

METACOGNITION IN LANGUAGE LEARNING – A LITERATURE REVIEW

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One of the challenges facing universities in Vietnam is that of equipping graduates with the capacity for independent analytical thinking and learning which will enable them to operate in a global context while also contributing constructively to the changing needs of the local scene. The ability to think analytically and to learn independently calls for learners to be purposeful, strategic, and persistent in learning as well as to have more adaptive cognitive processes and the willingness to take charge of their learning. This is the role of metacognition in learning autonomy across domains. This literature review focuses on the concept of metacognition and the role of metacognitive strategies in promoting learning EFL independently.

Metacognition enables us to be successful learners, and has been associated with intelligence (e.g., Borkowski, Carr, & Pressley, 1987; Sternberg, 1984, 1986a, 1986b). Metacognition refers to higher order thinking which involves active control over the cognitive processes engaged in learning. Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are metacognitive in nature. Because metacognition plays a critical role in successful learning, it is important to study metacognitive activity and development to determine how students can be taught to better apply their cognitive resources through metacognitive control.

"Metacognition" is often simply defined as "thinking about thinking." Although the term has been part of the vocabulary of educational psychologists for the last couple of decades, and the concept for as long as humans have been able to reflect

on their cognitive experiences, there is much debate over exactly what metacognition is. One reason for this confusion is the fact that there are several terms currently used to describe the same basic phenomenon (e.g., self-regulation, executive control), or an aspect of that phenomenon (e.g., meta-memory), and these terms are often used interchangeably in the literature. While there are some distinctions between definitions (see Van Zile-Tamsen, 1994, 1996 for a full discussion), all emphasize the role of executive processes in the overseeing and regulation of cognitive processes.

The term "metacognition" is most often associated with John Flavell, (1979). According to Flavell (1979, 1987), metacognition consists of both metacognitive knowledge and metacognitive experiences or regulation. Metacognitive knowledge refers to acquired knowledge about cognitive processes, knowledge that can be used to control cognitive processes. Flavell further divides metacognitive knowledge into three categories: knowledge of person variables, task variables and strategy variables.

Metacognitive Knowledge

Stated very briefly, knowledge of person variables refers to general knowledge about how human beings learn and process information, as well as individual knowledge of one's own learning processes. For example, you may be aware that your study session will be more productive if you work in the quiet library rather than at home where there are many distractions. Knowledge of task variables include knowledge about the nature of the task as well as the type of processing demands that it will place upon the individual. For example, you may be aware that it will take more time for you to read and comprehend a science text than it would for you to read and comprehend a novel.

Finally, knowledge about strategy variables include knowledge about both

cognitive and metacognitive strategies, as well as conditional knowledge about when and where it is appropriate to use such strategies.

Metacognitive Regulation

Metacognitive experiences involve the use of metacognitive strategies or metacognitive regulation (Brown, 1987). Metacognitive strategies are sequential processes that one uses to control cognitive activities, and to ensure that a cognitive goal (e.g., understanding a text) has been met. These processes help to regulate and oversee learning, and consist of planning and monitoring cognitive activities, as well as checking the outcomes of those activities.

For example, after reading a paragraph in a text a learner may question herself about the concepts discussed in the paragraph. Her cognitive goal is to understand the text. Self-questioning is a common metacognitive comprehension monitoring strategy. If she finds that she cannot answer her own questions, or that she does not understand the material discussed, she must then determine what needs to be done to ensure that she meets the cognitive goal of understanding the text. She may decide to go back and re-read the paragraph with the goal of being able to answer the questions she had generated. If, after re-reading through the text she can now answer the questions, she may determine that she understands the material. Thus, the metacognitive strategy of self-questioning is used to ensure that the cognitive goal of comprehension is met.

Cognitive vs. Metacognitive Strategies

Most definitions of metacognition include both knowledge and strategy components; however, there are a number of problems associated with using such definitions. One major issue involves separating what is cognitive from what is metacognitive. What is the difference between a cognitive and a metacognitive strategy?

Can declarative knowledge be metacognitive in nature? For example, is the

knowledge that you have difficulty understanding principles from bio-chemistry cognitive or metacognitive knowledge? Flavell himself acknowledges that metacognitive knowledge may not be different from cognitive knowledge (Flavell, 1979). The distinction lies in how the information is used.

Recall that metacognition is referred to as "thinking about thinking" and involves overseeing whether a cognitive goal has been met. This should be the defining criterion for determining what is metacognitive. Cognitive strategies are used to help an individual achieve a particular goal (e.g., understanding a text) while metacognitive strategies are used to ensure that the goal has been reached (e.g., quizzing oneself to evaluate one's understanding of that text). Metacognitive experiences usually precede or follow a cognitive activity. They often occur when cognitions fail, such as the recognition that one did not understand what one just read. Such an impasse is believed to activate metacognitive processes as the learner attempts to rectify the situation (Roberts & Erdos, 1993).

Metacognitive and cognitive strategies may overlap in that the same strategy, such as questioning, could be regarded as either a cognitive or a metacognitive strategy depending on what the purpose for using that strategy may be. For example, you may use a self-questioning strategy while reading as a means of obtaining knowledge (cognitive), or as a way of monitoring what you have read (metacognitive). Because cognitive and metacognitive strategies are closely intertwined and dependent upon each other, any attempt to examine one without acknowledging the other would not provide an adequate picture.

Knowledge is considered to be metacognitive if it is actively used in a strategic manner to ensure that a goal is met. For example, a student may use knowledge in planning how to approach a math exam: "I know that I (person variable) have difficulty with word problems (task variable), so I will answer the computational

problems first and save the word problems for last (strategy variable)." Simply possessing knowledge about one's cognitive strengths or weaknesses and the nature of the task without actively utilizing this information to oversee learning is not metacognitive.

Metacognition and Intelligence

Metacognition, or the ability to control one's cognitive processes (self-regulation) has been linked to intelligence (Borkowski et al., 1987; Brown, 1987; Sternberg, 1984, 1986a, 1986b). Sternberg refers to these executive processes as "metacomponents" in his triarchic theory of intelligence (Sternberg, 1984, 1986a, 1986b). Metacomponents are executive processes that control other cognitive components as well as receive feedback from these components. According to Sternberg, metacomponents are responsible for "figuring out how to do a particular task or set of tasks, and then making sure that the task or set of tasks are done correctly" (Sternberg, 1986b, p. 24). These executive processes involve planning, evaluating and monitoring problem-solving activities. Sternberg maintains that the ability to appropriately allocate cognitive resources, such as deciding how and when a given task should be accomplished, is central to intelligence.

Role of Metacognition in language learning

Teachers should make explicit metacognitive and specific learning strategies for English language learners. They should make sure that students understand the strategies and know when and where it is appropriate to apply the strategy. Teachers should teach students how to use their metacognitive strategies to help with their learning even when their instructional goals are focusing on the academic content.

Metacognitive strategies, or self-regulated learning strategies, involve the process of setting goals, planning what they will do, selecting and deploying learning strategies and monitoring the effectiveness of those strategies, solving problems

encountered, and evaluating performance and achievement (Chamot, 2009; Cohen, 2010; Cohen, 2011; Zimmerman, 2008). Metacognition is a crucial skill for learning a second language and a skill used by highly proficient readers of any language (Alliance for Excellent Education, 2005). Students who have poor understanding of cognitive learning strategies are more likely to struggle with reading and writing (Conley, 2008). What's more, most students not only have limited knowledge of effective learning strategies but also do not know how to select, evaluate, and adjust strategies (Cleary & Zimmerman, 2004). Teachers should also instruct students in language learning strategies (Spaulding et al., 2004). Instructional techniques that use metacognitive strategies tend to have strong effects on improving student achievement (Marzano, 1998). A recent survey of a group of international experts revealed a consensus that strategies that involve a metacognitive component enhance performance in language learning (Cohen & Macaro, 2007).

In conclusion, the study of metacognition has provided educational psychologists with insight about the cognitive processes involved in learning and what differentiates successful students from their less successful peers. It also holds several implications for instructional interventions, such as teaching students how to be more aware of their learning processes and products as well as how to regulate those processes for more effective learning.