Self-Regulated Learning: From Theory to Practice

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Abstract

While there have been many articles published in the area of self-regulated learning, there is a need to have a research article that solely emphasizes on how to put self-regulated learning theory into practice. In order to help teachers incorporate self-regulated learning theory into their classroom teaching and students to do so into their learning, the present author outlines four topics in this paper: what self-regulated learning is, the conceptual framework in self-regulation, the characteristics of self-regulated learners, and how teachers can assistant learners to put self-regulated learning into practice. There are two objectives to this article. One is to help teachers incorporate self-regulated learning theory into their classroom teaching. The other is to help students better understand what self-regulated learning theory is and how they can put it into practice daily to enhance their learning.

VanZile-Tamsen & Livingston (1999) and other researchers have demonstrated that self-regulated learning strategy use is the foundation of academic achievement. Zimmerman, Bandura & Martinez-Pons (1992) found that self-regulated learning processes were significantly related to academic success. For example, Matuga (2009) studied self-regulation, goal orientation, and academic achievement of 32 female and 8 male secondary students who involved in online university science course. The results indicated students' motivation was impacted by taking an university online class. Students who have trouble self-regulating their academic studying achieve poorly in school (Zimmerman & Martinez-Pons, 1988) and present more behaviorial problems for teachers (Brody, Stoneman, & Flor, 1996). Self-regulated learning strategy use can also explained differences between good and poor learners (Owings, Petersen, Bransford, Morris, & Sttein, 1980).

Furthermore, self-regulated learners not only can be distinguished by their positive orientation and performance, but also by their self-motivation (Zimmerman, Bandura & Martinez-Pons, 1992). Self-regulated learners try to control their behavior, motivation and affect, and cognition. They also have goals that they want to accomplish and they are in control of their actions (Pinrich, 1995). That is, self-regulated learners are those who keep up with assignments and plan ahead. Self-regulated learners make greater use of learning strategies and achieve more better than those who use little self-regulated learning strategies (Zimmeramn & Martinez-Pons, 1990). Thus, the importance of self-regulated learning strategies to academic achievement has been fairly well established. Therefore, this section of the literature review will further elucidate self-regulated learning, its theoretical framework and the characteristics of self-regulated learners.

What Self-Regulated Learning Is

Self-regulation is a difficult construct for even experts to define and operationalize (Boekaerts, Pintrich, & Zeidner, 2000). Weinstein and Mayer (1986) define learning strategy as any thought or behavior that a learner engages in (as cited in Pintrich, 1988). Zimmerman & Martine-Pons (1986) define a learning strategy as actions directed toward acquiring information or skills that involve purpose and instrumentality self-perceptions by a learner. Self-regulation is the process whereby learners systematically direct their thoughts, feelings, and actions toward the attainment of their goals (Flavell & Mille, 1998). Pintrich & Linnenbrink (2000) assert that self-regulated learning particularly concerns the model of regulation in academic learning in school or the classroom.

Pintrich (2000) defines self-regulated learning as an active, constructive process by which the learner sets goals, monitors his/her learning and controls his/her motivation, behavior and cognition. In 1986, Zimmerman refers to self-regulated learning as “the process whereby students personally activate and sustain cognition and behaviors systematically oriented toward the attainment of academic learning goals.” Zimmerman (1986 & 1989) defines self-regulated students as metacognitively, motivationally and behaviorally active participate in their own learning process. Later in 1998, Zimmerman defines self-regulated learning as “self-generated thoughts, feelings, and actions for attaining academic goals.” According to Zimmerman (1998), “academic self-regulation is not a mental ability, such as intelligence, or an academic skills, such as reading, proficiency; rather it is the self-directive process through which learners transform their mental abilities into a academics kills” (pp.1-2).

Generally, self-regulated learning is viewed as a combination of skill and will. Skills refer to students’ use of different cognitive and metacognitive strategies that include planning and

organizing for learning, goal setting, self-monitoring, self-evaluation, time management and resource-management strategies (Corno, 1986). Will refers to students' motivational orientation in terms of goals, value, and expectancies (Garcia, 1995). Thus, there are many varied definitions of self-regulated learning. These definitions are based largely on the theoretical framework of self-regulated leaning that is used.

Conceptual Frameworks in Self-Regulation

Zimmerman (1994) developed a model of conceptual dimensions of academic self-regulation. His model includes six essential questions: why, how, when, what, where and with whom. The "why" involves students' reasons and motivations for learning. The "how" involves the students' use of strategies and other process. The "when" involves time management. The "what" involves strategies students use to regulated their performance. The "where" involves the location students choose to complete their tasks and last, the "who" refers to the peers, teachers, or mentors that are instrumental in the students' learning.

According to the social cognitive view of self-regulated learning, from the time we are young, we learn new skills from watching a model learn or perform (Zimmerman, 2000). For example, Schunk & Zimmerman (1997) indicated four steps of the development of self-regulation progresses: observation, imitation, self-control, and self-regulation. The origin of self-regulation is observational learning through modeling. After acquisition of self-regulatory skills through modeling (observation), individuals try to use the skills (imitation, internalize them with self-control), and then apply the skills to similar task (self-regulation). From that point of view, Pintrich (1995) stresses the importance for faculty to model of self-regulated learning. By modeling their thoughts on disciplinary content knowledge, the learning strategies and reasoning faculty can help students to understand what is required in the course and guide them to be self-

regulated learners. In addition to that, letting students make decisions on what they will learn would also help them to develop self-regulated learning strategies (e.g., Pintrich, 1988).

Goal Orientation Theory

In order for a student to have effective self-regulation, the student must have goals and the motivation to attain them (Bandura, 1986 & Zimmerman, 1989). Goal orientation theory is concerned with the meaning of achievement to the individual (Midgley & Urdan, 2001) and is focused on the learners' purpose for achievement behavior (Salisbury-Glennon & Gorrell, 1999). There are two major kinds of goal orientations that children can have: ego-involved goals and task-involved goals. Individuals who adopt ego-involved goals seek to maximize favorable evaluations of their competence and minimize negative evaluations of competence (Pintrich & Schunk, 1996). Questions like "Is my ability adequate or inadequate?" (Dweck & Leggett, 1988), "Will I look smart?" and "Can I perform better than others?" reflect ego-involved goals. Ego involved learners demonstrate their ability based on others' ability (Nicholls, 1984).

In contrast, with task-involved goals, individuals focus on mastering tasks and increasing competence at different tasks. Students with learning goals view effort as a means for activating their ability for mastery (Dweck & Leggett, 1988) and leading to higher ability (Nicholls, 1984). Questions such as "What is the best way to increase my ability or achieve mastery?" (Dweck & Leggett, 1988), "How can I do this task?" and "What will I learn?" reflect task-involved goals. Ego-involved goals are also called performance goals, and task-involved goals are also called learning goals. With ego-involved goals, students try to outperform others, and are more likely to do tasks they know they can do. With learning goals, students will also have a large store of strategies that they can employ in different learning situations (Greene & Miller, 1996). Task-involved students tend to choose challenging tasks and are more concerned with their own

progress than with outperforming others. Self-regulated learners tend to establish mastery goals rather than performance goals and they use mastery goals to plan and manage their academic time (Ley & Young 1998).

Research shows that specific and challenging goals lead to higher levels of performance than do easy goals, or no goals (Locke & Latham, 1990). It has been found that the more difficult the goal, the better the performance, within limits. Conditions that limit these goals are: (a) the individual must have sufficient knowledge or ability to feasibly reach the goal; (b) the individual must embrace and remain committed to the goal and (c) the individual must receive feedback on his or her degree of progress toward the goal (Ridley et al., 1992).

In short, goals increase students' cognitive and affective reactions to performance outcomes because these goals specify the requirements for personal success (Bandura, 1986 & 1991). Students who have learning goals tend to deep-level cognitive strategies and self-regulated learning that may relate to achievement (Greene & Miller, 1996). They also motivated to learn because they want to understand the material. Those students desire to have competence of the information (Shannon, Missilaine, & Salisbury-Glennon, 2002). On the other hand, students have a performance goal are motivated to perform and demonstrate their ability to others (Shannon, Missilaine, & Salisbury-Glennon, 2002). In general, students with performance goals tend to use shallow-level cognitive processing that is negatively related to academic achievement (Greene & Miller, 1996). In brief, goal setting has been shown to be an important aspect of the motivation to impose effective behavioral control (Locke & Latham, 1990).

Motivation Theory

Generally speaking, self-regulated learners are intrinsically motivated. Intrinsic motivation means that students want to learn in order to achieve a specific objective. “People who are intrinsically motivated work on tasks because they find them enjoyable” (Pintrich & Schunk, 1996). It is argued that teachers can help students to acquire intrinsic motivation by relating their knowledge of their abilities, needs, and interests to meaningful goals. For example, knowing that a student is interested in the medical field and knowing the student’s ability enables a teacher to channel that interest in an appropriate direction. Although this is ideal, intrinsic motivation can be hard to pin down. Consequently, grades, prizes, and other tangible rewards are used. Since rewards and inducements are external to a student, they are characterized as extrinsic motivation. Even when using these methods, teachers should always attempts to have students’ transfer this temporary external device to intrinsic motives. Garcia & Pintrich (1996) looked at the effects of autonomy on motivation and performance in the college classroom and found that perceptions of autonomy had positive effects on intrinsic motivation too. Typically, the motivation for students to learn language is influenced by both intrinsic and extrinsic factors. A subject matter that is not of high interest and or complicated may require the use of more extrinsically oriented methods.

Self-Efficacy Theory

During the self-regulated learning process, the beliefs learners have on their ability can be referred as self-efficacy (Zimmerman, Bandura, and Martinez-Pons, 1992). According to Bandura (1986), self-efficacy is defined as “people’s judgment about their abilities to organize and execute course of action required to attain designated types of performance” (p. 391). Later, Bandura (1993) refers to self-efficacy as students’ perception of their capabilities to organize and implement actions and behaviors to attain a certain level of task performance. In other words, it

is students' beliefs about their ability to make use of skills and knowledge effectively to accomplish selected outcomes (Schunk, 1990). Efficacy beliefs influence the ways that people feel, think, behave and motivate themselves (Bandura, 1993). Self-efficacy theory suggests that a target behavior will likely be produced if students believe they are able to organize their behavior in such a way as to produce the desired outcome (Bandura, 1986).

In other words, personal accomplishments not only require skills, but the self-beliefs of efficacy to use those skills well. Consequently, two students with the same knowledge and skills may perform poorly, satisfactory, or extraordinary depending upon the fluctuations in self-efficacious thinking (Bandura, 1986 & Bandura, 1993). Therefore, unlike students with high efficacy, students with low efficacy tend to avoid complex, challenging, and difficult tasks. Those students who are assured their capabilities put more effort and persist longer in conflict with obstacles and failures (Zimmerman & Bandura, 1994). In fact, "without sufficient self-efficacy and self-regulatory capabilities, individuals will rapidly abandon the skills they have been taught when they fail to get quick results or required bothersome effort" (Bandura, 1986, p. 733).

In social learning analysis, expectations of personal efficacy are based on these sources of information: (a) performance accomplishments, which is especially influential because it is based on personal mastery experiences; (b) vicarious experience, seeing others perform threatening activities without adverse consequences can generate expectations in the observer so that they too will improve if they intensify and persist in their efforts; (c) verbal persuasion, people are led, through suggestion, into believing they can succeed in their endeavor-- expectations induced in this manner are weaker than those coping from authentic experiences; and (d) emotional arousal-

stressful and taxing situations generally bring out emotional arousal, which can affect perceived self-efficacy in coping with threatening situations (Bandura, 1977).

Self-efficacy has constantly been found to be positively related to effective use of strategies as well as academic success (Schunk, 1985). Solberg et al (1993) defined college self-efficacy as the degree of confidence that a student will successfully complete college-related tasks such as note taking, meeting class requirements, etc. Individuals with high self-efficacy expectations are more likely to attempt new behavior, such as learning new technologies and persist in them. They are also more likely to be successful, thereby increasing their self-efficacy expectation (Bandura, 1982).

Characteristics of Self-Regulated Learners

To Zimmerman (1990), self-regulated learners are task-focused, low-anxiety students who are actively and cognitively engaged in learning. Self-regulated learners seek out information when needed and take the necessary steps to master tasks. That is, when they face difficulty such as poor study conditions, confusing teachers or abstract texts, they will find a way to succeed. Self-regulated learners are interested and well prepared in the subject matter and ready with comments, questions and ideas. Self-regulated learners are also problems finders and solvers. They are not afraid to fail or to admit they do not understand (Zimmerman & Paulsen, 1995).

Self-regulated learners are those who actively participate in their learning, metcognitively, motivationally and behaviorally to achieve academic goals (Zimmerman, 1990). Self-regulated learners tend to use systematic approach when they utilize strategies for their learning (Zimmerman, 1990). Self-regulated learners know how to manage their time, study environment and their own effort well (Pintrich & Garcia, 1991). Self-regulated learners frequently plan, organize, monitor and evaluate their learning during the process (Zimmerman & Paulsen, 1995).

Self-regulated learns start with analyzing the nature of the task, and then consider available cognitive resources, based on task requirement (Ertmer & Newby, 1993). Self-regulated learners also adapt or adjust their strategy use to fit situational demands (Wolters, 1998). On the other hand, self-regulated learners are aware of their academic strengths and weaknesses and they will choose from a repertoire of strategies to solve their problems (Perry, Phillips, & Hutchinson, 2006).

In addition, in terms of behavior, self-regulated learners select structure and create a social and physical environment to optimize (Zimmerman & Martinex-Pons, 1988). Self-regulated learners are also characterized as highly motivated students because they are engaged in tasks longer than those students who don't self-regulate (Zimmerman, 1989). Self-regulated learners also monitor the cognitive processes consistently, and try to find out their obstacles. They also evaluated and revise their choices based on their self-oriented feedback, when the problems exist. They approach academic task with confidence and expectation of success because they know not only what they know and don't know, but also how to reach desired academic goals even when they feel lack of knowledge. Of course, they are motivated to learn, set realistic goals, adopts appropriate strategies, monitoring the progress, make adjustment if necessary, and evaluate their own progress against goals (Zimmerman, 1989). Self-regulated learners are also intrinsically motivated, have low-anxiety, and tend to be cognitively engaged (Pintrich & Garica, 1994). Self-regulated learners characteristically not only have effective strategies but also have the metacognitive skills of knowing when and how to apply those strategies to various learning situations.

The psychological sub-functions defined by Bandura are described by Winne (1985):

> When they begin to study, self-regulating learns set goals for extending knowledge and sustaining motivation. They are aware of what they know, what they believe, and what the differences between these kinds of information imply for approaching task. They have a grasp of their motivation, are aware of their affect, and plan how to manage the interplay between these as they engage within a task. They also deliberate about small-grain tactics and overall strategies, selecting some instead of others based on predications about how each is able to support progress toward chosen goals (p. 173).

Also, self-regulated students may be more active and interested in engaging themselves in conversation about classroom topics because they are more comfortable and knowledgably than other students (Pintrich, 1995). Furthermore, older children did not guarantee to be a better self-regulated learner than younger children. Fore example, Law, Chan, & Sachs (2008) examined beliefs about learning, self-regulated strategies and text comprehension among Chinese children, their result contrary to what they expected as Grade 5 children reporting more self-regulated strategies than Grade 6 children. Interestingly, in their study, female students tended to report using more self-regulated learning strategies than male students. To the present author, self-regulated learners are driven by intrinsic and /or extrinsic motivation to complete tasks.

Ways to Teach Students How to be Self-Regulated in Learning

Pintrich (1995) addresses that students who learn to regulate their learning will have more control in terms of balancing the academic and social demands of college life. Therefore, self-regulated learning is very applicable to college students because they possible have more control over making decisions regarding when and how much to study than high school students do. Unfortunately, many high school students are given very little preparation on how to transition well into college. In fact, students' positive and negative learning experience history will direct students' attention toward learning tasks or away from activates (Boekaerts & Cascallar, 2006). Corno (1986) pointed out that many students do not self-regulate when they could and should on

school tasks and many of them who do self-regulate are less efficient or effective than they could. Therefore, teachers who work with students more than parents or others do play important roles in teaching students how to be self-regulated in the classroom. The goal orientation theory of the teachers will make a difference no matter what students' personal goals are (Midgley & Urdan, 2001). For example, when teachers emphasize effort and learning for intrinsic reasons, students are likely to adopt personal task goals (Anderman & Anderman, 1999). Teachers with learning goal orientations will tend to use collaborative or group learning and more learner-centered approaches to instruction. On the other hand, teachers who focus on performance goal orientation will emphasize grading, academic performance and completion (Anderman & Maehr, 1994). To help students to develop self-regulated learning, teachers should strive to foster a learning goal in their classroom.

Bail, Zhang, & Tachiyama (2008) studied the effects of a self-regulated learning course on the academic performance and graduation rate of college students in an academic support program; they indicated that a single Self-Regulated Learning course can have a significant and positive effect on the graduate rate of a specific group of underprepared students. Therefore, teachers might consider open an elective class that dedicates to teach students how to be a self-regulated learner. Interestingly, in Dresel & Haugwitz (2008) designed a computer-based approach to fostering motivation and self-regulated learning, they reported that conventional, not computer-based motivational training can substantially improve students' motivation and self-regulation.

To help students to become self-regulated learners, it is important for students to be aware of their behavior, motivation and cognition. Therefore, questionnaire such as the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia &McKeachie, 1993) or

Learning and Study Strategies Inventory (LASSI) (Weinstein, Schulte & Palmer, 1987) can give students feedback on their motivation beliefs and learning strategies. Teachers can also identify what strategies would be helpful for students in the course according to the content of the course. Furthermore, Nicol & Macfarlane-Dick (2006) indicated that effective feedback will lead to learning gains. Thus, constructive feedbacks from teacher will also help substantiate students' self-regulation.

Kiewra (2002) advocated NORM (Note taking, Organizing, Relating, and Monitoring) as a mean to help students be self-regulated. Kiewra also taught students the self-testing strategy. Kiewra first asked students how much they know about the coming test content they need to prepared and studied. When most of the students believe that they know the material well, he asked students to do the practice test before the real test. Then, when the result weren't good, Kiewra said to students most of you thought you knew this information, but realized they didn't after he tested them. Then, he has taught students the great strategy of self-testing. On the other hand, what he did was to sell strategy to students. More importantly, students who self-evaluate effectively will make new goals when they have reached their goals or they may adjust their strategies of attaining the goals when they are not making appropriate progress (Horner & Shwery, 2002). After all, it is often said that "if you give a man a fish, you feed him a day, but if you teach him how to fish, you feed him for a lifetime."

In a word, self-regulated learners use cognitive (rehearsal, elaboration, organization), metacogntive (self awareness and self monitoring) and affective (self efficacy, intrinsic/extrinsic motivation, attribution and goal setting strategies that assist them in doing well academically. Self-regulated learning focuses on students' internal cognitive processes rather than external behavioral of motivation. In addition, many researches have also shown the relationship between

the academic achievement and the self-regulated learning strategy use; therefore, students should all work toward being the self-regulated learners by following the models teachers give and what they learn from the research!

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