collaborative and interactive information environment (Catledge & Pitkow, 1995; Tewksbury & Althous, 2000; cit. by Kari, 2004) with a global hypertext structure (Lazonder, 2003). It is composed of hypermedia documents and interconnected hypertexts. Considering its characteristics, the Web may be labelled not only under the technologies category, but under a more generalist category as well. To specify, this generalist category includes other information tools, such as books, libraries and media, and may be considered as a complementary and dynamic data base for other information resources.

Searching and finding information with this type of tool is important for education and for the 21st century (Henry, 2005). This type of tool as an educational resource
requires learners to be capable of acquiring new competencies and of self-regulating their own learning process. Moreover, this type of tool allows learners to decide how, when and where to participate in learning experiences and how to search for new information from web page to web page (Howard, McGee, Shia & Hong, 2001). Hargis (2001) stresses several reasons why individuals use the Internet as a learning resource. To be more exact, he states that access speed, unlimited resource possibilities and collaborative aspects are all motives for accessing the Web. For teachers, using the Internet implies change in terms of their roles and in terms of critical and reflective use of technology tools not only as teachers, but as learners as well.

The technological advances that the Internet and the Web represent, have gained important foreground at cultural, social and economical levels. It compels educational systems to respond to a new learning culture in which it is fundamental to identify new literacy competencies, such as identifying guide questions for searching and gathering information; critically evaluating the information found; and summarizing as well as sharing information with other.

The capacity to search and identify relevant information is one of the most important skills in order for learners to take advantage of the full potential and offers of the Internet. When learners search on the Internet for instance, they have access to a wide quantity and even overload of information which requires reflective and strategic management so that only the information that is vital to their objectives is retrieved. Furthermore, the acquisition of this type of information management skills requires systematic search procedures.

When searching for information, learners should previously define the problem in order to narrow any generalizations. Once this step is completed, they should reorganize
and evaluate the information acquired in order to finally solve the problem. This process may be contemplated as search methods and strategies (Meneses, Valiente, & Armayones, 2005) which require evaluation competencies and expert strategy use (Delfino & Pérsico, 2007). Moreover, this process entails specific Information Technology skills on the learners’ behalf, as well as cognitive and metacognitive capacities which are associated with the construction of knowledge and problem solving (Scardamalia & Beireter, 2006, Mayer, 1998; cit. by Caviglia & Ferraris, 2006). Ultimately, in order to search for and find relevant information, learners must ask questions, consult the available resources and coordinate search results (Lazonder, 2003).

Searching strategies are intimately related with learners’ conscious and intentional decisions. The last are made to guide the search, the selection and the construction of knowledge. Additionally, learners search for information on the Web by using different strategies, such as defining key words, selecting the search engine, opening different search engines simultaneously, and register the required information according to their options and decisions (e.g. copying documents, taking notes and printing selected documents). As they use the electronic resources available to them, learners must then reflect and evaluate the competencies, strategies and study habits they use in order to search for information and consequently, analyze it (Rogers & Swan, 2004).

The efficiency of information searching depends greatly on learners’ research techniques because they must always consider the quantity, heterogeneity and update of information that is constantly present on the Web (Meneses, Valiente, & Armayones, 2005). If learners don’t take this into consideration, they might take the risk of losing important information which will allow them to reach their goals.
When solving problems related with information gathering, SRL strategies may improve the way learners approach different learning situations. Moreover, the systematic use of these SRL strategies promotes problem-solving competencies. Therefore, and according to Wirth and EckHard (2003), these strategies should be transversal academic objectives in the national academic programs and in diverse professional sectors. Lastly, as the Internet and Web create an impact in classrooms, it is important to give students opportunities to put these strategies into practice with the use of technological resources in TELEs (Rogers & Swan, 2004).

Teacher/student Relations in TELEs

SRL facilitates learning awareness, skill development and content comprehension, allowing teachers and students to face the challenges that emerge from TELEs. As the Internet becomes more and more available in classrooms, learners need to have competencies that will allow them to use and reuse this learning tool (Rogers & Swan, 2004). In fact, the learners of today are part of a digital and cyber generation that uses the Internet, as well as the Web, to complete school tasks and to accomplish free time activities. Therefore, it is likely that they develop SRL in using technology to complete tasks, as long as they have guidance from a teacher. These individuals chose and demand the most recent technology in their classrooms so as to improve the access they have to new information and the speed with which they can complete learning tasks.

According to some authors (Oblinger & Oblinger, 2005; Prensky, 2006; Tapscott, 1998; cit. by Barnes, Marateo, & Ferris, 2007), the Internet generation presents distinct ways of thinking, communicating and learning. What's more, they want to actively engage in their own learning. In this sense, they must learn to self-regulate their learning and need to engage in interactive learning environments with appropriate feedback and
opportunities to choose tasks and develop their information literacy. Additionally, this Internet generation prefers to complete academic work in peer groups. This type of social participation and interaction facilitates their understanding of how to use technological resources. Therefore, teachers should provide these learners with pedagogical strategies and tools (e.g. Blogs and Wikis) that stimulate this social interaction and participation. If new technologies are integrated into pedagogy and human intervention continuously, they will allow learners to communicate with their peers and teachers more easily and will let them adapt to new methodologies and new interactive systems. Interaction between learners is a dynamic process in comparison with individual learning. When individuals work together, they tend to help each other learn better in situations where they explain to one another the learning contents (Boekaerts & Corno, 2005).

Teachers have a fundamental role in TELE’s because they assist learners in knowing how to use Information Technology as well as how to choose learning strategies by explicitly establishing objectives, developing and delivering cognitively stimulating activities, and clarifying evaluation procedures (Bruner, 1971; Ericsson, 2002; Rosário, 2004; Veiga Simão, 2005; Zimmerman, 2000). Throughout this entire process, it is crucial that teachers guide and give learners pedagogical instruments in order to facilitate and improve their performance. Accordingly, teachers should monitor learners’ learning process while they use technological resources as well as learning strategies. Thus, teachers should focus on developing learners’ metacognition in these contexts and create opportunities for them to get to know, control, manage and modify their learning process with the help of technological resources.

In order to promote SRL in these new learning environments, teachers must continue to be guides in order to stimulate active learner participation. Also, teachers
must learn to include these technological resources in their teaching methodology, which requires them to self-regulate their own learning and teaching actions. Teachers must be reflective and critical about their conceptions and practices in regards to these new resources (Brodeur, Dussault, Deudelin, & Richer, 2006). In this sense, teachers should know how to intentionally apply strategies in order to plan, supervise and evaluate learners’ processes and consequently, share this information with the (Azevedo & Cromley, 2004).

Considering teachers should experience what their students do, social processes are essential and have an impact on how the first develop teaching methodologies. In agreement with Coll and Solé (2001), through educational practices, social groups offer an active knowledge gain during a wide period of time where social influence as well as learners’ plasticity and permeability increases. If we consider that teachers are learners themselves in the process of developing teaching techniques and resources, then they too benefit from these technological resources. This perspective also highlights the benefits social peers (e.g. schoolmates and work colleagues) have to offer in terms of regulative strategy acquisition and collaborative learning.

In conclusion, TELEs require teachers to question how they can learn and teach learners to evaluate information critically. SRL can help them reach this objective. Through SRL, teachers can help learners choose pertinent information from the Internet and even acquire expertise in how to handle this resource in order to accomplish tasks. Lastly, we recommend that the use of SRL in operating TELEs be of further study in the research community, considering it is one of the topics of interest of this century. Additional research must be made in specifically analyzing the detailed SRL processes that lead to successful implementations of TELEs.

*Domain-specific Expertise in TELEs*
There is a motivational factor that is adherent to the process of acquiring excellent results as we see with expert performers in acquiring their expertise (Ericsson, 2002). That is, learners give meaning and have their own reasons for learning and using specific, but flexible techniques to acquire the desired level of knowledge (Rosário & Almeida, 2005). Furthermore, intellectual development is marked by increasing capacity to allocate time and attention to a task (Bruner, 1971) and this process is parallel to the motivational levels implicit in the learner. Therefore, motivation clearly influences the process and results of tasks, which consequently, lead to learning (Wigfield & Eccles, 2001). These characteristics are typical of an expert performer who flexibly evaluates and considers more than one relevant possibility in terms of problem solving without losing concentration during the task at hand and in stipulated time.

TELEs have the potential to help learners with motivational levels because they include a variety of options through which learners can acquire information and consequently, facilitate their study searches (Steffens, 2007). Furthermore, most learners use technological resources for tasks outside their school therefore, they are familiar with these tools when they work with them in a classroom context (e.g. the Internet and the Web).

Experts retain cognitive control over detailed aspects of their performance at the highest levels and depend on mental representations (evaluative anticipation devices) acquired over time with experience from deliberately practicing a specific task to support planning, monitoring and evaluation. Learners, whose goal is to achieve excellence, deliberately work on obtaining and improving cognitive mechanisms which increase their control and ability to monitor and evaluate their performance. In other words, they use self regulation methods to acquire the desired results through deliberate
planning and reasoning, as well as evaluation in order to reduce the frequency of mistakes (Ericsson, 2002).

Learners must surpass automaticity during the time it takes to acquire levels of excellence by developing increasingly complex mental representations (Ericsson, 2002). In other words, they must cultivate conscious reasoning in order to identify what their weaknesses and strengths are and what strategies to adopt – a process which may be controlled through the use of Information Technology. In this case, TELEs offer a variety of tools that can help learners keep track of their performance levels in detail (Bell & Kozlowski, 2002). Not only can they measure the error frequency, but they may also identify the error itself (Bartolomé, 2007). In order for learners to verify this type of information, teachers must ensure that the software they use in class includes features which allow this monitoring to occur (e.g. Learning Management Systems).

When learners are introduced to a task, they approach it in a playful manner and from there they should be encouraged to pursue it in a more serious manner (Wigfield & Eccles, 2001) and seek professional expert instruction and guidance from specialized teachers. This type of guidance and professional expert instruction is only possible in TELEs if teachers themselves have continuous training on how to manage a learning environment that incorporates technology. Nevertheless, once the TELE is organized with both technological and human resources, learners may improve their domain-specific knowledge and becomes independent, although they are working within a learning community (Dettori, Giannetti, & Persico, 2006).

**Empirical Perspectives**

We have presented perspectives and implications from recent European studies and give emphasis to the research done on SRL in TELEs. To be more exact, we focused on
issues such as, problem solving and information gathering based on WEB research and simultaneously relate it with self-regulatory behavior and models which may be adapted to TELEs. Furthermore, we highlighted SRL in scholastic motivation and expertise acquisition in TELEs as well as teacher/student relations. Nonetheless, it is essential to develop further studies so as to determine the potential of TELEs (with resources such as the Web) as a support for SRL in order to develop life-long knowledge and the self-regulation construct. As a contribution to this area of study, current research is being developed at Lisbon’s Faculty of Psychology and Science Education in the Research Program on SRL - (PEAAR) (http://autoregulacao.uidce.fpce.ul.pt).

We, the researchers contributing to the PEAAR, have attempted to continuously evaluate the relation between educational practice and opportunities to develop self-regulated learning skills in learners. We have also attempted to validate results from research implemented in learning environments which promote active learning skill acquisition. In light of the theoretical propositions presented in this paper from other recent European studies, we intend to highlight two studies which are currently underway at our research laboratory.

One of our current studies involves exploring secondary school students’ study habits, as well as SRL in problem solving related with searching for information on the Web. Furthermore, we propose to understand the ways in which the Web promotes SRL. We opted to focus on this type of learning environment because of its potential in terms of communication and information acquisition. Moreover, we expect to acquire new data that will allow us to construct and improve new pedagogical and technological tools that will facilitate teaching and learning in academic settings as well as throughout life-long professional contexts.
To be precise, we aim to study the learning paths of 10th grade students throughout 2 academic years in order to capture their perspectives related with SRL and information gathering by using the Web. In addition, as we consider SRL as a socially constructed process, we will consider a qualitative methodology that will allow us to register descriptions regarding the participants in these learning environments. In this sense, we intend to do a descriptive study involving cross-referencing of data originated from observations, interviews and questionnaires. This methodological option was based on previous studies done in Educational Psychology involving SRL in which the methodologies used (qualitative) provided us with information relating to behavioral aspects of the learners and their causes.

Lastly, in regards to this study, we intend to acquire new possible tools and pedagogical resources which promote SRL. In this study regarding SRL and TELEs, our main goals are to identify training proposals for teachers in academic contexts; to identify tools and learning environments that promote SRL in Secondary School students and motivate them while they study at home; and to identify intervention strategies, pedagogical help, orientations and suggestions for better pedagogical practices.

Another study we are currently working on is based on the TELESTUDENTS-SRL (Telepeers, 2005) Questionnaire, The Student form to evaluate the support for Self-Regulated Learning provided by a Technology Enhanced Learning Environments (TELEs). With this study, we intend to examine the opinions of students from a private institution that are working in a TELE and that have to self-regulate their learning process, namely, knowledge acquisition and study rhythm. Authorization to implement this questionnaire was granted by the directors of this private institution as well as the
students themselves. Parent authorization was not required, considering the students are mostly adults.

In this study, we intend to correlate variables such as the duration of each student’s course, their age, gender, working status with each student’s opinion regarding SRL and details of the TELE. Our goal is also to find out whether the learners’ learning environment (TELE) helped them to regulate and/or organise their own learning. Additionally, we would like to know to which extent different aspects of the learning environment were important for the learners’ learning outcome. To be exact, we want to analyze how the students think they did and why they think they performed in a certain way. In order to answer these questions, we have students fill in the questionnaire and specifically mark the reason why they think they performed, that is, whether they thought it was because of their tutor, the software they used, the effort they put into their studies and/or because they consider themselves to be bright students. As of now, 100 students have participated by filling in this questionnaire.

Both these studies are underway along with others which will reflect the potential of TELEs and SRL in the near future. We expect to continue to develop further studies regarding these learning environments and methodologies in an attempt to improve the ways in which teachers teach and learners learn.

Conclusion

The Web is a new, powerful and difficult environment to explore and requires specific SRL competencies in order to identify the desired information. Moreover, these types of competencies that students require when surfing on the Internet, implicates pre-acquired knowledge on their behalf, such as being able to research and use the available information in order to achieve predefined objectives (Hargis, 2001). These skills are
important for learners because the Internet allows them to access and share a multiplicity of resources and engage in authentic learning activities, as well as decide how, when and where to participate in planned learning situations, and lastly, monitor and analyze their process. Considering all of these implications in TELEs as a support for SRL, it is essential to develop further studies so as to determine the potential of these learning environments in order to develop life-long knowledge and the self-regulation construct.

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