Changing Models for Strategies in Second Language Study

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Introduction

Strategies in one form or another have been salient in second language study for the last 30, or so years. No one can dispute the importance of strategies to the field of second language study, but since serious work began on strategies there has been confusion, and a lack of depth of understanding in the models that have incorporated strategies. Such models have tended to equate to distinct periods of intensive research in second language, where scholars sought to gain a deeper understanding of a particular model for strategies. This paper will address various models that have attempted to incorporate strategies, including the original theories, as well as, a move into building taxonomies, followed by the factors that affect strategy use, and one teaching model. In the last section, I will discuss the role of strategies in psychology, leading towards a possible future model for strategies.

Building the Theory behind Strategies

In all classes there are students who perform well and those who do not. One of the first ways of addressing a model of strategies was related to identifying how those learners who perform well go about the task of performing well. In other words what separates good learners from bad learners. In second language one of the first major studies of how effective learners addressed the task of learning was by Naiman, Frolich, Stern & Todesco, (1978). This study made the claim that language learning could be greatly improved if there was a better understanding of the language learning process itself. This included studying why some students fail and some were successful. The study found that good learners use a number of strategies to help them learn better.

Around this time other similar studies (Rubin, 1975, 1981; Stern 1975; Hosenfeld, 1976) had started to compile and categorize a list of strategies that learners use to make them more effective in class, and to lead to the goal of autonomous learning. This work identified that good students' learning is a conscious effort to undertake study. At that time cognitive and metacognitive variables were thought to account for differences between good and bad learners. Cognitive variables were seen as direct analysis and manipulation of language input by such methods as repetition of a word or inferring of unknown items. Metacognitive strategies, on the other hand, were seen as actions that had an executive function, which involved planning, for

example, monitoring and evaluating the success of a learning task. Examples from the studies include self-management, which is an awareness of the conditions that promote learning and self-evaluation, or the ability to assess one's linguistic and communicative competence. There was one more class of strategies that could be added to cognitive and metacognitive strategies, those being social and affective strategies (Oxford, 1990; O'Malley & Chamot, 1990). This group of strategies was concerned with interaction with other learners and native speakers, and management of the affective demands made by language learning. An example could be questioning for clarification or self-talk to encourage oneself.

Although the earlier studies of good and bad learners were founded on long hours of looking at student behaviours in the class, using different methods (journals, observation, self-reflection), they were in essence lists of behaviours in the classroom. They did characterize successful or unsuccessful learning, but lacked a coherent model combining the ideas of cognitive, metacognitive and social/affective strategies. Since that time a number of models have tried to combine the separate forms of individual strategies into taxonomies (Wenden & Rubin, 1987; O'Malley & Chamot, 1990; Oxford, 1990; Stern, 1992) with different strategies grouped and classified into coherent subcategories. Along with the three subcategories of cognitive, metacognitive and social affective, all of these taxonomies recognized direct and indirect strategies. Direct strategies were those that contributed directly to learning, including those related to memory and cognitive strategies; and indirect were those strategies that affected learning indirectly, such as communication/social (asking for help), and metacognitive strategies. The jump from lists to a cohesive model would require not only student performance and attitude assessment, but also a theory to go along with the taxonomy to give it a solid grounding and credibility. As two examples of how these taxonomies dealt with the theory side, I shall offer a quick overview of Oxford, (1990), and Chamot & O'Malley, (1990). The first taxonomy by Oxford, the S.I.L.L. (Strategy Inventory for Language Learning), defined strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (Oxford, 1990 p. 8). The goals of this model were to use strategies to foster autonomy and improve learning and acquisition in the four skill areas (speaking, listening, reading and writing), based on a model of communicative competence by Canale & Swain (1980). The strategies in the Oxford model were a way for learners to achieve the goal of communicative competence (in the Canale and Swain model; including grammatical competence, discourse competence, sociolingistic competence and strategic competence). Examples cited were aspects of cognitive and memory strategies to enhance grammatical competence, and compensation strategies, like guessing words from context, to develop strategic competence.

Along with the Oxford model, another model that tried to employ theory to a

taxonomy was the O'Malley and Chamot model. As far as describing strategies, this model was similar to the Oxford model, with one exception being that in the O'Malley and Chamot model social affective strategies had been put under one sub-category, whereas in the Oxford model these two were separated. The theory behind the O'Malley and Chamot model, however, was very different, with these authors attempting to draw ideas from cognitive science to explain their model. This model moved into a process view of second language learning, trying to understand the processes that lie behind the surface manifestations of strategies. Defining strategies as "special thoughts or behaviours that individuals use to help them comprehend, learn, or retain new information", this taxonomy drew predominantly from psychology work involving how knowledge is represented in the brain (Andersen, 1983, 1985). The O'Malley and Chamot model recognized two forms of cognitive structures, declarative knowledge and procedural knowledge. Declarative knowledge is stored in memory as propositions and schemata, both of which are static factual and experientially based for example interlanguage rule knowledge or rules for pragmatics etc.. Procedural knowledge, on the other hand, underlies the execution of all complex cognitive skills (including language), and is represented internally as production systems, which are chains of condition-action connections that initiate the cognitive skills. Strategies, themselves, can also be viewed as declarative knowledge. Knowledge (declarative) can be transformed into a skill (procedural) by passing through three distinct stages. In the first stage conscious activity on part of learner is needed as knowledge alone is not enough to perform skill. Next, comes the associative stage, where the skill starts to develop, and moves, finally, into the last stage where production of the skill becomes automatic, with little attention required to perform that particular skill. In other words various forms of strategies help to transform what learners know about language into action, which they can transfer into new learning situations.

Problems with the early models

Although the early strategy lists, and later the taxonomies that followed, suggested ways that learners could take responsibility to improve their learning and become autonomous, there were some problems, namely the vagueness of the descriptions, and issues of reliability, and the theory itself. Firstly, in the Oxford model a number of inconsistencies appear in the categories. As with other models, there were two main headings of direct and indirect strategies, but in the cognitive subcategory strategies of "repeating" and "practicing" are cited, and as Ellis (1994) pointed out, it is unclear which strategies are for direct learning of the L2 and, which are merely for using it. Furthermore, the compensation strategies in the Oxford model were classified as a learning strategy, but these are to help situations where a word is not known. It is difficult to see how guessing a word in context is a way of learning. It

is more like a language resource to negotiate trouble in the L2. Also, in the models the use of the word strategy implies a goal for language learning, but as Dornyei (2005) explains that students can engage in study that is strategic, but not in the sense of purposeful language learning, with examples of learning to impress one's boyfriend or girlfriend. Indeed depending on the goals and the context of learning, learning could be for communication, learning, or to keep your partner happy.

The next problem comes in the reliability of the model, or as reported, the internal consistency, of which the research community takes a great deal of notice to add credibility to reported results. The S.I.L.L. contains 50 general statements about learning, which correspond roughly to the strategies in the model. So popular is the S.I.L.L that it has become significant in not only second language journals, but also used as part of Doctorial dissertations. Studies in EFL countries have reported Cronbach Alpha (α) scores of over .90. For instance in Oxford (1996) the following three studies with their α score were reported: .92 α in Japan (Watanabe, 1990); .91 α in Korea (Oh, 1992); and .91 α Spanish speakers in Peurto Rico (Park, 1994). A potential problem comes from the fact all these results relied on self-report, which is prone to some reliability problems as students report on their own behaviour. Questionnaires in second language studies have produced some results that were difficult to interpret (Politzer & McGroarty, 1985), because the ways that students reported may have been different from what they actually did, and perhaps, more importantly, as with most studies in second language acquisition, the studies were cross-sectional, and not longitudinal in nature. Reliability problems also arose in the fact that the S.I.L.L. lumps all the subcategories together, and reports the alpha score as an overall score. The problem with doing this is that a high reliability only means that students who rate themselves highly on one strategy use, tend to do so for other strategies. This grouping together also implies that the strategies subcategories are equal in importance compared to each other, but it is clear that to some extent that metacognitive strategies control and initiate other strategies such as cognitive and affective as they are the executive process that plan and oversea such strategies. Indeed, a study by Robson & Midorikawa (2001) claimed that a high internal reliability may not actually be a good thing because the subcategories have very low reliability by themselves, bringing into question how Oxford thinks these were measuring students, and, in reality, how they were actually measuring students may have be very different.

Finally in both models it is unclear exactly how the taxonomies are related to the theories. It is clear that strategies can certainly help with communicative competence. Also, the automaticity of skills will provide more precious processing space in the short term-memory for metacognition, or other cognitive processes. However, these models don't explain how or why the students may use a strategy, other than for communicative competence or to help processing of information. This

problem is, again, related to such ideas as goals, which are missing from both models.

In conclusion, language taxonomies have provided a broad description of how learners can improve their learning. Although based upon a lot of empirical research, they were not fully coherent models, because they displayed some unclear areas and problematic areas. These include the groups of subcategories in the taxonomies, leading to reliability issues. There were also important elements missing from the models, among them goals, to fully describe how learners go about the job of learning.

Factors affecting Strategy Use

Now that the field had a fairly good description of strategies, the next step was to try and find out what factors influence strategy use among students. This was an attempt to move the field of strategy research into realms of other fields of both language acquisition, and psychology. Still a prevalent part of this correlation work was the old principle that originally founded the strategies, namely, studies of proficient learners. In the next section I shall cover four main areas that these studies took on, those of strategy use compared to beliefs, proficiency, task, and motivation and anxiety.

Firstly, beliefs about language learning. For this area a famous example is the B.A.L.L.I. (Beliefs About Language Learning Inventory), (Horowitz, 1987) This study looked at how students perceive the task of learning, and found that bad beliefs lead to wrong strategies being used by students. This makes sense as past experience would be a good predictor of how students use strategies. Incorrect beliefs from, perhaps, previous use, would tend to lead to continued misuse in the future, unless those beliefs could be changed.

Many studies have found there is a considerable link between strategy use and proficiency (Mullins, 1992; Watanabe, 1990), in studies in south East Asia using the SILL. Critics of these studies, in particular, LoCastro (1994), questioned both the reliability and validity of the questionnaires, saying that the research on the S.I.L.L. had been carried out in ESL programs in North America, but these results should not be universally applied, to all learning situations, regardless of EFL or ESL. Locastro claimed the S.I.L.L. questionnaire summarized group information, but could not provide deeper information on individual strategy use. Without ethnography, LoCastro stated, authors should not make the claim of a description of universal strategy use.

The third factor, tasks, has been used to give more validity to strategy assessment instruments. Originally strategies only measured general strategy use, but without applying strategies to any task, there was no way of knowing what type of experience of tasks the students had had before filling in the questionnaire. Cohen (1998), claimed that students answer a questionnaire less accurately without recourse

to a particular task because of memory problems. Students could well be thinking of an easy or particularly difficult task, depending on their own sphere of experience, which will again change on the number of experiences that a student has had with a particular task. Due to the lack of task content writers, again, like Ozeki (2000), have tried to link the theory in task based teaching to learning strategies, claiming that they can help memory. Another study by Oxford, Cho, Leung, & Kim (2004) used a self report reading strategy questionnaire and found that task difficulty greatly affected strategy use. Interestingly, this study found that lower proficiency students used a lot more strategies than higher levels, a finding also corroborated by Graham (2004), especially translation into the L2. Successful learners on the other hand could be using a collection of strategies in what Oxford (2000) called, a strategy chain. These are a set of successful strategies that come together to complete a particular task. These last two studies have a lot to say, but little had been reported for reliability and validity of the studies. Task based literature, like strategies, has been vast, and both offer great potential as contributions to the knowledge of the learning situation, but the situation is complicated because of the number of variables affecting tasks, including goals, input, setting, skills area, complexity, amount of planning etc... (Oxford, Cho, Leung, & Kim (2004) pp. 9-15).

After tasks come two very popular areas of second language study, taken from the field of psychology, motivation and anxiety. One study by Oxford & Nykos (1989) found that motivation was a very powerful determinant of strategy use in an ESL environment, which was especially so for instrumental motivation that manifested itself in requirements like obtaining good grades in classes. A more recent study by Schmidt & Watanabe (2001) found that there was a strong relationship between cognition and metacognition, motivation and strategy use. Anxiety can also affect how strategies are used by learners. One study by Brown, Robson & Rosenkjar (2001), found that motivation could be correlated for lower level learners with managing mentions, equating to anxiety, on the SILL taxonomy.

In conclusion, the above studies have attempted to correlate language strategy use with different factors, but a coherent model was still lacking. An analogy of a car may help to explain the situation. The taxonomies were the bare body shell of a car, with the theory being the engine that drives such a car. In the early taxonomies the engine was found to be faulty, and these correlation studies have done little to change the engine. They have, however, made the outside of the car look a lot prettier. After a lack of theory, comes the issue of the recognition of the importance of motivation to strategy choice, but as Dornyei (2005), points out strategies are motivated by goals, so there would naturally be a relationship between motivation and subsequent strategy use. Furthermore, as in the early models, the lack of longitudinal studies also brings into question validity and reliability of these studies. Factor studies, however, started to help make it clear that strategies alone as a

discipline cannot help researchers or teachers: there was a bigger picture to the model that could include all of the factors mentioned above.

Teaching models

Along with the work of providing information about the type of variables that affect strategy, a large body of work went about the task of applying these strategies in real use in the classroom, and helping less able learners become better learners. This gave birth to models that dealt specifically with teaching strategies. Through a variety of different data collection techniques, ranging from questionnaires to other self-report methods, and even onto observation, the work that went on inside the classroom could be changed into models that can help teachers to use strategies. One model by Chamot, Barnhardt, El-Dinary & Robbins (1999), is called the Cognitive Academic Language Learning Approach (C.A.L.L.A.). This model started to include a broader range of disciplines from psychology, including self-regulated learning, or the combination of motivation and cognitive learning and the affect of this mix on strategy use. Strategies are explicitly taught as part of the language curriculum, and include the following steps:

1) develop awareness
2) model strategy
3) identify start by name
4) practice
5) self-evaluate

The authors claim that: "When teachers teach learning strategies, it is critical that they develop student motivation to sue the strategies...Several critical components play a role in student motivation, including how much students value the task (value), how much they expect to succeed in the domain (expectancy), how much they believe they can process what it takes to succeed at the task (self-efficacy), and what factors they believe are responsible for success or failure at the task (attributions)" (Chamot, et.al. (1999, p. 176)).

The realization that just strategies by themselves are not enough to explain any model of learning involving strategies is an important one, along with ideas from psychology, the combination of these elements mentioned. However, the model is not presented well in this work, and no theoretical model is offered as to how these elements combine with one another.

Models like this one are a lot closer to describing strategies in language learning, by continuing to borrow from cognitive psychology, and the number of studies that have tried to employ models like the C.A.L.L.A., have furthered what is known about strategy use in the four-skill and vocabulary learning areas of second language through, among other things, a necessity for students to reflect on what how they have learned. Inspite of this, studies have shown that teaching students the strategies

used by good students, which was the base of this teaching model, may not work. In fact, bad students have been shown to use similar strategies to good students (Vann & Abraham, 1990), but "...other reasons cause them to be unsuccessful", (p. 76). Others reason in this case were metacognitive strategies. It is not a question of good or bad learners, it is a question of whether the learner is strategic, because it is not the strategies that the learners applies, but the fact that they do apply them that is important, (Dornyei, 2005). Therefore, the link between strategy use and proficiency is not clear, and again, the lack of clear concise theory behind the model for teaching strategies may bring reliability and validity into question.

Strategy work in Psychology

Just as second language studies has had a history of strategy research, so has psychology, especially in the field of general education. In this next section, I will provide a brief summary of how the field of psychology has dealt with the issue of strategies in terms of definitions, a strategy model, and teaching models. Firstly, similar to the field of second language, researchers defined strategies as "thoughts, behaviours, beliefs or emotions that facilitate the acquisition, understanding, or later transfer of new knowledge or skills", (Weinstein, Husman & Dierking, 1999, p. 727). A later definition of strategies by Williams and Burden (2005), called them "mental processes directly concerned with the processing of information in order to learn, that is for obtaining, storage or use of information" (p. 148). The first definition is more comprehensive and covers an important element in psychology studies, that of transferring strategies to new situations. There is also recognition of the importance of metacognitive strategies being the central process by which strategies can be employed. One definition of metacognition by Brown (1987), called it "planning for learning, thinking about learning process as it is taking place, monitoring of one's production or comprehension, and evaluating learning after an activity is completed" (p. 94). Similarities in the view of metacognition to second language was mainly as a result of Flavell (1979), who influenced second language researchers in the 80s. Flavell recognized different elements of metacognition, namely metacognitive knowledge and skills.

Metacognitive knowledge has three main categories: knowledge of the person, including everything one comes to know or believe about oneself, which in turn comprises of intra-individual, or the attributes of self as a learner; inter-individual, how learners see themselves in comparison to other learners; and universals of cognition, what a learner knows about the self or others that can be generalizable to a general set of laws of learning. After person, comes task knowledge, including knowledge of when deliberate learning is necessary, demands of task, (what is difficult, or not), knowledge about information involved in cognitive enterprise; and finally knowledge about which strategies can be applied to which situations, and

general principles that may affect subsequent strategy use, such as knowing the importance of learning from mistakes.

Along with knowledge come metacognitive skills which, through on-task insight, regulate and update the knowledge that is stored as representations in the mind. The regulatory skills include pre-planning and planning in action. Brown, Bransford, Ferrara, & Campione (1982), state that these two skills make up the executive system with pre-planning involving setting objectives, selection of methods, assessing proficiency, and predicting difficulties; and planning in action involves monitoring, evaluating and revising plans. The Flavell model also included a section stating that knowledge or skills alone may not automatically lead to an appropriate problem-solving behaviour. For instance, a student may know that making a summary of a complex text is necessary and yet refrain from performing the activity for different reasons. The topic maybe uninteresting or too difficult, or the students may lack the necessary knowledge and skills for making a summary. In other words extended knowledge and practice play crucial roles in the construction of metacognitive knowledge and regulatory skills (Schraw, 1998, p. 118), but there is also a volitional or effort element.

Along with a description of cognition and metacognition, studying good learners in psychology meant studying and describing what experts do. Experts as learners were able to monitor their own understanding, and add necessary information, which would be analyzed for its consistency with what was already known, and analogies could be drawn that would advance their experts' understanding, in what was termed adaptive expertise (Hatano and Inagaki, 1986). To understand transfer better, that study of experts revealed that experts have conceptual knowledge, helping them to run simulations and make predictions for as yet unexperienced situations. From other psychology studies the importance of transfer was reiterated. Transfer was defined as "when a person's prior experience and knowledge affect new learning or problem-solving in a new situation" Mayer & Wittrock (1996, p. 48), but of course the problem is what type of prior learning may affect new knowledge. The concept of transfer alone is just a concept, without a model. Sternberg & Frensch (1993), describe four aspects of transfer in their model. The first is encoding specificity, meaning the information is dependent on how it is coded into stored representations. Secondly, comes organization, with reference to a clear framework to organize information in the mind's cognitive structures. Next, comes discrimination, deciding whether the information is relevant, or non-relevant, and lastly, set, which is whether the students will plan to transfer what is being learnt. In other words, the last part implied that a strategy must have personal value (Pintrich & Schunk, 1996) in order for a student to consider its use. Value, again, is controlled by personal beliefs, based upon experience that is stored in the brain's cognitive structures.

Taxonomies in psychology (Flavell,1979), like second language were also thought of

as stable, and independent of context. However, a realization for a need for instruments that reflected real learning situations changed to domain specific. A notable example includes Weinstein & Mayer (1986), who, again separated direct and indirect strategies, with direct reflecting information to aid acquisitions and organization, and included rehearsal, such as making notes, repetition to encode information. After rehearsal was elaboration, or making information meaningful, and finally, organization that helped to sort out connections presented in the information to be learned e.g. diagramming the information. The indirect strategies covered comprehension monitoring strategies that could be used to monitor understanding and execute strategies, and an affective element that worked to reduce learners' motivation. This general model emphasized that it was important to know strategies students used over their learning styles because, unlike learning styles, students have more control over strategies.

Another important part of strategies in psychology was strategy training. In second language it would be difficult to justify separating strategies from context, unless teaching independent notions, like general test-taking strategies. In psychology, however, two schools of thought did exist. The first school focused on teaching only strategies and their use, and helped learners who had learning difficulties in class (Feuerstein, Rand, Hoffman & Miller, 1980). The second school, eminently more expansive in size than the first, used the metacurriculum to meet academic needs (Weinstein & Meyer, 1994) and supply opportunities to apply strategies in authentic use, which was believed to be vital for strategic knowledge and transfer of strategies to new situations (Hadwin & Winne, 1996). Successful strategy use in new situations would build confidence in using a particular strategy. As a result the stored representation that the students held about the successful use of a strategy would change. It was found that some students attribute their failures to stable unchangeable factors they can do nothing about. Therefore, a major part of teaching strategy instruction came to be to change students attitudes about their own learning through explanation that ineffective learning is a matter of wrong strategies, not lack of intelligence. One study by Paris (1988), added motivation into instruction of strategies, covering a four stage plan from modeling to direct explanation. Studies of this kind recognized the importance of the teacher, who could be in an immediate position to assess students' knowledge and dispositions. Therefore, teachers, more so than researchers would deal with the cognitive processes of how students process the strategies, and teachers could also constantly assesses what students know to develop autonomous learning (Jones, Palinscar, Ogle & Carr, 1987).

Other implications for teaching strategies in psychology mean that teachers helped pupils develop a knowledge base about their learning processes, that explicit strategies are added to the base, and that pupils are encouraged to engage in self-monitoring and metacognition, as well as discussion on strategy use in a

debriefing session after the strategy experiences (Black & William, 1998). Selection of strategies is important as it will lead to possible success or failure, a sentiment mirror by McKeachie (1988), who said "Perhaps students learn by trial and error to use those strategies that fit their own level of ability, background, and sophistication" (p. 3), therefore self-selection and evaluation are important.

In summary, strategies in psychology have parallels with their counterparts in the field of second language acquisition, with taxonomies and a teaching emphasis. The models in psychology seem to explain the processes behind strategy selection a little deeper, especially with the inclusion of goals and importance of transfer. There is, however, one problem that has not gone away, that of reliability. In one review of the field by Hadwin & Winne (1996), it was found that out of 566 articles about strategies in educational psychology, only a few reported tests of intervention, and of those, a small number met rigorous research criteria. A further study by Willson, (1988) looked at research carried out in the *American Educational Research Journal* over the previous ten years, finding that of 19 articles in educational psychology related to strategy assessment, the large majority used statistical measurements, especially ANOVAs (analysis of variance) to detect differences in experimental groups. Although Willson admitted that such quantitative methods were probably appropriate, he called for the application of more qualitative methods to assess strategies, especially over a long period of time, something which was missing in both educational psychology and second language study.

A new role for strategies

As second language pursued the teaching methodology and good/bad learners studies to deepen strategy knowledge, psychology as a field started to move away from the idea of strategies as a unitary concept. The original idea of strategies to lead to autonomy and self-directed learning would still be the goal, but the emphasis was taken away from the relatively static picture that strategies presented, and turned into how the factors affecting strategy use could be combined into a more cohesive model. This new direction would not encompass strategies per se, but would look at the characteristics of strategic learning. The early second language taxonomies were too narrow in their descriptions, which should have been merely one part of a bigger overall picture. This re-emphasis of strategic learning allows researchers to cover a wider range of disciplines than just strategies themselves.

One model in psychology that initially looked at strategies claimed they should be, 1) goal directed, 2) intentionally invoked, and, 3) effortful (Weinstein & Meyer, 1991). Goals in strategies and the factors affecting such goals tied in with the notion that everything, in some form or other, is goal oriented. This model was updated by Weinstein, Husman & Dierking (1999), who stated that three interacting goals are presenting in their model of not strategy use, but the new direction of strategic

learning. The newer model called for skill, will and self regulation in strategic learning. This model even employed a questionnaire called the L.A.S.S.I. (Learning and Study Strategies Inventory), (Weinstein & Palmer, 2002) as an attempt to connect skill, will and self-regulation to strategy use. Skill was characterized by subscales of information processing, selecting main ideas and tests strategies. The will part of the L.A.S.S.I. measures the extent to which learners worry about their performance, and their attitudes and includes subscales of anxiety attitude and motivation. Finally, self-regulation involves how students regulate and control the whole learning process, and includes subscales of concentration, study aids and time management. Surrounding skill will and self-regulation are teacher beliefs, social context and type of learning activity. Second language models did not take enough into consideration, as the authors who helped create this model state: "It is clear that knowing what strategies to use and how to use them is not enough. Students must want to use them and must maintain that desire throughout the learning task. To use cognitive learning strategies effectively, students must be motivated to engage in the task, and must be volitional in their use of strategies" (Weinstein, Husman & Dierking, 1999 p. 732). This model also includes an approach to teaching as well, with the following steps:

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 necessary
8) Summatively evaluating the outcomes to decide if this is a useful approach for future similar tasks or if needs to be modified or discarded for future use.

Another model following the new direction was one based on university L1 students from ideas on motivation and self-regulation, called the Motivated strategies for Learning questionnaire, M.S.L.Q. (Pintrich, Smith, Garcia & McKeachie, 1993). This taxonomy, in the form of a questionnaire, measured reported metacognitive and cognitive and strategy use and resource management strategies. The subscales for cognitive and metacognitive strategies include rehearsal, elaboration, organization, critical thinking and metacognition and self-regulation. Resource management strategies includes measurements for study environment, effort regulation, peer learning and help seeking subscales. Dornyei, (2005) comments that the subscales for the M.S.L.Q., unlike the S.I.L.L., tap into general trends of learning, unlike the specific strategies that the S.I.L.L. measured. This was important so that scores on the M.S.L.Q. could be cumulative and the items bear a relationship to the underlying traits of motivation and cognition and metacognition. Remember that the subscales of

the S.I.L.L. were found to have low reliability on subscales (Robson & Midorikawa, 2001).

At last the field of psychology had started to build effective models that were theoretically sound and could be employed as methodology tools, with an emphasis on strategic learning that was starting to be seen under a wider view of the self called, self-regulation. Thus self-regulation could be seen by as "cognitive, affective, motivational, and behavioural components that provide the individual with the capacity to adjust his or her actions and goals to achieve desired results in light of changing environmental conditions" (Zeidner, Boekaerts & Pintrich, 2000 p. 751).

Along with this definition psychology also began to build a model of self-concept which was made up of social identities as part of a group such as nationality, language, school, gender etc.. Also, self consists of personal attributes, namely, academic, physical, social and characteristics. Each one of these sections represents a personal view of how a learner sees himself or herself as pertaining to that part of the attribute. For example some students may see themselves as good at speaking, but poor at reading, others may see themselves as having good physical abilities in sports.

The move towards the self also influenced certain models, one of which was a self schema model, by (Marcus & Nurius, 1986), consisting of four parts: The first schema is affective, meaning literally that we avoid negative self-schemas and seek out positive self-schemas. The second schema, temporal, is based on experience now, and also that to come, which has been called, possible selves, the you that you have yet to become. The third schema is efficacy that entails belief about the chances or possibilities of fulfilling some goal, and lastly, the value, or how important the goal is to the self. In other words what we believe we are like and what we believe we may come help provide the impetus for some form of behaviour regulation. The question of importance had now become, not the surface structures, but the underlying self-controlled mechanisms that regulate actions. The field of psychology started to address the fact that knowledge of oneself could be the underlying trait that affects many other facets of psychology, including motivation, aptitude, environmental processes, goal theory, etc.. In this wider view these aspects of psychology make up a much bigger picture, a picture that second language could not see, because of its preoccupation with learning strategies. This wider view has put the concept of self as the most important underlying element and how knowledge of the self and the environment can lead to fulfillment and regulation of all aspects of the self and ultimately goals, which may not necessarily be linked directly to learning. The path is not a linear one between goals and achievement, (Boekaert & Corno, 2005), but the self as the underlying unit of measurement has the power to bring about goals by a variety of self-initiated control processes.

Conclusion

Both second language and general psychology have been interested in strategies and their potential for helping students in the learning situation. In the second language model the researchers used studies of good and bad learners to determine the surface product-oriented side of strategies. This research was pioneering, but not so scientific in its approach. The models used were based on narrow views of cognition and metacognition. From there second languages turned to studies to find factors that could affect strategy use, including motivation, tasks and beliefs to explain the role of strategies. Furthermore, second language tried to incorporate strategies in training to teach bad learners how to become more successful.

Educational psychology also has a tradition of strategies that started from taxonomies, but rather than concentrating on the product of strategies the field tried to encompass the underlying processes that govern strategy use and model them into a bigger picture with the self as the underlying trait. Through the holistic view distinctions between cognition and emotions break down, and whole persons should have the potential to become autonomous self-directed learners. Learners need to be able to exercise "personal authority" (Williams & Burden, 2005, p. 164), not being told to use a particular strategy, but discover and develop personally relevant strategies based upon self-knowledge.

For the future second language, research in second language should attempt to combine the self-regulation model of psychology with the knowledge of strategies from second language (McDonough, 2001). The second language field needs to begin to conceptualize the learner as a whole person rather than as a cognitive entity. Research should be undertaken in both the qualitative and quantitative paradigm to increase the potential for triangulation. Two research paradigms should also try to shed light on how self-schemas are built over time and their relationship with motivation, and what conditions are best for transfer of knowledge and strategies in second language learning. This knowledge of self is not only important for school life, but will turn effective learners into lifelong learners, way past school and into the workplace.

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—Abstract—

Changing Models for Strategies in Second Language Study

The fields of second language study and educational psychology have both been interested in strategies and their potential for helping students in the learning situation. Both fields have used research on successful and unsuccessful learners to produce lists of strategies that later become taxonomies, encompassing cognitive, metacognitive and affective-based strategies. Second language study continued its research into strategies as a product, and attempted to correlate strategies with other disciplines of psychology as well as conduct research into strategy instruction in the four skill areas. Educational psychology, on the other hand, started to move towards trying to find the underlying processes that governed strategy use. In this more holistic approach the self is recognized as the main unit of research, implying that the self can initiate all cognitive functions, including learning, through appropriating goals and controlling and maintaining the cognitive processes that make up the self. In the future second language should attempt to combine notions of the self, called self-regulation in psychology, in its research to widen the limited view of strategies in second language.

第二言語研究における方略の変化モデル

第二言語研究および教育心理学分野では，学生の学習を援助するための方略とその可能性に関心を持ってきた。この両分野では方略リスト　－認知，メタ認知，および感情準拠の方略を包含し，後に分類学になりうるリスト－　を作るために，成功した学生と成功しなかった両方の学生に関して研究を行ってきた。第二言語研究ではその方略研究を継続し，そして4技能の教授法方略の研究を行うとともに，その成果として方略と他の心理科学との関連付けを試みた。教育心理学では，一方で，方略の使用を司る基本的な手順を発見する方向に踏み出した。この，より全体論的方法論では，自己は主要な研究単位として認識されている。これは，目標を適合させ，自己を構成している認知過程を制御・維持することにより，自己が学習も含めて，すべての認知機能を起こすことができることを示唆する。将来，第二言語はその研究は，方略の見解をより広げるために自己，すなわち心理学における限られた概念を統合しなければならない。