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Understanding Self-regulated Learning and its Implications for Strategy Instruction in Language Education

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Abstract

What motivates language teachers to pursue professionalization? Using the American example of National Board certification, this study examined the strength and interrelationships of five motivational factors for foreign language teacher professionalization: improved teaching, financial gain, internal validation, external validation, and collaboration. A total of 433 foreign language teachers participated in the online survey. Repeated measures ANOVAs found improved teaching, financial gain, and internal validation were strong motivations, whereas the other two were less strong or weaker motivations. Additionally, correlational analyses showed a negative correlation between the two highest motivations, improved teaching and financial gain, indicating that they may represent two distinguishing motivational dimensions. These findings dispute teachers' supposed lack of extrinsic motivations and support a continuum of motivations for professionalization, as seen in the types of extrinsic motivations in Self-Determination Theory.

Keywords: Foreign language teachers, teacher motivation, teacher professionalization, advanced certification

1. Introduction

Educating learners with life-long learning skills, i.e. taking learning responsibility by themselves and knowing how to learn has been historically rooted in education (Keirns, 1999). To develop learners' life-long learning skills has inspired a great number of researchers and educators to investigate how a learner controls his own behaviors and thoughts during the learning process, and how school curriculum could be optimized to produce a successful learner (Wenden, 1987). In both educational psychology and language education, such extensive research effort has been made to develop students' learning how to learn capability.

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Since the 1980s, Self-Regulated Learning (SRL), which emerged in the field of health psychology and cognitive psychology (McDonough, 2001), has been embraced by a number of researchers (Zimmerman, 1989a; Boekaerts, 1997; Souvignier & Mokhlesgerami, 2006). SRL, a multidimensional construct which involves cognitive, metacognitive, motivational, environmental and social aspects of learning, has been theoretically well established. It has consistently been proved that students' self- regulation abilities in learning are crucial for their academic achievement (Zimmerman & Martinez, 1986; Zimmerman, 1989a). The potentials of SRL have led to an increasing research interest on how to integrate the teaching of SRL processes into the different areas of curriculum, and how to develop appropriate models, guidelines and instructional materials to promote students' self-regulation in learning.

The review of the relevant literature suggests that although self-regulation in academic learning has been intensively investigated outside the ESL/ EFL context, the similar terms such as, Self-Directed Language Learning (SDLL), learner autonomy, self-instruction have been gaining increasing attention in language education as well since the early 1970s (Benson & Voller, 1997; McDonough, 2001). One of the basic justifications underlying these concepts in language education is to help students learn how to learn (Benson, 1997).

Since the 1970s, with the thrust of the research findings in cognitive science, the research concern in the field of second language learning and teaching has shifted from methods of teaching to the study of how learner variety could influence the Second Language Acquisition (SLA) processes (Wenden, 1987; Schimitt, 1997). A great research interest on investigating language learning strategies was aroused. It has been strongly advocated that language learners can achieve self-direction in learning through using learning strategies by a number of researchers (Oxford, 1990; O'Malley & Chamot, 1990; Wenden, 1991; Griffiths, 2004). Moreover, a parallel interest in strategy instruction and how it could be integrated into English language curricula to develop learners' autonomy or self- regulation in learning as well as language performance has been generated (Chamot, 2005; Ernesto, 2006).

With a comparison of the research on learning strategies in Second Language Acquisition (SLA) and SRL in educational psychology areas, some researchers purport that the knowledge from these two areas can greatly benefit each other (Gao, 2007; Tseng, Dornyei, & Schmitt, 2006; McDonough, 2001). Thus, scholars suggested that future research in foreign language study can be enriched by considering the notions of self-regulated learning to fully conceptualize learner behaviors in second/ foreign language learning (McDonough, 2001; Tseng, et al., 2006). This article, therefore, argues that the teaching of individual language learning strategies will be empowered when students are engaging in strategic and self-regulated learning processes. With a review of literature on the concepts and theories of SRL and strategy interventions to promote students' self-regulation in academic settings, and studies on language learning and instruction, this article proposes a list of instructional design principles to integrate notions of SRL into language learning strategy instruction, and further presents a conceptual model on how to apply these principles into language learning strategy instruction.

2. Issues in Self-Regulated Learning

The following presents the three issues of SRL including notions and concepts of SRL, development of self-regulated learning strategies, and strategy interventions to promote SRL.

2.1. Theoretical View of Self-Regulated Learning

The concepts of self-regulation have been applied in academic learning since 1980s. SRL has been investigated through different theoretical perspectives ranging from pure behaviorism to cognitive, phenomenological and volitional view (Zimmerman, 1989b). Zimmerman (1989b) briefly reviewed six influential theoretical perspectives, namely, operant, phenomenological, social cognitive, volitional,

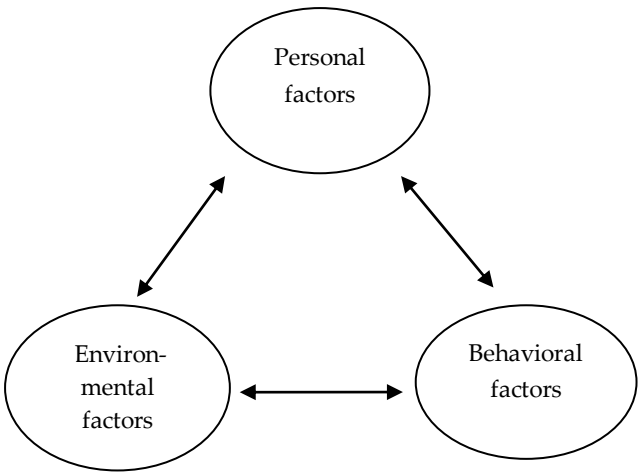
Vygotskian and cognitive constructivist view of SRL. The most theoretical view of SRL focus on three main issues, namely, metacognitive processes focusing on planning, monitoring and evaluation; motivational processes including self-efficacy and self-attribution; and behavioral processes, that is, choosing, adapting and creating the environment for learning (Zimmernam & Martinez, 1986; Zimmernam, 1989a).

In comparison with other theoretical perspectives, SRL from Social Cognitive Learning (SCL) perspective offers a more inclusive explanation of students' self-regulation in learning. SCL views learning as an interaction between personal, behavioral and environmental influences, and behavioral change as the result of the interplay between personal self-regulation and the external environmental influences (Bandura, 1986). Different from the behavioral view of SRL, which focuses on the external factors as reinforcing stimuli in self-regulation of behavior, SCL puts more emphasis on personal processes, such as self-efficacy as well as environmental influences of learning. In comparison with the pure cognitive approach, SCL links the personal processes with social and behavioral functioning (Zimmerman, 1989b) .

Bandura (1986) identified three interrelated components of self-regulation, namely, self- observation, self-judgment, and self-reaction. Self-observation refers to the students systematically self- monitoring their learning process by verbal or written reporting of their performance of a certain task; for example, recording the words they got wrong in reading (Zimmermna, 1989b). Self-observation has two important functions in the SRL process, namely, providing learners with information for setting realistic learning objectives and evaluating ongoing changes in behaviors (Bandura, 1986). Self-judgment means the process in which students systematically compare their performance with external standards or self-set learning goals; self-reaction to performance includes making changes according to self-judgment feedback, and it involves personal processes, such as goal orientations, self-efficacy, and attribution beliefs (Bandura, 1986).

Based on the social cognitive learning theory, Zimmerman (1989b, 2000) proposed a triadic view of SRL. It has been assumed that the three key processes, i.e., personal, behavioral and environmental influences reciprocally interact with each other during the self-regulated learning process, and learners who are able to exert strategic control over each influence can be considered as self-regulated in their learning. The interactive relationship between the three influences is visualized in figure 1.

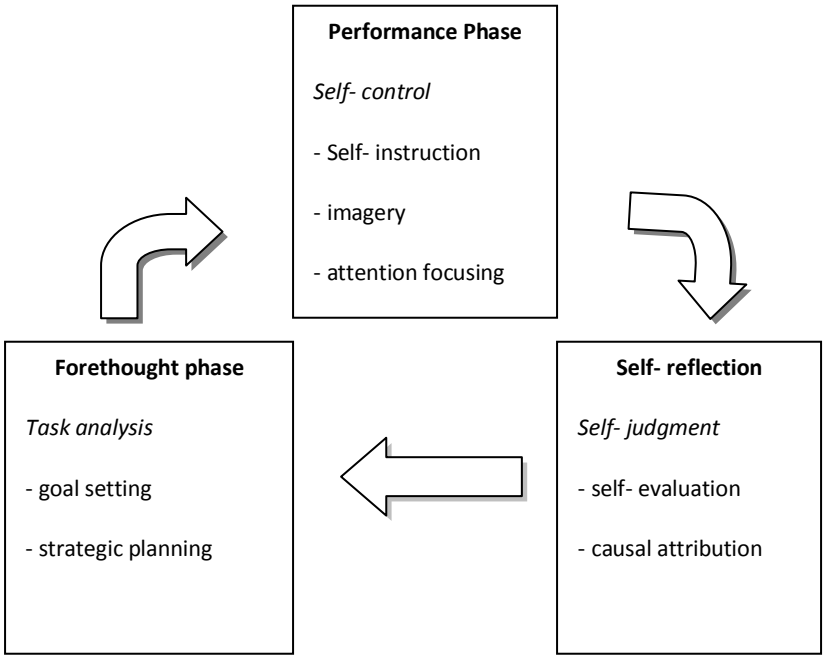
Figure 1. A triadic analysis of self-regulated functioning



Personal factor refers to beliefs and attitudes learners have in a certain learning situation, such as; self-efficacy, i.e. the degree of confidence one possesses in reaching target learning goals in a given learning situation (Bandura, 1986); behavioral factor means responses or reactions students make in a given learning situation; environmental factors, which are external as opposed to internal control of personal factors, such as, curriculum modules and materials, the role of teachers, parents, and peers during the learning process (Zimmerman, 1989a, 2000). The most important personal factor, i.e., self- efficacy plays a central role in controlling behavioral and environmental self-regulation (Zimmermam 1989a, 2000). For example, students with high self-efficacy tend to display better quality learning strategies to monitor their learning behavior and construct the learning environment. Behavioral and environmental influences in turn affect students' personal processes. For example, self-recording correct answers obtained from a test paper will certainly enhance students' self-efficacy; and the role of teacher and curriculum could provide partial support to the internal standards to facilitate the adaptive use of self-regulated learning processes (Bandura, 1986).

With regard to the issue on how these self-regulation processes are structurally and systematically interrelated with each other, Zimmerman (2000) proposes a cyclic model of SRL to categorize self-regulatory processes and personal beliefs into three phases, namely, forethought, performance, and self-reflection phase (see figure 2). During the forethought phase, which maintains task analysis and self-motivation, self-regulated learners form a full picture of the task in terms of situational factors, i.e., clarifying a task, setting goals, and planning specific strategies, and personal factors, i.e., setting up motivational beliefs about the task, such as, self-efficacy beliefs, namely, the perceived capability on finishing the task and self-expected outcomes. The second is performance phase that includes self-control and self-observation. Self-control refers to carrying out the strategies and tactics specified in the first phase by using self-control methods, such as, attention-focusing, the use of imaginary, self-instruction, and task strategies. Self-observation means self-recording events to control learning behavior or self-experimentation to find out the cause of these events. For example, students self-record the time spend on homework. The last phase is self-reflection which includes self- judgment and self-reaction during which students self-evaluate their performance against their prior performance or external standards set by others, and then reconstruct new information and make adaptive strategy changes toward their learning goals (see figure 2).

Figure 2. Phases and Subprocesses of Self-Regulated Learning (SRL)



From "Attaining self- regulation: a social cognitive perspective," by B. J. Zimmerman (2000). In Boekaerts, M., Pintrich, P. R., and Zeidner, M. (Eds). Handbook of self- regulation. Academic press.

Based on the social cognitive view of SRL, strategies for self-regulated learning should fully incorporate the three triadic influences, i.e., personal, behavioral, and environmental self-regulations so as to reach learning goals. Self-regulated learning encompasses a wide range of learning strategies ranging from cognitive, metacognitive, motivational to socio-affective aspects of learning. Zimmerman (1989a, p329) defined strategies for SRL as "actions or processes directed at acquiring information or skill that involve agency, purpose and instrumental perceptions by learners." Here, the three terms, self-control (i.e., personal agency), goal-setting (i.e., purpose) and self-efficacy (i.e., instrumental perceptions) are highlighted. To put in another way, self-regulated learners should use specified metacognitive, motivational, and behavioral strategies to achieve academic goals on the basis of their self-efficacy, namely, their perceptions of self-capabilities to perform a skill or a task.

2.2. Development of Self-Regulated Learning Strategies

Researchers (e.g., Zimmerman, 2000; Weinstein, Husman, & Dierking., 2005) have advocated that self-regulatory skills can be developed through appropriate teaching and support (Duckworth, Akerman, MacGregor, Salter, & Vorhaus, 2009). Based on the social cognitive learning perspective, Zimmerman and his colleagues identified four stages of self-regulation development, namely, observation, emulation, self-control, and self- regulation (Schunk & Zimmerman, 1997).

In the social cognitive learning view, a main source for conveying self-regulatory strategies and building up learners' self-efficacy is modelling (Schunk & Zimmerman, 1997). At the observational learning level, students attend to a model (teachers or peers) and observe and code information of the modelled behaviours. One of the important forms of observation is cognitive modelling, that is,

verbalization of mental processes and the reasons while performing a task (Schunk & Zimmerman, 1997; Zimmerman, 2000). Both teachers and peers are important sources for modelling. Teacher modelling can improve the accuracy of the learners' strategy use through verbalizing mental processes and demonstrating steps while performing a task, and reinforcing learners' learning behaviour through providing guidance and continuous feedback (Schunk & Zimmerman, 1997). Peer modelling has merit in the similarity between models and observers. As Schunk and Zimmerman (1997) argued, such perceived similarity more easily facilitates learners to adopt the desired behaviour (i.e., that results in reward) and discard the undesired one (i.e., that results in punishment). Moreover, high achievers can strengthen their knowledge and way of thinking by verbalizing their mental processes, while low achievers can learn from high achievers and benefit from this kind of cooperative learning to develop their self-regulatory skills (van Grinsven & Tillema, 2006).

At the imitation stage, learners try to emulate the general patterns and the key feature of a modelled behaviour (Schunk & Zimmerman, 1997). The critical issue, as pointed out by Ertmer and Newby (1996) is that even though learners can comprehend the learning skills and behaviour of experts (i.e., peers or teachers), it is critical to provide extended and plenty of practice for learners to apply the strategies. Thus, the third stage of self-regulation development is self-controlled practice, that is, students try to practise strategies on their own. A main characteristic of this stage is that the use of strategies becomes internalized with reference to the representational standards of the model's performance. At the final stage of self-regulation, learners are able to initiate their learning strategies and make adjustments according to changing personal and contextual conditions, and maintain motivation (Bandura, 1986).

It is evident that self-regulatory skills develop initially from socially-oriented sources to self-sources through the four stages of self-regulation development. This four-phase model for the development of self-regulation emphasizes the social resources, self-motivation and goal-directed learning practice (Zimmerman & Kitsantas, 1999). The model helps to provide guidance for teachers and parents in systematic instructional efforts to promote learners' self-regulatory capacity (Zimmerman, 2000). More scaffolding and guidance are provided in the first two stages but those are gradually withdrawn on reaching the last two stages. Several studies have applied the four stages of self-regulation development. For example, Zimmerman and Kitsantas (1997, 1999) applied the four stages of SRL as an instructional framework to teach motor skills and writing revision skills to high school students. They were guided through observation and emulation of revision skills before they engaged in self-directed learning practice. The results showed that the four-stages systematically guided the research effort to bring out the effective use of strategies.

2.3. Strategy Interventions to Promote Self-Regulated Learning

Given the importance of SRL for academic success, understanding the processes and strategies of SRL as well as investigating how to integrate SRL activities into the different areas of the curriculum to facilitate the processes of SRL have been important goals in educational research (Graham, 1997; Lindner & Harris, 1993; Montalvo & Torres, 2004; Paris & Paris, 2001).

Strategy instruction is considered as an effective means of promoting self-regulated learning and perceived efficacy (Schunk, 1989). Most of the self-regulation interventions investigate the impact of discrete SRL process on academic performance (Cleary, Platten & Nelson, 2008), such as goal-setting (Cheung, 2004; Zimmerman & Kitsantas, 1997, 1999); and self-monitoring (Lan, 1996). Some researchers investigate more comprehensive multistrategy instructional programmes which involve cognitive, metacogntive and motivational strategies to put an emphasis on both skill and will of SRL (Hofer, Yu & Pintrich, 1998; Cleary et al., 2008).

The development of self-regulatory learning skills is linked to specific learning content (Schunk & Ertmer, 2005; Zeidner, Boekaerts, & Pintrich, 2005). SRL as a framework has been applied in strategy

instruction in reading (e.g., Souvignier & Mokhlesgerami, 2006), writing (e.g., Ruya, 2006), mathematics (e.g., Perels, Dignath & Schmitz, 2009; Ramdass & Zimmerman, 2008) as well as general learning-to-learn programmes (e.g., Cleary et al., 2008; Hofer & Yu, 2003). For example, Souvignier and Mokhlesgerami (2006) applied a self-regulated learning model as a structural framework for implementing reading strategy instruction. In this study, some selected essential reading strategies were integrated into SRL components including motivational and metacognitive factors. A reading strategy instruction design with consideration of full SRL factors was compared with other types of instructions with single SRL design feature and control group with no strategy instructional treatment. The results showed that although all strategy instructional programmes had positively affected students' achievement and there was no significant difference between them, the strategy instruction that comprised all metacognitive, cognitive and motivational regulation features in its design had the strongest effects on students' performance. Weinstein et al. (2005) developed a Learning to learn program to develop the study skills of college students which was successfully conducted at the University of Texas. The course was designed based on a strategic learning model with a focus on the four components, namely, skill, will, self-regulation and learning context. A total of eight steps of strategic learning were proposed: (1) setting a goal; (2) reflecting on the task and one's personal resources; (3) developing a plan; (4) selecting potential strategies; (5) implementing strategies; (6) monitoring and formatively evaluating the strategies and one's progress; (7) modifying the strategies if necessary; and (8) summatively evaluating the outcomes to decide if this is a useful approach for future similar tasks or if it needs to be modified or discarded. The students were first introduced to the components of the strategic learning model, and various assessment instruments (e.g., reading battery, the Learning and Study Strategy Inventory) were used to assess learners' prior knowledge based on the four components of the model, as well as to raise strategy use awareness. Explicit instruction on learning strategies was then provided, and the last section emphasizes the reintegration of the components of the model. The data from pre and post assessment showed significant impact on learners' GPAs and retention, and it suggested the importance of integrating learning strategy instruction within developmental educational programmes for students facing academic failure.

With a review of interventions on strategy instruction with an aim to promote performance, self-regulation and motivation in learning, Hattie, Biggs, & Purdie (1996) reviewed 51 studies dating back to 1992 on strategy instruction and categorized them into three types, i.e., cognitive, metacognitive and motivational strategy instruction. The researchers identified a shift from the earlier interventions with a focus on direct teaching singular or sets of study skills to a range of cognitive and metacognitive procedures. The results showed that strategy training appeared more effective when (a) it focused on skills in learning specific content rather than general and all-purpose study skills; and (b) it was carried out in a metacognitive, self-regulatory context, and with support for motivational factors (Hattie et al., 1996). Zeidner et al. (2005) proposed that more research on intervention is needed on how to promote SRL skills in a specific content learning area; besides, the specific components of SRL processes and design guidelines for intervention should be specified, and more research on SRL in different learning content areas should be conducted.

3. Language Learning Strategies in Second Language Acquisition

The importance of language learning strategies in second language acquisition has been emphasized since 1970s (Wenden, 1987; O'Malley & Chamot, 1990). The following presents concepts and current trends of language learning strategy instruction.

3.1. Concepts of Language Learning Strategies

The theoretical assumptions underlying LLS acquisition is that learner differences at least partly were attributed to various strategies used by students toward the learning tasks. From this perspective, LLS was regarded as a cognitive process through which students could be able to consciously influence their own learning (Griffiths, 2004). O'Malley and Chamot (1990, p.1) identified learning strategies as "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information". Language learning strategies are generally classified as four main categories, i.e., metacognitive strategies, cognitive strategies, and social and affective strategies. Cognitive strategies involve those strategies used to manipulate information to improve learning, such as, rehearsal, organization, and summarizing strategies etc (O'Malley & Chamot, 1990; Chamot & O'Malley, 1994). Metacognitive strategies involve strategies for regulating, directing, monitoring and evaluating one's language learning (O'Malley & Chamot, 1990); social and affective strategies are related to interaction with another person or emotional control (O'Malley & Chamot, 1990).

In comparison with the concepts of the language learning strategies, self-regulation puts emphasis on "learners' own strategic efforts to manage their own achievement through specific beliefs and processes" (Zimmerman & Risemberg, 1997, p105) rather than the individual strategies. The definition of self-regulated learning is more comprehensive and dynamic in nature. Self-regulated learning has been identified as a self-directed learning process, which cover a wide range of learning behaviors ranging from cognitive, metacognitive, motivational, perceptual and environmental components of learning (Lindner & Harris, 1993; Zimmerman, 1998), and learning strategies are considered as one integral component of SRL (McDonough, 2001; Zimmerman, 2001; Tseng, et al, 2006).

Zimmerman, Bonner, and Kovach (1996) pose that learning strategies can be taught to students with different levels, but its effectiveness depends on whether they are integrated within a larger framework of self-regulated learning processes. To put in another way, students should be able to manage their learning process through which the learning strategies will be selected, self-monitored and self- evaluated. Tseng et al (2006) also note that it is not the quantity of strategies students use that makes them strategic and self-directed in learning but their capacity in self-regulating the learning processes. Therefore, in order to develop the strategic learning among second/ foreign language learners, it has been claimed that the research area of language learning strategies should have a shift from the focus of "product", i.e. the specific individual techniques applied during learning, to the "self- regulatory processes" (Weinstein, Husman, & Dierking, 2000; Tseng, et al., 2006).

3.2. Strategy Instruction in Language Learning

The exploration of strategies used by successful language learners provides a research incentive for language learning strategy instruction to improve learners' language proficiency (Wenden, 1991, 1998). So far, a number of studies have been carried to apply strategies in the classroom setting and to investigate their effects on learners' language performance in listening, speaking, reading, writing and vocabulary development. Research evidence shows the positive effects of strategy use on language learning performance (Chamot, 2005; O'Malley & Chamot, 1990).

At the same time, with a growing research interest in learner autonomy and independent learning in the field of language education (Benson & Voller, 1997), researchers (Wenden, 1998; 2002) have advocated and explored ways to empower students to be self-directed, effective and strategic in language learning through strategy instruction (Wenden, 2002; Cohen, Weaver, & Li, 1996). Thus, the primary aim of strategy instruction is to enable learners to take charge of their own learning, i.e., autonomy, self-regulation or self-direction in learning and to enhance the language competency of learners, especially the less successful ones (Benson 2001; Chamot, Barnhardt, El-Dinary, & Robbins, 1999; Cohen, 1998; Ellis &

Sinclair, 1989; Oxford, 1990; Wenden, 1998).

However, several researchers (e.g., Benson, 2001) argued that although research evidence shows the positive effects of explicit strategy instruction on learners' language performance, it cannot be guaranteed that such explicit strategy instruction can enhance learners' self-regulation or autonomy in language learning because learners might lack metacognitive awareness and control in learning content (Benson, 2001). Thus, many researchers (Benson, 2001; Chamot et al., 1999; Wenden, 2002) have argued for developing learners' metacognitive awareness and their capability in regulating their thinking and learning behaviours in language learning strategy instruction. A general consensus on strategy-based instruction shows that explicit development of metacognitive and cognitive strategies is considered essential to enhance learners' self-regulation and performance (Chamot et al., 1999; Hassan, Macaro, Mason, Nye, Smith, & Vanderplank, 2005; O' Malley & Chamot, 1990; Rubin, Chamot, Harris, Anderson, 2007; Wenden, 1998).

The role of metacognition and strategy use has been emphasized in language learning strategy instruction. For example, Tang and Moore (1992) conducted two studies to investigate the effects of cognitive strategy activities on the reading comprehension of three adult ESL learners, and the effects of cognitive and metacognitive strategies on reading comprehension of five adult ESL learners. The results showed that similar enhanced comprehension was found in both studies, but enhanced maintenance of strategy use was found only in the metacognitive strategy instruction.

Tan and Bromeley (2006) investigated the effects of metacognitive reading strategy instruction with a group of 45 undergraduates attending an English academic reading course in a public university in Malaysia. A strategic processing framework entitled 'Self-regulated Learning Approach to Strategic Learning' was used to apply the strategies to construct meaning from reading. It comprises macro metacognitive strategies for monitoring and regulation of strategy use, namely planning, comprehension monitoring, problem solving, evaluating and modifying. Each macro strategy consists of sub strategies for academic reading. Explicit teaching of macro strategies, and declarative, procedural and conditional knowledge of strategy use were provided. Qualitative data was collected from retrospective written recall protocol on the students' strategy use, and it showed an increased sense of awareness of strategy use. Besides, it appears that both high proficiency and low proficiency learners benefited from metacognitive strategy instruction. It offers empirical support that metacognitive strategy instruction provides not only knowledge of strategy use but capacity to self-assess, and to select and implement appropriate learning strategies.

Moreover, a meta-analysis conducted by Hassan et al. (2005) on 38 studies on strategy instruction in language learning since the 1980s found that 24 out of those studies on strategy instruction focused on cognitive learning strategies, 8 studies focused on metacognitive strategy instruction, and the rest were in a mixed strategy instructional mode. Metacognitive aspects have been given less attention compared to cognitive aspects of language learning strategy instruction. Thus, more research is needed to investigate the combined role of cognitive and metacognitive strategies to prepare learners to be self-directed and effective language learners.

Besides, the positive correlation between motivation and learning strategies has been emphasized in second language acquisition (Dörnyei, & Skehan, 2003; Rivera-Mills & Plonsky, 2007). Consistent research evidence indicates that the more students are motivated, the more learning strategies they use (Rivera-Mills & Plonsky, 2007). Nunan (1997) carried out strategy instruction with 60 first-year undergraduate students at the University of Hong Kong. The students were randomly assigned to a control and an experimental group. The results indicated that the experimental group significantly outperformed the control group in terms of motivation, knowledge of strategies and perceived utility of strategies. He claimed that students' motivation increased as the result of learning strategy instruction. However, this causal relationship has been questioned by Rivera-Mills and Plonsky (2007).

4. Implications of SRL on Language Learning Strategy Instruction

The identification of strategy use of successful language learners compared with their less successful counterparts has inspired many researchers and educators to seek ways to integrate LLS into English language curriculum and syllabus to enhance learners' independence and performance of language learning (Chamot, 2005). Several researchers have identified that the distinction between successful and less successful learners lies in lack of metacognitive strategy awareness and inappropriate strategy use (Chamot, 2005; Hunt & Beglar, 2005). Thus, both metacognive and cognitive strategy use play a key role in preparing independent and strategic language learners. Strategy instruction should give emphasis on the combined role of cognitive and metacognitive strategies so as to ensure the active role of the learner during the learning process (Chamot, 2005; Hunt & Beglar, 2005; Najar, 1999).

In terms of the role of metacognitve knowledge in SRL, O'Malley and Chamot (1990) identify metacognitive functioning as self-regulation, which emphasizes knowledge state and metacognitve (executive) control of cognitive strategies, such as, when and how to choose cognitive strategies to perform a learning task. Najar (1999) also highlighted the central role of the metacognitive knowledge that produces SRL because learners use metacognitive knowledge to develop and apply learning strategies, and monitor and control the learning process.

However, in contrast to metacognitive view of self-regulation, the triadic view of self- regulated learning from social cognitive perspective as proposed by Zimmerman (1989a) claims that self-regulation results in an interrelationship between personal, behavioral and environmental influences (Bandura, 1986, Zimmerman, 1989a). It refers to "self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals" (Zimmerman, 2000, p14) other than single metacognitive state or knowledge (Zimmerman, 2000). According to this definition, both action and covert processes, which involve all cognitive, metacognitive and motivational aspects of learning explain how and why learners could self-regulate their learning performance. Thus, distinct from metacognitve view, self-regulation from social cognitive learning perspective puts emphasis on personal agency, i.e., personal beliefs, attitude, and motives towards learning. Thus, except considerations on metacognitive control and specific cognitive strategy instruction, motivational factors should be considered in strategy instructional design. For example, students should be aware of their motivational beliefs in learning a task, such as, self-efficacy; they assess their level of confidence in completing a task; they should be trained to link their academic performance to their strategic efforts, and set learning goals which focus on the learning strategy use and processes other than single product.

Hence, based on the principles of SRL from Social Cognitive Learning (SCL) theory, there are two main aspects of SRL from the SCL perspective addressed in the design of the instruction, that is, self-efficacy and self-regulatory strategies. The following are the principles related to the six components of SRL processes (i.e., goal-setting, strategic planning, self-monitoring, self-evaluation, self-reflection and self-efficacy) to guide the design of the strategy instruction.

- **Integration of SRL processes with the learning content.** Self-regulatory development is domain specific (Schunk & Zimmerman, 1997). Thus, the cycle of SRL processes should be integrated with subject content. In the context of second language learning, self-regulatory strategies should be taught as part of the academic content so that learners know how to apply them in the learning context (Schunk & Ertmer, 2005).
- **Provision of explicit instruction on task-based learning strategies.** Learners should acquire a variety of strategies that they can use to handle a learning task so that they can select strategies that they believe are effective in performing a task (Paris & Paris, 2001).
- **Deliberate effort on enhancing and promoting learners' metacognitive awareness in planning, monitoring and evaluation of strategy use.** Metacognition plays a key role in promoting learners'

self-regulation in learning. Metacognitive awareness and metacognitive strategy use refer to the notion that strategies should be planned, monitored, self-evaluated and self-controlled (Pintrich, 2002). The cycle of SRL processes (i.e., goal setting and planning, self-monitoring, self-evaluation and self-reflection) can be applied as a structural framework for implementing language learning strategies in order to promote learners' metacognitive awareness and strategy use.

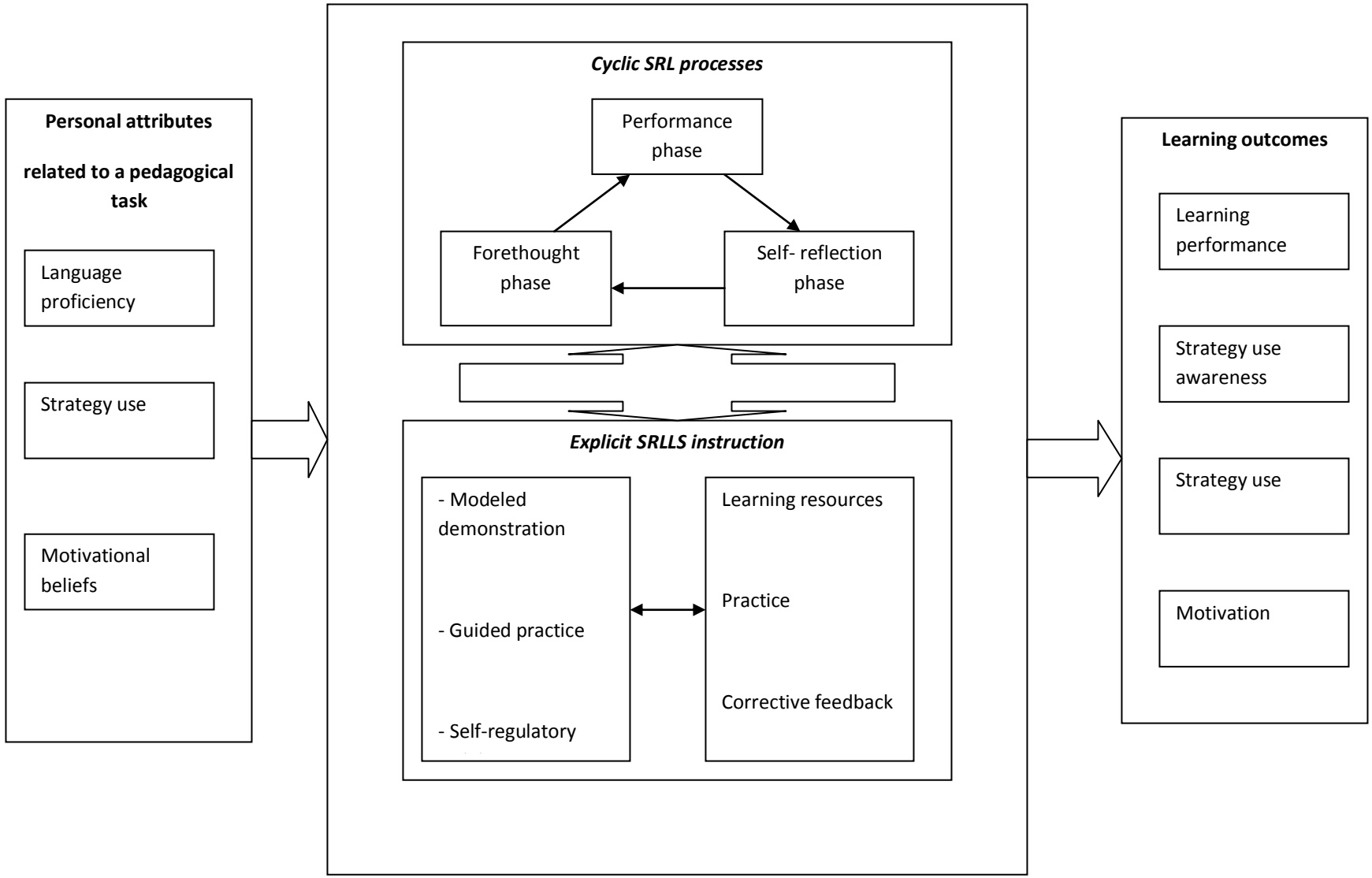
- **Emphasis on enhancing self-efficacy throughout instruction.** Across different models of self-regulated learning, the interdependent influences between cognitive and motivational factors are emphasized (Hofer et al, 1998; Schunk & Ertmer, 2005). Considering the crucial role of self-efficacy in developing self- regulatory strategies, elements of instructional design for enhancing learners' self-efficacy can be strengthened in the following ways: modelling of strategy use, goal setting, providing strategy value information, attribution of strategy use to performance and providing feedback on strategy use effectiveness.
- **Modelling of strategy use through think aloud method.** Social modelling has been a primary means to convey self-regulatory strategies and to encourage learners to self-construct strategies. In the initial stage of strategy instruction, it is critical to provide learners with strategies through cognitive modeling, i.e., verbalization of mental processes, especially for those with a limited repertoire of strategies (Schunk & Ertmer, 2005).
- **Provision of guided practice for learners to practise cognitive and metacognitive strategies.** As in learning other skills, learners need to practise self-regulatory strategies (e.g., cognitive and metacognitive learning strategies) continuously to internalize strategy use and finally automatizing the strategy use in their learning.
- **Adequate opportunities for independent practice**. It is essential to provide learners with opportunities to use strategies independently so as to enhance their self-efficacy and confidence.
- **Continuous feedback and scaffolding while students learn the strategies**. It is crucial to provide scaffolding and continuous feedback on strategy use and performance. This enhances students' self-efficacy and motivates them to continue using the strategies (Schunk & Ertmer, 2005).
- **Constant practice of self-reflection**. Self-reflection is a critical element for developing learners' self-regulatory abilities (Schunk & Ertmer, 2005). It is important to give learners opportunities to evaluate the effectiveness of strategy use and their learning performance. Besides, self-reflective practices enable learners to evaluate their progress toward learning goals (Schunk & Ertmer, 2005).

With reference to the nine instructional design principles, the following presents a practical example of a conceptual model (see figure 3) which seeks to integrate the teaching of language learning strategy within the cyclic SRL processes. Grounded in the three cyclic SRL phases, that is, forethought, performance and self-reflection phase, which provide an organizing framework for language learning strategies, the following self-regulation processes and strategies were identified: motivational factors including self-efficacy, attribution beliefs and goal-setting, metacognitive factors, i.e., self-planning, self-monitoring, self-evaluation and cognitive factors, i.e., selected essential cognitive learning strategies. The selected strategies are organized into three SRL processes, that is, task analysis including goal- setting and strategic planning; performance phase including strategy selection, strategy implementation and monitoring; and self-reflection including self-valuation of strategy use and performance, and self-reaction.

During the first stage, students first self-evaluate their current knowledge, strategy use, and self-efficacy on learning a task through using strategy inventory questionnaire and self-test materials, and observation. Then, following the three cyclic SRL processes, that is, forethought, performance, and self-reflection phases, teacher provides explicit instruction on goal-setting and strategic planning, students set

specific learning goals based on the requirements of a learning task and select appropriate strategies and set up a plan to reach the learning goal. During strategy implementation and monitoring, students implement strategies in structured contexts while observing and monitoring their strategy use and learning progress. During the final stage, students should reflect on the process and strategies used during SRL and be aware of the effectiveness of learning performance which is linked to the self-regulatory strategy use. Besides, the explicit classroom instruction on learning strategies within the cyclic SRL processes should be presented to students, which are followed by controlled practice of strategy use. Within teachers' scaffolding instruction, students repeatedly practice SRL strategies outside of the class, and gradually reach the level of using strategies in a strategic and independent way.

Figure 3. A proposed conceptual model for self- regulated language learning strategy instruction



5. Conclusion

Given the importance of SRL for academic success, understanding the behaviour and processes of SRL as well as integrating SRL activities into the different areas of curriculum should be a direction for the future research and instructional design (Lindner & Harris, 1993). This article attempts to embed the cyclic SRL processes into language learning strategy instruction. The underlying theoretical assumption is that the teaching of individual strategy will be empowered when students are engaged in the cyclic SRL processes, and the focus of strategy instruction should have a shift from teaching of individual strategies to the strategic learning processes. Future research is needed to investigate the effectiveness of learning strategy instruction embedded within the cyclic SRL processes on students' strategy use and language performance through classroom intervention.

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