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SELF-REGULATED LEARNING – THEORIES OR PEDAGOGIES

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Abstract

The current pedagogies promoting Self-Regulated Learning (SRL) present three separate Self-Regulated Learning pedagogies: (1) Key components of the study and task conditions including SRL; (2) Gradual process of SRL transfer; (3) Direct instruction of SRL strategies. The present research reveals the connections between these different approaches, analyzes their applications and most of all contextualizes them theoretically. The literature review conducted for this study shows that pedagogies to promote Self-Regulated Learning can be thoroughly understood in relation to socio-cognitive and socio-cultural theoretical contexts. This deep conscious process of teaching and learning is explained by these three pedagogies via theories that are connected to reading and writing research. A fourth pedagogy presents synergetic integration of the three Self-Regulated Learning pedagogies interwoven with Self-Regulated Learning theoretical contexts. Finally, application and implication of the fourth pedagogy will be presented and recommended, including pre-service teachers' preparation programs. Research findings show that providing tasks that include a range of techniques involving establishment of a system of scaffolding in discourse helps pre-service teachers in primary schools to develop SRL practices to promote students' SRL (Perry, Hutchinson & Thauberger, 2007). Based on research findings that pointed to the considerable contribution of pre-service teachers' collaborative reflective learning discourse on developing their teaching to promote Self-Regulated Learning (Michalsky & Schechter, 2013), it is recommended that promotion of SRL in teaching will be develop by shared-regulation learning discourse in groups.

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1. Introduction

For years, widespread consensus existed among researchers regarding the general definition of SRL. Despite the consensus, a number of published literature review studies pointed to a variety of views regarding SRL construct (Paris & Paris, 2001; Dignath & Büttner, 2008; Dignath, Büttner & Langfeldt, 2008; Moos & Ringdal, 2012). Over the years, numerous research studies that were conducted, transformed SRL into a field of massive proportions, pointing to continued expansion and development. As a result, SRL became complex and intricate. Therefore, it is important that researchers set their theoretical sights on SRL and present them in context.

In order to promote SRL, three main SRL pedagogies are identified in the literature (Dignath & Büttner, 2008; Michalsky & Schechter, 2013): (1) Key components of the study and task conditions including SRL; (2) Gradual process of SRL transfer: (3) Direct instruction of SRL strategies. This article will present these pedagogies and the learning environments in the context that promotes this learning. Specifically, a contextualization of these three SRL pedagogies in two specific central social theories – socio-cognitive and socio-cultural theories – will be described. Furthermore, a fourth SRL pedagogy driven from the contextualization will be suggested. Finally, the application and implication of this pedagogy in teaching and in pre-service teachers' preparation programs will be presented and recommended.

2. Pedagogies to promote SRL

The literature review reveals three contributing pedagogies to promote self-regulation learning (Dignath & Büttner, 2008; Michalsky & Schechter, 2013):

2.1. Advance presentation of key components and task conditions inducing SRL pedagogy

The pedagogy focuses on the presentation of key components of the study and includes self-regulation learning in the task conditions such as; giving students choices, opportunities for control, peer collaboration, cards, hints etc. (Cleary & Zimmerman, 2004 ; Perry, VandeKamp, Mercer, & Carla, 2002; Perry & Rahim, 2011).

2.2. A gradual SRL process of transition pedagogy

The pedagogy concentrates on beneficial demonstration in the framework of a gradual process of transfer from an experienced demonstrator to an inexperienced individual who emulates him. The latter becomes a self-regulator when he adapts learning strategies and uses them according to new context demands (Schunk & Zimmerman, 1997a,b; Zimmerman, 1998; Schunk & Zimmerman, 2007).

2.3. Direct instruction of SRL strategies pedagogy

The teacher instructs his students in cognitive, metacognitive and motivational strategies through direct guidance and regulation. He gives his students explicit instructions on how and when to use the strategies, what goals to set and how to attain them, while monitoring their use during the course of learning (e.g. reading in accordance with reading goals) (Boekaerts, 1999; Paris & Paris, 2001; Dignath, Büttner & Langfeldt, 2008; Dignath & Büttner, 2008).

Direct instruction also includes explicit information about the meaning and the importance of those strategies use in order to achieve metacognitive understanding that can lead to future transfer of the learned strategies to other situations and contexts of learning (Michalsky & Schechter, 2013). In practice, research shows a combination between direct instruction with demonstrational and explicit instruction or indirect instruction, in teaching (Dignath, Büttner & Langfeldt, 2008; Dignath & Büttner, 2008; Michalsky & Schechter, 2013).

Furthermore, research findings indicate a reference to teaching learning strategies in advanced technology study environments as processes of SRL on a macro level (planning processes, monitoring processes, use of a strategy etc.), in parallel to specific cognitive and metacognitive behaviours process of SRL on the micro level (Greene & Azevedo, 2009). By using "thinking-aloud protocols" while learning in these environments, differences have been found in the way students study and actively construct their knowledge in an idiosyncratic manner (Moos & Azevedo, 2008; Greene & Azevedo, 2009).

3. SRL Pedagogies Contextualization in Learning Environments that Promote SRL

The literature reviewed for this article did not find contextualization of SRL pedagogies in learning environments. Instead, learning environments are perceived in the literature as enabling learners opportunities to control their own learning and encourage students to learn in a self-regulated way as an important prerequisite to promote SRL in classrooms (Zimmerman, 2000; Perry & Vandekamp, Mercer & Carla, 2002; Otto, 2010; Perry & Rahim, 2011).

The learning environment is made up of student and teacher characteristics, learning content, tasks, and teaching methods. Guiding principles for conductive learning environments to foster students' self-regulatory skills are: social interaction among students, active construction of knowledge, learning embedded in authentic situations to foster transfer, and development of self-regulatory skills (De Corte, Verschaffel, and Masui, 2004). Studies presented empirical support for the positive effects of powerful learning environments on SRL in increased students' self-regulation activities, and in better academic performance (Masui & De Corte, 2005). Advanced technology learning environments include various scaffoldings and possibilities for choosing learning paths and strategies to accommodate the instruction to different students self-learning in addition to face-to face dialogue (Perry & Vandekamp, 2000; Moos & Azevedo, 2008).

4. 1SRL Pedagogies Contextualization in SRL Theories

Connections between SRL pedagogies and SRL theories are explicitly mentioned in the literature review of earlier theoretical research; however less attention was paid to the implications of these connections (e.g. Paris & Paris, 2001; Moos & Ringdal, 2012). Accordingly, SRL pedagogies contextualization in SRL theories is conducted in this article. Specifically, the theoretical context of this article is based on the meta-analytical research of Dignath & Butler (2008) on training programs in SRL. The researchers found that the most effective characteristics of intervention programs for teaching young children are based on socio-cognitive theories, or on social theories in combination with metacognitive theories (Dignath & Butler, 2008). In light of this, SRL socio-cognitive theory and SRL socio-cultural

theory combined with metacognitive processes and strategies will be presented. Then, an explanation of the pedagogies contextualization in these theories will be reported.

4.1. SRL Pedagogies Contextualization in SRL Socio-Cognitive Theory

Zimmerman's (1989) initial theoretical conceptualization of SRL is the same general definition agreed upon by researchers in the field as a cyclical process that involves connection of the self to thoughts, emotions and actions that are directed towards the achievement of personal goals. The process involves integration between cognitive, metacognitive and motivational processes within organized learning environments in specific instructional- learning classroom contexts (Zimmerman, 2000; Boekaerts & Corno, 2005; Perry & Rahim, 2011; Pintrich, 2000). This theory refers to demonstration in Bandura's (1986, 1997) social learning theory and to observation, manifested through emotional and behavioural self-efficacy and self-regulation in learning (Bandura, 1986, 1997).

The initial model of SRL from socio-cognitive theory concentrate on SRL as a multifaceted process focus in three phases: forethought, performance control and self-reflection (Zimmerman, 2000). Schunk & Zimmerman's (2007) later model assumes the existence of the main principles of the earlier model based on four developmental levels: observation, emulation, self-control and self-regulation. The first two levels are based mainly on social factors whereas the other two depend more, in terms of their influence, on the student (Schunk & Zimmerman, 2007). The emphasis on internalization in the later model corresponds in part with the socio-cultural theory of Vygotsky (1962), which assumes that an activity that is socially mediated has an impact on thinking. The social environment, together with human factors, create learning, and cognitive change is evident as a result of using cultural tools in social interactions, internalization and mental transfer of these interactions and their application in other contexts (Vygotsky, 1962).

Numerous research findings by Schunk & Zimmerman support the application of models for reading in SRL, reinforce the fact that when adults or peers demonstrate and emulate it constitutes an effective means for teaching reading strategies, although most of them do not progress beyond this to the levels of self-control and self-regulation (Schunk & Zimmerman, 2007). It can be concluded that according to this theory, in view of the importance of **demonstration** in the initial stages of learning the **gradual SRL process of transition pedagogy** is identified with these two stages that play a part in the context of the socio-cognitive theory. In light of this, it is clear even to researchers who have maintained this theory from the outset that changes are called for and it weakens with respect to the advanced stages of self-control and self-regulation (Schunk & Zimmerman, 2007).

At the same time, there is also a connection between socio-cognitive theories and the **advance presentation of key components and task conditions inducing SRL pedagogy**. Initially under laboratory conditions, and later under different conditions of intervention in different learning contexts and in diverse classrooms, constructed and pre-planned according to the stages of SRL by Zimmerman (2000) and according to the stages of social learning **through demonstration** (e.g. Cleary & Zimmerman, 2004; Zimmerman, 2000; Schunk & Zimmerman, 2007).

4.2. SRL Pedagogies Contextualization in SRL Socio-Cultural Theory

SRL according to socio-cultural theory is similar to the general agreed definition, however it emphasises

the description of effective metacognitive learners, motivated to learn and describe their use of strategies. The learners are described as interacting with another person, analyzing the task demands according to their strengths and weaknesses, choosing from a repertoire of strategies those who are more suited to the task and the learning profile and apply them appropriately to the challenges they are facing in a learning process in order to receive tented learning outcomes. (Zimmerman, 2008; Perry & Rahim, 2011) . Teaching to promote SRL is done by developing it in gradual teaching stages, using scaffolding suited to the student including teacher-student/s discourse according to the 4-phases model of SRL from socio-cultural theory which including: task definition, goal setting /planning, enacting, and evaluation/adaptation (Winne & Hadwin, 1998).

Most of the research on **advance presentation of key components and task conditions inducing SRL pedagogy** stems from this theory in combination with metacognitive processes and use of metacognitive strategies (Winne & Hadwin, 1998; Perry, VandeKamp, 2000; Hadwin, Wozney & Pontin, 2005; Perry & Rahim, 2011). Research conducted on this pedagogy revealed different stages in teachers' guidance in order to promote SRL. The findings indicate that SRL advancement is influenced by the way in which teachers organize their curricula with respect to language reading and writing and to the way in which they interact with the students and the students interact with each other. In addition, it has been found that SRL develops and grows in classes where the teachers practice direct regulation and demonstration in the initial stages of learning and subsequently guide the students (Perry, VandeKamp, Mercer & Carla, 2002; Perry & Rahim, 2011).

Thinking aloud by the teacher during the lesson serves as **scaffolding** and allows the student to advance in the potential development zone for the purpose of constructing meaning, gaining knowledge and developing cognitive capability. As a result, the student verbalizes his own thoughts, emulating the voice of the teacher in his internal speech until he develops his own personal "inner voice" and gradually becomes a student possessing SRL (Vygotsky, 1978; Hadwin, Wozney & Pontin, 2005; Schunk & Zimmerman, 2007). Research studies show that it is possible to discern **the transition** from study "ownership" under the direction of the teacher to independent learning of the student in the course of **co-regulation discourse** between teacher - student, or between an experienced student - an inexperienced one, and in **share-regulation** between them (Pintrich & Schunk, 2002; Perry & Drummond, 2002; Hadwin, Wozney & Pontin, 2005; Perry, Hutchinson & Thauberger, 2007; Perry & Rahim, 2011).

Specifically, from the socio-cultural perspective the mutuality between the three pedagogies in specific context of the learning environment is seen in **teacher-student discourse** that develops in transactions (series of mutual interactions) between the personal and social dimensions in the teaching-learning contexts that advances SRL in the classroom (Hadwin, Wozney & Pontin, 2005; Perry & Rahim, 2011). According to the **first** pedagogy, incorporation of scaffolding to advance instruction, mainly through discourse, is adapted to the student, the tasks, the learning environment and the context. According to the **second** pedagogy, some of the early self-regulation stages are based on demonstrational instruction and verbalization and learning through observation and emulation can be seen. These stages that were adopted from socio-cognitive theory in combination with the socio-cultural theory of Vygotsky (1962, 1978) are oriented to advance students SRL through demonstration and emulation. Furthermore, according to the **third** pedagogy, the learning of self-regulating strategies is combined with direct instruction through

dialogue geared to the different students.

There appears to be room to continue developing the pedagogy of **discourse** in order to advance SRL, and not view it only as part of the human learning environment characteristics. According to research, the following stages should be added to the **third** pedagogy through discourse contextualized in socio-cultural theory: indirect regulation by the teacher teaching strategies, and in parallel, direct learning by the student(s), followed by indirect learning and request for help according to the stages in advancement of self-regulation, until the independent learner stage is attained.

Throughout the process, the sense of self-efficacy is intensified; inner speech is internalized in the advanced stages of the development of learning and is consolidated when the student reaches regulated learning independently. At this stage, the integration of control and monitoring processes with metacognitive processes develops and the student sets himself new tasks and challenges in learning and in achievement according to the SRL 4-phases model, independently and by his own choice (Winne & Hadwin, 1998). Part of the regulation stages through discourse can be carried out between teacher and student or between students, one of whom is more experienced than the other, in the framework of **co-regulation discourse**. Additional parts of the regulation stages through discourse can be in a collaborative manner with a group of students with / without a teacher in the framework of **shared-regulation discourse**, and independent inner speech.

5. Towards a Fourth SRL Pedagogy

The understanding that there is room to integrate the three SRL pedagogies which are associated with two different theories and their interweaving intensified the construction of a fourth pedagogy. Consequently, it appears that teaching should focus on the first stages of observation, demonstration and verbalization, deriving from the second pedagogy of the gradual transition process of SRL in the context of socio-cognitive theory (Zimmerman, 1998). While the following stages focus mainly on the socio-cultural approach in developing co-regulated teacher-student discourse and in shared discourse with peers with/without a teacher, incorporating reference to various aspects of SRL (Boekaerts, 1999; Pintrich, 2000; Boekaerts & Corno, 2005; Hadwin, Wozney & Pontin, 2005; Schunk & Zimmerman, 2007), as well as advancement of SRL through direct and indirect instruction will be based on different learning strategies and personal adaptation (Dignath & Büttner, 2008; Michalsky & Schechter, 2013).

The fourth SRL pedagogy suggests a synergistic integration of these three pedagogies interwoven into the theoretical contexts. This will advance SRL according to ownership of regulation (by the teacher, the student, or both in collaboration), degree of regulation, manner of regulation (demonstration, verbalization, scaffolding by way of direct or indirect verbal discourse, reduction of teacher support in discourse, and transfer of teacher self-regulation to the student), type of regulation (collaborative, constructive, transfer, self-regulated), regulation aspects (cognitive, motivational, metacognitive, behavioural, contextual) and the stage of regulation (definition of task, planning, use of strategies, monitoring, metacognition). In addition, importance is attached to the fact that the learning will take place as transactions in the context of learning. Generalization from the micro-level, the fourth SRL pedagogy presented above, to the macro-level organization of this pedagogy is suggested in the following way:

1. Definition of the **SRL theory/ies** as the context in which the pedagogy/ies is/are **contextualized**.
2. Presentation of **key components and scaffoldings**:
 - a. In the study and in **task** conditions .
 - b. In **learning environments**- Physical / Technological / Humanistic.
3. **Discourse**:
 - a. Discourse only **in instruction**- by **observation, emulation**.
 - b. **Teacher- student/s discourse or student/s discourse** -
 1. Implicit/ explicit **instruction of SRL strategies or processes**.
 2. **Co-regulation, or Shared-regulation, or Self-regulation discourse**.

This conceptualization of the fourth SRL pedagogy will also give the other SRL pedagogies possibilities to be articulated while referring to their contextualizing in theories.

6. Conclusions

This article has presented three pedagogies to promote SRL, first at the explicit level in the literature review, (Michalsky & Schechter, 2013; Dignath & Büttner, 2008). Then, a more sophisticated understanding about pedagogies to promote SRL was constructed at the implicit level. Initially, it was found that the application of a certain pedagogy in specific research that appeared in isolated cases, revealed that the first and the second SRL pedagogies in the context of socio-cognitive theory was based on laboratory research and research on intervention (Paris & Paris, 2001). Such application later took place in the form of intervention programs in classrooms (Zimmerman, 2000; Schunk & Zimmerman, 2007) – understood as the application of the **second** pedagogy of gradual SRL process of transition.

In contrast, the application of a particular pedagogy appeared initially in specific research in the context of socio-cultural theory as a description of events. At a later stage in the research, the primary application of the **first** pedagogy appeared – pre-planning and providing key elements in the task and task conditions that create opportunities for SRL were seen. In addition, reference was made to the application of the pedagogies in the context of this theory to teacher-student discourse and formulation of stages in teaching-learning processes based on observation of lessons by good teachers instructing through advancement of SRL. Derivation by conclusions and generalizations were based upon them, without formulating a clear-cut theoretical conceptualization of a pedagogy (Perry, 1998; Perry, VandeKamp, Mercer & Carla, 2002; Perry & Drummond, 2002).

In any event, a unique literature review has been created in two stages to explore the implicit level of the pedagogies that promote SRL in order to receive a deeper understanding of this theoretical research in positioning the SRL pedagogies in their theoretical context. The first stage consisted of explaining and giving examples from research studies to each pedagogy to promote SRL, separately. The second stage addressed these pedagogies in line with their theoretical context, explained the theory and its implications, and the place of the pedagogies in each one of the social theories.

In conclusion, pedagogy to promote SRL is highly complex. Since the construction of SRL and its advancement and becoming a self-regulated learner involves a multiplicity of processes and is in essence based on a reciprocity between different processes taking place simultaneously and synergistically in a

number of aspects (cognitive, metacognitive, behavioural and motivational), being more than a mere amalgamation or simple integration between its components. It appears that in order to address each component there is room for better organization that is multi-combinational, and albeit complex, easy to operate. More than anything, the most significant scaffolding proposed is **discourse**, within which the predominant process is transfer in stages from an experienced teacher who guides learning, provides direct and later indirect instruction and promotes shared self-regulated discourse on the part of the students (with/without a pedagogic instructor/ teacher) until the student attains ownership of his learning – i.e. becomes an independent learner.

The fourth pedagogy to promoting SRL suggested in this article, integrates the other three SRL pedagogies together with key components presented and constructed in the study, the task and the learning environment with scaffolding in the way of more extensive discourse, while making reference to the theoretical contexts of the two social theories based on the findings of previous research. However, further research in classroom learning environments is required as per this pedagogy in theory conceptualization according to the detailed micro-level components and the macro-level generalization.

Application to pre-service students' preparation programs can be seen in research on their training in SRL promotion in the context of socio-cultural theory according to the **first** pedagogy. Research findings show that providing tasks that include a range of techniques involving establishment of a system of scaffolding in discourse helps pre-service teachers in primary schools to develop SRL practices to promote students' SRL (Perry, Hutchinson & Thauberger, 2007). However, there is room for **shared- regulation learning** and for collaborative metacognitive processes that pre-service teachers initiate during their lessons in addition to **co-regulation learning** on their part with their students in their teaching (Perry & Rahim, 2011). Based on research findings that pointed to the considerable contribution of pre-service teachers' collaborative reflective learning discourse on developing their teaching to promote SRL (Michalsky & Schechter, 2013), it is recommended that promotion of SRL in teaching will be developed by **shared-regulation learning discourse** in groups.

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