

**Investigating Teachers' and Learners'  
Metacognitive Awareness and Effective Practice:  
University Students as a Sample**



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**Abstract:**

The current paper purports itself to investigate teachers' and learners' metacognitive skills awareness and effective classroom practice. In fact, these skills are acknowledged to be key competences in a learning process, for they endow learners with skills for organizing, guiding, controlling and regulating one's own thinking, actions and learning processes. Thus, educators are persistently urged to provide learners not only with subject contents, but with analytical skills and autonomous learning to be at the helm of their own learning process, executing learning tasks more effectively. To conduct this study, a mixed method has been used to attempt to ascertain awareness and effective practice of such skills throughout the teaching/learning process. Besides, the targeted population consisted of 40 teachers and 100 students from different levels. The findings revealed that all learners are unaware of these skills, whereas teachers seem to be to some extent conscious of them but not enough to implement them in their classroom practicum.

**Keywords:** learning strategies, metacognitive strategies, EFL classrooms, autonomous learning, awareness

**1. INTRODUCTION**

In the 19th century, students who failed at school were considered as lacking of personal ability. Since the advent of the disciplines of educational psychology and cognitive science, a lot of researches on learning behaviour have been conducted, trying to find out factors that affect the success of learning, thus garnering considerable attention.

Learning in its broadest meaning is a social process that enables people to expand their abilities; it organizes, shapes, and strengthens the

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brain because humans are learning machines. For higher education, questions arose regarding the quality and standards of education. In response, many colleges and universities launched efforts to provide answers. These involved the development of learning outcomes, the creation of effective institutional and curricular assessments, and the creation of offices of assessment to assist in documenting the learning that is taking place at classroom, department, and institutional level.

A current challenge for college level educators is integrating the research on learning in ways that suggest strategies for pedagogical reform. One cognitive finding shows the importance of students becoming more knowledgeable of how they learn and responsible for their own learning. This involves the recognition of understanding a concept and of deciding when more information is needed. In the 1970's, the research on metacognition and self-regulated learning began, and people started believing that learner's metacognition and social cognition instead of intelligence are the factors that lead to learning differences.

## **2. Literature Review**

### **2.1. Learning Strategies**

In spite of the boom activity in the area of strategies of learning in the last three decades, there still exists a considerable debate among the researchers as true ways of knowing them.

#### **2.1.1. Definition of Language Learning Strategies**

Regardless of the importance of language learning strategies (henceforth LLS), there is no unanimous definition for them. Yet, there is no doubt about what is their meaning. Learning strategies are the sum of techniques that are consciously controlled and intentionally used by the learner to help him comprehend, remember and use data (Pressley & McCormick, 1995; Oxford, 1996). For this, they have been the focal point in L2 learning since the late 1970s (Rubin, 1975; Stern, 1975; O'Malley and Chamot, 1990; Cohen, 1998; Oxford, 2002; Wenden, 1998; Anderson, 2003; Baker and Boonkit, 2004; Brown, 2007).

#### **1.2.2. Classification of Language Learning Strategies (LLS)**

Many researchers have focused on how successful or good language learners try to learn and tried to identify what strategies worked for them to find which strategies are effective for language learning. Many researchers have presented various 6 classifications of LLS, also called taxonomies. They are chronologically ordered and summarized in the following table.

**Table1. Overview of the Common Classifications of Second/Foreign LLS**

Authors	Classification
Stern (1975)	He produced a list of ten LLS that the good language learner is characterized by. They are: Planning, activity, empathy, Formality, experimentation, semantic, practice, communication, monitoring and internalization strategies.
Naiman & al. (1978)	Active task approach; realization of language as a system; realization of language as a means of communication; management of affective demands; and self-monitoring.
Rubin (1981)	Strategies such as utilizing creation tricks and creating chances for practice. -Cognitive learning strategies which contain verification, deductive reasoning, guessing, monitoring of errors, and memorization.
O'Malley & al. (1985) - O' Malley & Chamot (1990)	Metacognitive (selective attention, planning, monitoring and evaluating) - Cognitive (rehearsal, organization, inferencing, summarizing, reducing, imagery, transfer, and elaboration) -Socio-affective (cooperation, questioning for clarification, and self-talk)
Weinstein & Mayer (1986)	Primarily building upon the difference between learning strategies and teaching strategies. Are learning strategies suitable for basic or learning tasks (rehearsal, elaboration, and organizational strategies). Or for complex tasks namely comprehension monitoring strategies (e.g., checking for comprehension failures)
Rubin (1987)	-Direct strategies, that is learning strategies: cognitive and metacognitive. - Indirect strategies: communication strategies, social strategies.
Oxford (1990)	Learning strategies are separated in two major groups: -Direct strategies: memory, cognitive, compensation. -Indirect strategies: metacognitive, affective, social.
Stern (1992)	This time he categorized LLS into just five groups which are: management and planning strategies, cognitive, communication, experimental, interpersonal and affective.
Ellis (1994)	A concern for language form, a concern for communication, an active task approach, awareness of the learning process; and a capacity to use strategies flexibly in accordance with task requirements
Bimmel & Rampillon (2000)	Direct strategies: memory, language processing. Indirect strategies: self-regulatory, affective, social, language use strategies.
Cohen & Weaver (2006)	a) Retrieval, rehearsal, communication, and cover strategies. b) Listening, reading, writing, speaking, vocabulary, and translating strategies

It can be seen that there are problems in classifying LLS. Almost all L2 strategy classifications have been divided into five groupings:

1. Systems related to successful language learners (Rubin, 1975);
2. Systems based on psychological functions (O'Malley & Chamot, 1990);
3. Linguistically based systems dealing with guessing, language monitoring, formal and functional practices (Bialystok, 1981);
4. Systems related to separate language skills (Cohen, 1990); and
5. Systems based on different styles or types of learners (Sutter, 1989).

The existence of these distinct strategy taxonomies provides a lack of a coherent, well accepted system for describing them. Such variety is due to the different research methodologies adopted, research instruments used and different contexts studied. Yet, these attempts to classify learning strategies have provided an initial framework for a further survey of learning strategies.

### 2.3.2. Cognition and Learning

Cognition is the process by which knowledge is acquired, accumulated and understood through experiences, senses and thoughts. It involves a wide range of mental operations which constitute learning.

#### 2.3.1. Cognitive Processes

The mental process of becoming aware of things starts with attention. Many stimuli happen and only those interesting ones get received by the senses, later perception takes over and information get filtered and stored in the sensory register. After that, data get transferred into the working table of the short term memory. On the amygdala information get decoded and analyzed to create connection between old information and the new information and bring up some new information that goes beyond the existing information (Ormrod, 1995), i.e., recoding and synthesizing. As a final stage, the new ordered information gets stored in the long term memory. According to McCormick and Pressley (1997), it is only after the lifelong storage that it can be said that learning occurred, as acquiring knowledge and making change can't be called learning if and only if it is permanent. Monitoring and controlling one's own cognition is a sign of effective learning for (Baker and Brown, 1984). So, the relationship between cognition and learning is complementary. Among the cognitive strategies: elaboration, organization, summarizing, rehearsal and visualization.

#### 2.3.2. Cognition and Learning Theories

A learning theory is conceptual frameworks that describes the nature of learning and how students absorb, process, and retain knowledge. There are many learning theories; the most essential ones for this study are classified as follow

**Table 2: Important Learning Theories in the 20th Century**

Theories names	Description	Prominent figures
Developmental 1900	Ability to reason increases as genetic sequencing permits increased brain development	Baldwin, Hall, Levinson, Erickson, Piaget
Behaviorism Early 1900s	Understanding/controlling simple behaviors through stimulus-response Understanding preferred ways of learning.	Pavlov, Thorndike, Witkin, Cohen, Kolb, Kogan, Myers, Briggs, Dunn
Information Processing 1950s	How the brain processes information	Ausubel, D.P. Anderson, Gagné
Social Learning 1960s	Learning through modeling and imitation	Bandura

Social 1980s	Constructivist	Learning through dialogue	Vygotsky
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Two of the main theories behind cognition and learning come from the psychologist Jean Piaget who is a constructivist and the educational-psychologist Robert Gagné who developed Information processing.

#### **2.4. Constructivism**

Gruber and Voneche (1977) also state that the term constructivism most probably is derived from Piaget's "constructivist" views. Whilst, Perkins (1992) points out that constructivism has multiple roots in psychology and philosophy.

##### **2.4.1. Constructivism: Emergence and Definition**

It is a learning theory in which suggests that people construe their own understanding and knowledge of reality. Piaget provides a solid framework for understanding children's ways of doing and thinking at different levels of their development. For him, children do not have only different views of the world that is distinct from that of the adults, but also their views make sense.

Piaget, J. & Inhelder, B. (1977) relate how children become progressively detached from the world of concrete objects and local contingencies, gradually becoming able to mentally manipulate symbolic objects within a realm of hypothetical worlds. Haney & al., (2003) note that it is one of the complete models for explaining the development of learners conceptualization and their conceptual change.

#### **2.5. Metacognition**

One of the pivotal concepts with regard to the present study is metacognition. We here below try to browse some of the definitions assigned to the concept by some scholars.

##### **2.5.1. Genesis and Definition**

Metacognition is a term coined by Flavell (1976; 1979) to refer to the learner's awareness of his own thinking and learning processes, which is a higher order of cognition to oversee one's own thinking. Sternberg (2009) identifies metacognitive strategies as the core of education. Educators are increasingly required to assist learners not simply with subject content, but with developing MS since they facilitate independent interdisciplinary and lifelong learning. Therefore, the problem treated in this study is concerned with teachers' and learners' awareness and use of metacognitive language learning strategies.

The main purpose of all educational researches, either implicitly or explicitly, is to improve learning. To be a successful learner, one should be able to acquire knowledge, transfer and make use of the acquired knowledge. To achieve these goals, learners need to be able to think and be able to understand their own thinking. The need of this kind of research is clearly stated even in the most recent research such as Tarricone's (2011) reference to the absence of research in complex problem solving contexts.

It has been noticed that one of the utmost challenges facing Algerian universities 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 their societies. This calls for learners to be strategic and persistent in learning as well as to have more adaptive cognitive processes and the willingness to take charge of their learning. The aforementioned topic runs within the field of psycho-pedagogy which studies the psychology of learners in educational settings; thus, EFL learners' awareness about metacognitive strategies (henceforth, MS) is to be analyzed from a psycho-pedagogical lens.

The purpose of using language learning strategies depends on the task being performed, but it is generally summarized to becoming a good language learner. When learners understand the processes of their learning and control it, they tend to be more responsible in their learning, in other words, autonomous. This study's aim is to discover whether university EFL teachers and learners are aware of and effectively use these metacognitive strategies.

According to Georghiades (2004), the concept of metacognition was first used in an empirical study done by Flavell. He first used the term 'meta-memory' (Flavell, 1971; Brown, 1987). Then in 1976, he coined the word 'metacognition' (Flavell, 1976) and described it as someone's conscious ability to understand, control, and regulate one's own cognitive process to reach maximum learning. He said it is "*knowledge and cognition about metacognitive phenomena.*" (Flavell, 1979, p. 906). Metacognition is a descriptive word for using cognition (knowledge) to comprehend information and realize one's own mind's potential. Flavell's Taxonomy of Metacognition (Flavell, 1976, 1979) prompted widespread controversy in early psychological research.

Flavell's work was influenced by Piaget's cognitive development (1972) and it has been the first to investigate the role of metacognitive processes, in the area of children's memory functioning (Sternberg, 1998), and Vygotsky's social and interactional effects on cognition and learning development (1978). His definitions were followed by many other definitions; the most widely quoted definitions are listed below:

Metacognition refers to one's knowledge concerning one's own cognitive processes and products and anything related to them, e.g. the learning relevant properties of information or data ... Metacognition refers, among other things, to the active monitoring and consequent regulation and orchestration of these processing in relation to the cognitive objects or data to which they bear, usually in the service of some concrete goals or objectives. (Flavell, 1976: 232)

The focus of this definition is mainly on what the learner knows about the way he learns; furthermore, how he organizes and controls his mental operations.

Later he provided another definition in which he acknowledged the crucial role of monitoring and controlling learning operations in metacognition and it continues to be echoed in (Zimmerman & Moylan, 2009;) recent explanations of metacognition. In the same wake he describes it as *“Knowledge or cognitive activity that takes as its object, or regulates, any aspect of cognitive enterprise.”* (Flavell, 1985:104)

According to Kuhn and Dean (2004), meta-cognition helps students to solve a problem by way of incorporating a strategy in a particular context. This is so as learners will be able to retrieve and exercise a particular strategy within the same context but that might have a different setting. In other words, meta-cognition will aid students' understanding where they have been taught a strategy to complete a task, and where upon learning the strategy the learners are given a second task which is different from the first task but which is structurally equivalent to the original one (Hacker 1998).

Researchers also refer to *“meta-cognition whereby people engage themselves in a particular task and optimize the learning process to achieve better outcomes.”* (Winne & Perry, 2000).

In Hardi's words, it *“includes knowledge about when and how to use particular strategies for learning or for problem solving.”* (2014: 40).

Anderson (2008) suggests that metacognition is not a direct process of learner strategy that we can apply one step at a time. It is rather a tool that activates different elements of the cognitive process.

Other definitions refer back to its philosophical origin such as that is essentially *“cognition about cognition”* (Smith & al., 2003), *“knowing about knowing”* (Koriat, 2000) and *“thinking about thinking”* (Livingston, 1997).

Researchers have debated what metacognition is comprised of and what terms should be synonymous, such as *“self-management, meta-mentation, meta-learning... [and] meta-components”* (Veenman, Van Hout-Wolters, & Afflerbach, 2005).

Although these definitions share some similarities, over the years these conceptualizations are becoming confusing instead of clarifying. Rahman & Masrur (2011) discussed such confusion and provided a myriad of terms that, for them, all apply to metacognition.

Metacognitive beliefs, metacognitive awareness, metacognitive experiences, metacognitive knowledge, feeling of knowing, judgment of learning, theory of mind, meta-memory, metacognitive skills, executive skills, higher-order skills, monitoring, meta-components, comprehension, meta-learning, learning strategies, heuristic strategies and self-regulation. (2011: 135)

## 2.5.2. Metacognition Components

Most of early research divided metacognition into areas 'knowledge of cognition' and 'regulation of cognition' (Flavell, 1979; Brown, 1987; Schraw, 1998; Schraw & Moshman, 1995; Schraw & al., 2006). Metacognition has two constituent parts: knowledge about and monitoring of cognition. Knowledge of cognition refers to the awareness that individuals have about their own cognition and their strengths and limitations. On the other hand, regulation of cognition, which is our main focus here, refers to an individual's control of his/her learning. However, more recent frameworks divided the concept into three components: metacognitive knowledge, monitoring and control, each with several subcomponents (Pintrich, Wolters & Baxter, 2000). Later, it has been divided into four constructs which lacked clear definitions (White, 1988).

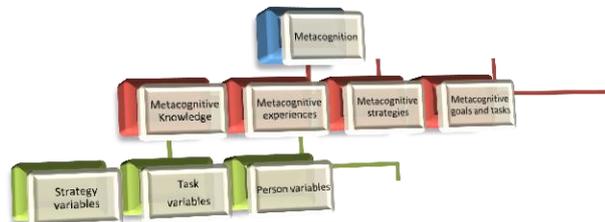
## 2.5.3. Models of the Components of Metacognition

Basically, there is no consensus on the components of metacognition; however, there are some often used frameworks.

### 2.5.3.1. Flavell's Model

In his 1979 paper, Flavell proposed a formal model of metacognitive monitoring which included four classes of phenomena and their relationships. The four classes were (a) metacognitive knowledge, (b) metacognitive experiences, (c) tasks and goals, and (d) strategies or actions.

**Figure 1: Flavell's Formal Model for Metacognition**



According to Flavell, **metacognitive knowledge** was defined as *“that segment of your stored knowledge that has to do with people as cognitive creatures and with their diverse 16 cognitive tasks, goals, actions, and experiences.”* (1979, p. 906). In fact, this type of knowledge is the part of knowledge which deals with individuals as cognitive beings and considers their different cognitive tasks, aims, behavior, and experiences as well.

**A) Metacognitive experiences** (Flavell, 1979), the second class of phenomena included the subjective internal responses of an individual to his own Metacognitive knowledge, goals or strategies. These may be fleeting or length, and can occur before, during, or after a cognitive enterprise. As monitoring phenomena, these experiences can provide internal feedback about current progress, future expectations of progress or completion, degree of comprehension, connecting new information to old, and many other events.

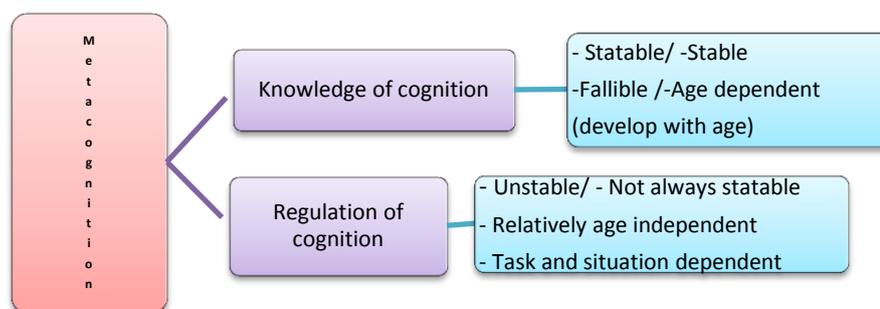
**B) Metacognitive strategies** are designed to monitor cognitive progress. They are ordered processes used to control one's own cognitive activities and to ensure that a cognitive goal (for example writing an effective sentence, understanding reading material) have been met. They enable the learner to oversee his own learning process, plan and monitor ongoing cognitive activities, and to compare cognitive outcomes with internal or external standards.

**C) Metacognitive goals and tasks** are the desired outcomes or objectives of a cognitive venture. This was Flavell's third major category. Goals and tasks include comprehension, committing facts to memory, or producing something, such as a written document or an answer to a math problem, or of simply improving one's knowledge about something.

### 2.5.3.2. Brown's Model of Metacognition

Brown, A. L. (1987) proposed his model in which metacognition was composed of two dimensions: knowledge about cognition as activities that involve conscious reflection on one's cognitive abilities and activities, i.e., metacognition; and regulation of cognition as activities regarding self-regulatory mechanisms during an ongoing attempt to learn or solve problems. In additional studies, knowledge about cognition was characterized into declarative knowledge, procedural knowledge, and conditional knowledge (Schraw & al., 2006; Schraw & Moshman, 1995).

**Figure 2: Brown's model for metacognition**



### 2.5.3.3. Tobias & Everson's Hierarchical Model

Tobias and Everson perceive metacognition as a compound of skills and knowledge - knowledge of cognition, monitoring of one's cognitive and learning processes, and control of those processes. However, they organize these components into an hierarchical model, where the metacognitive skill of knowledge monitoring is a pre-requisite for activating other metacognitive skills.

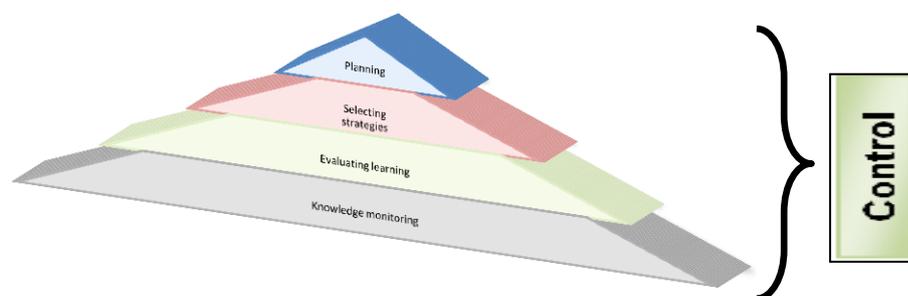
They define knowledge monitoring (KM) as the ability of knowing what you know and knowing what you don't know. They believed that monitoring of prior learning was a fundamental or prerequisite metacognitive process. If students cannot differentiate accurately between what they know and do not know, they

can hardly be expected to engage in advanced metacognitive activities such as evaluating their learning realistically, or making plans for effective control of that learning. Learners who accurately differentiate between what has been learned previously and what they have yet to learn are better able to focus attention and other cognitive resources. They have an important advantage, since they can refrain from studying material that has already been mastered, or merely review it briefly. They assert that these students devote most of their time and energies to new, unfamiliar materials. In contrast, they argue that those students with less effective knowledge monitoring processes are likely to allocate their time and resources less effectively and spend valuable time studying what they already know at the expense of unfamiliar material and, consequently, have greater difficulty mastering new subjects (Tobias & al., 2009).

Tobias & Everson (2000) have investigated the monitoring aspect of metacognition, based on the assumption that accurate monitoring is crucial in learning. They have performed a series of empirical studies to investigate the aspect of metacognition and its relationship to learning from instruction in different domains, focusing on issues as the relationship of knowledge monitoring to academic ability.

They adopted the model of metacognition, based on the vision that promoting conscious development of knowledge monitoring, would lead to increasing of attention focus and appropriate allocation of cognitive resources and would, consequently, improve the other components of metacognition, that are placed on the top of Tobias and Everson's pyramid.

**Figure 3: Tobias and Everson's hierarchical model**



#### **2.5.3.4. Schraw and Dennison's Model**

Schraw, (1998) described two aspects of metacognition, knowledge of cognition and regulation of cognition, and how they are related to domain-specific knowledge and cognitive abilities. Schraw argues that metacognitive knowledge is multidimensional, domain-general in nature, and teach-able. Four instructional strategies are described for promoting the construction and acquisition of metacognitive awareness. These included promoting general awareness, improving self-knowledge and regulatory skills, and promoting learning

environments that were conducive to the construction and use of metacognition. He provided explicit instruction in cognitive and metacognitive strategies. Further, Schraw emphasizes that such strategy training needs to emphasize how to use strategies, when to use them, and why they are beneficial. Schraw recommends providing explicit prompts to help students improve their regulating abilities. He suggests using a checklist with entries for planning, monitoring, and evaluation, with sub questions included under each entry that need to be addressed during the course of instruction. Such a checklist, he argues, helps students to be more systematic and strategic during problem solving. Knowledge of cognition includes three sub-scales: declarative knowledge, procedural knowledge, and conditional knowledge. Regulation of cognition includes five sub-scales: planning, information management strategies, comprehension monitoring, debugging strategies and evaluation.

**A) Knowledge of Cognition** is how learners know about themselves as a learner, and resources before beginning the task. Knowledge of Cognition has three sub-components

**B) Declarative knowledge** which is how learners know about themselves as a learner, about their own weaknesses and strengths, and about their relationships with the tasks that they want to accomplish, such as learning or problem solving.

**C) Procedural knowledge** which means knowing how and what strategies learners can use to accomplish their tasks.

**D) Conditional knowledge** which implies knowing when and under what conditions learners can use a particular strategy to achieve their goals.

**2.6. Regulation of Cognition** is to control the cognition. It consists of five subcomponents: such as Planning, Information Management Strategies, Comprehension Monitoring, Debugging Strategies, and Evaluation.

**a- Planning:** goal setting and allocating resources prior to learning.

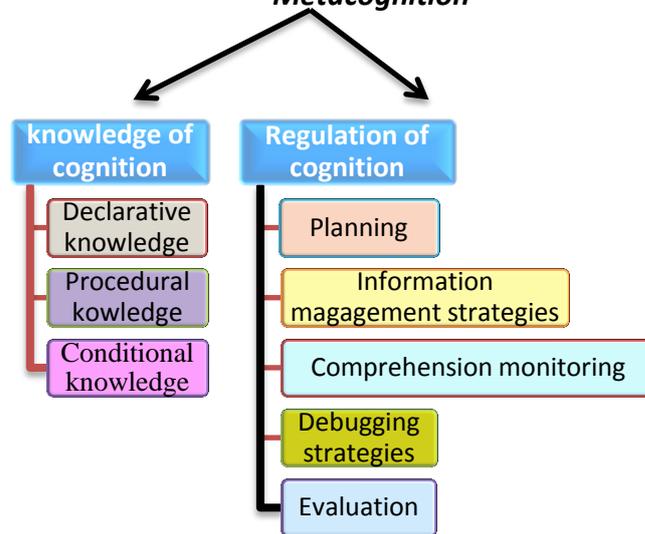
**b- Information Management Strategies:** It includes skills to process information, such as organizing, elaborating etc.

**c- Comprehension Monitoring:** It entails assessing one's comprehension and learning process, whether the reading materials make sense or not.

**d- Debugging Strategies:** It is to look for help when encountering difficulties.

**e- Evaluation:** It is to assess oneself to see whether he or she has accomplished his/her jobs.

**Figure 4: Schraw and Dennison's Model  
Metacognition**



## 2.7. Metacognitive Awareness

Metacognitive awareness is a conscious attention that helps us reflect on what we already know with our cognitive control. So, metacognitive awareness is interdependent based on its nature. Briefly, it consists of beliefs and knowledge about factors such as task, individual and strategy that interact during any cognitive activity. We cannot separate knowledge from attention. Flavell stated, *"I am engaging in metacognition if I notice that I am having more trouble learning A than B; if it strikes me that I should double check C before accepting it as fact."* (1976: 232).

### Conclusion

In the foregoing part, the endeavor has been to define and clarify the multifarious and frequently elusive key concepts which would constitute the pivotal elements of the issue under investigation. In fact, it provides a brief review of the history of metacognition and principles of metacognitive instruction in relation to learning strategies and cognition. Equally important, has been highlighted the impact of training on the target strategies for learners' learning improvement and self-regulation.

## 3. Research Methodology

### 3.1. INTRODUCTION

Metacognitive strategies are not isolated devices; they reflect other elements and constructs interacting at the same time. This study explores the students' and instructors' perceptions of relevance and actual use of or

incorporation of strategies in EFL classrooms; and the MS appropriate for promoting independent learning of English as a foreign language, with a view to fostering L2 students' awareness of MS.

### **3.2. Participants**

This study was carried at Ibn Khaldoun University of Tiaret, from the population of the students and teachers at the English department, 100 students from all levels and 40 teachers were selected to participate in this investigation. For the sake of the generalizability of the research outcomes, the probability sampling (randomness) has been chosen, targeting all eligible members to be selected. Though time-consuming and 84 a bit expensive, this technique is, according to us, more convenient to the type of issue under investigation. The number of the students was determined taking into account their level, as showed in the table below:

**Table II.1 The Targeted Population**

Level	Number	
	Males	Females
Master 2	16	16
Master 1	14	14
3 rd year LMD BA	09	09
2 nd year LMD BA	06	06
1 st year LMD BA	05	05
Total	50	50

The number of teachers, on the other hand, depends on their availability; every teacher whom the researcher could reach is a participant. The total number is 40 (both permanent and contract teachers), regardless their gender.

### **3.4. Research Tools**

The instruments for this research include a questionnaire handed to teachers to check their awareness and mainly use of MS, an inventory handed to students to investigate their awareness of these strategies and a classroom observation to evaluate both teachers' and learners' the degree of awareness and appropriate use of the MS in real classroom setting.

#### **3.4.1. Learners' Inventory**

The inventory contains 30 statements to which students are required to answer either yes or no. These statements make three main sections each of which contains 10 statements. The first section is about general MS, the second is related to the receptive skills (listening and reading) and the third deals with some strategies used for the productive skills (speaking and writing). The strategies were chosen to represent the processes of planning, monitoring, problem solving and evaluation for each modality. It is adapted from Oxfords' 1990 SILL.

### **3.4.2. Teachers' Questionnaire**

The questionnaire is four sided in an A3 format. It contains 20 questions split up into three sections. The first section is devoted to personal and professional data; it contains 08 close-ended questions. By answering them, the respondents' other replies can be put into greater context. The second section tackles teaching context data, it contains 08 questions, 03 of them necessitate justification while the rest are close-ended addressing the teachers' practice. The third section is about issues identification and resolution; it contains 04 questions, 03 of which are open-ended while the fourth is close-ended.

### **3.4.3. Classroom Observation**

This tool is used to have a direct contact with the teachers and the learners in real classroom setting and to assess their use and control over the MS. A grid of observation is used.

## **4. Data Analysis**

The captured data from both qualitative and quantitative research tools are presented, analyzed and interpreted in a consistent manner. The documentation and analysis process aimed to present data in an intelligible and interpretable form so as to pinpoint trends and relations in agreement with the research aims. In turn, these trends and relations would enable the researcher to shed enough light on the core issue, viz., the 87 metacognitive strategies awareness and the appropriate solutions to sensitize both students and teachers to the importance of these strategies on learning processes. Three data collection tools were used to contribute to a greater understanding of the topic and to enhance the validity of the study. Once collected, the data from the three tools was generated in the following sections.

### **4.1. Learners' Inventory**

The inventory opens up with two main questions followed by three sections. The first question is about their level while the second is about their sex, the results are as follow:

#### **Section I: General Metacognitive Language Learning Strategies**

This section consists of 10 items that tackle the use of general MS which aim at regulating learning and eliciting information about their awareness of them. Item 01 makes the learners aware of the importance of goal identification for successful language learning, since it helps in deciding about methods to follow to complete language tasks successfully. While item 02 entails a habitual tendency to plan learning 88 tasks, through designing various steps to follow as to fulfil them successfully. Moreover, Item 03 incorporates a general awareness from the learners about the necessity for regular checking of their progress and evolution in target language learning, they try to know their strengths and weaknesses with the aim to remedy them. Additionally, items 04, 05, 06, 07, 08, 09 and 10 show that the students look for the best way to understand their

courses, mainly through finding other sources, through some elaborated forms such as charts, mind maps, tables and diagrams or through asking questions. Students enrol in a continuous search for better ways to achieve better positions in language learning.

### **Section II: Metacognitive Strategies for Receptive Skills**

Section two consists of 10 items that address the use of MS for receptive skills. The first half is dedicated to listening skills while the second is concerned with reading skills. Items 11, 12, 13, 14 and 15 involve the learners in a reflection process of three different phases in the listening activity: the pre-listening stage, the while-listening stage and the post-listening stage respectively. They are of paramount importance for learners because they enable them to predict, revise, order and judge the significance of the data they received to achieve comprehension, or to build further knowledge upon them. On the other hand, items 16, 17, 18, 19 and 20 are MS for reading. They enable learners to imagine and make scene both before and while reading, and reflect a general awareness from learners' part about difficult data while the act of reading is carried.

### **Section III: MS for Productive Skills**

Section three comprises 10 items that approach the use of MS for productive skills. The first half is dedicated to speaking skills while the second is concerned writing skills. Items 21, 22, 23, 24 and 25 implies having a goal and of preparing a bulk of 89 words and phrases to build upon them the ideas to communicate. They reflect learners' consciousness about themselves, the topic, the audience and the language suitable for the task. Their awareness also involves their performance and whether the goal of speaking was achieved or not, that is, self-evaluation. On the other hand, Items 26, 27, 28, 29 and 30 are strategies for writing. They include the most important stages for an effective piece of writing; they tackle learners' awareness about planning and drafting the body of the writing task, the ability to find data and the self-correction skills.

Comments: The collected data reveal that two thirds of the surveyed Master females are conscious of the MS which help them construct their knowledge and develop their thinking skills. Doing so, learning for these students shifts from a mere memorization of facts to thinking process and problem-solving. Differently couched, learning via MS supports students to construct their understanding by themselves in accordance with the constructivist view, nurturing interaction and collaborative work and focusing learning on learners' active learning, i.e., learner-centeredness. Such a class environment is to be created by the teacher helping the learners to shift from plain receptive learners to effective and innovative ones. These are steps leading to help learners learn how to learn, to plan and control their own learning process.

For the rest of the females, around one third, the awareness and use of these strategies remain ignored maybe because they have never been exposed to

such experience. It could be the result of the dominance of the conventional learning models which cannot assist students to develop sufficient understanding of the learned things. In fact, these traditional methods of teaching have failed to generate especially the required behavioural outcomes, abilities and skills to ease learners' appropriate learning.

#### **4.2. Teachers' questionnaire**

Referring to the gleaned results, it can be assumed that the informants' suggestions remain too theoretical /hypothetical since they keep answering the what? Question without tackling the when, why and especially the how questions. In other words, the how question requires practical activities to be dealt with in the classroom to arouse students' awareness and effective use of the metacognitive strategies. The "learning-by-doing" principle (John Dewey) is essentially meant to surpass that dominant status quo of a mere transmitted knowledge to attain the experiential one. In fact, mastering such strategies, similar to learning in general, is not a fact of event, but it takes time.

Decidedly, the effective practice of task-based strategies contributes significantly to the training of students on utilizing such metacognition in and outside the classroom. Since the whole matter of teaching revolves around facilitating learning, then adequate task-based activities are an inextricable component of effective teaching and optimal learning of such metacognition. Explicit teaching of the metacognitive strategies should nurture students' lifelong critical thinking enhancement, viz., thinking creatively, decision-making and problem-solving, targeting students' activity rather than reactivity. In a nutshell, the explicit teaching of the MS should be at the fulcrum of nowadays education.

#### **4.3. Classroom Observation**

The availability of an outside person (i.e., an exterior eye) who can listen, observe, analyze, interpret and comment what is actually taking place in the classroom helps enormously the observed teachers to improve, readjust the level of their delivery and exploit their capabilities effectively. In fact, classroom observation remains an inherent key part of the process of professional decision making. The major aim behind the use of a series of classroom observations, covering the four skills, viz., listening, speaking, reading and writing, is to seize an insightful overview of the learners' and teachers' awareness and effective use of the MS in its naturalistic settings. In other words, this observational research is carried out to make more visible the implementation of the targeted strategies under their natural conditions; a shift from theoretical to practical process.

After observing four teachers at Ibn Khaldoun University, it can be noticed that these classroom observations helped the observer to get an insightful idea on the issue under investigation, viz., MS awareness and effective implementation. In a nutshell, it can be attested that these aforementioned strategies are not explicitly taught during classroom practicum.

#### **4.4. Data Discussion and Interpretation**

The study highlights a number of issues relevant to university EFL teachers' and learners' awareness of MS. This section aims at discussing the results in the previous figures, the interpretation of the findings will enable the researcher to answer the research questions as well as to confirm or disconfirm the hypotheses. The results of the given inventory indicate that university EFL students reported a good use of MS, with a general tendency towards some strategies more than others. Moreover, it is revealed that, overall; the use of a large number of MS at high rates is reported by female students. The results may require some extra efforts from learners' part to expand their repertoire of using MS and the quality of strategies used, by choosing more specific MS to satisfy the needs of each stage of metacognition use. Although not highly significant, differences in strategy use, females use MS more than males, but this difference may be found valuable qualitatively speaking. This implies that not only the use that makes a distinction between the two genders, but rather the quality of strategies used.

#### **Conclusion**

As the study's main concern was to find out if university teachers and learners in an EFL context are aware of and effectively use MS, this foregoing chapter offers the key findings of the practical side of this study. Teachers' limited awareness and learners' unawareness need an organized framework to be well-developed then regularly and appropriately used. The limitations are stated in respect of what was done by the researcher as practice through, and some suggestions are introduced for future research avenues in the area.

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