

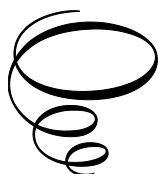
Embedding Cognitive and Metacognitive Reading Strategies Instruction in Tertiary Education

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By

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ABBREVIATIONS

CLSs:	Cognitive Learning Strategies
CSs:	Cognitive Strategies
CRSs:	Cognitive Reading Strategies
CMRSI:	Cognitive and Metacognitive Reading Strategy Instruction
CMRSs:	Cognitive and Metacognitive Reading Strategies
CRSU:	Cognitive Reading Strategy Use
EFL:	English as a Foreign Language
ESI:	Explicit Strategy Instruction
ESL:	English as a Second Language
FL:	Foreign Language
FLHS:	Faculty of Letters and Human Sciences
ISI:	Implicit Strategy Instruction
L1:	First Language
L2:	Second Language
L3:	Third Language
LSs:	Learning Strategies
M:	Mean
MLSs:	Metacognitive Learning Strategies
MSs:	Metacognitive Strategies
MRSs:	Metacognitive Reading Strategies
MRSU:	Metacognitive Reading Strategy Use
N:	Total Number
RQ:	Retrospective Questionnaire
RSs:	Reading Strategies
RSI:	Reading Strategy Instruction
RSU:	Reading Strategy Use
RT:	Reciprocal Teaching
SASSs:	Socio-affective Strategies
SALSSs:	Socio-affective Learning Strategies
SL:	Second Language
TL:	Target Language

GENERAL INTRODUCTION

This book is sturdily based on my unpublished doctoral dissertation that was defended in 2015. It is intended to put a bright spotlight on the correlation between the explicit instruction of cognitive and metacognitive reading strategies (CMRSs) and reading achievement in English (L3), as well as on the role of metacognitive knowledge in foreign language learning within the Moroccan EFL tertiary setting. My thesis was conducted between 2010 and 2015 and it incorporates viable insights and intriguing conceptualizations that pertain to the learnability of cognitive and metacognitive reading strategies (CMRSs) and the key value of metacognitive knowledge in coping with learning-relevant tasks (i.e., reading). Thus, the notion of converting my doctorate thesis into a conceptually insightful, comprehensive book came to my mind with a view to making it largely accessible not only to the prospective Moroccan scholars/ researchers interested in metacognitive reading strategy instruction, but also to the international academic and educational community.

The marked shift in the field of psychology from the behaviourist approach to the cognitive one has had an increasing impact on SL/FL reading. Granted this, the subject matter of this book is addressed within the general framework of cognitive theorizing (e.g., Shuell, 1986; Matlin, 2005). For the sake of illustration, given the fact that reading is conceptualized as a mental process entailing the use of a vast range of strategic techniques, it is essential that these involved strategies be ascribed the prime importance in facilitating the process of developing sense of the written text. This explicitly uncovers that textual processing and analysis is dependent on effective reading strategies (RSs) that constitute the key means for attaining more efficient and fuller comprehension. Thus, the significance of the book lies in its attempt to look into (meta) cognitive strategies of reading from the learnability standpoint.

Many reading theorists and educational psychologists (e.g., Goodman, 1982; Kendeou et al., 2014; Smith, 1982) claim that reading is an active process in which the reader utilizes efficient strategies to understand the

textual information. This reflects the view that the receptive skill of reading, which represents a huge part in the language learning process in any academic context, can be conducted in a successful way only if student-readers are highly acquainted with the underlying strategies that are deemed indispensable footsteps towards the achievement of textual comprehension. This being said, it is noteworthy to claim that there exists an interactive interplay between the reading strategy use (RSU) and the meaning-getting process.

In this regard, the existing correlation between metacognitive theory, as a new area of cognitive psychology, and reading strategies (RSs) has earned intense interest among many researchers (e.g., Griffith & Ruan, 2005; Jiménez et al., 1996; Li, 2010; Smith & Dauer, 1984). Given this state of affairs, it can be plainly admitted that the engagement in the reading process is governed, in large part, by metacognitive thinking which the overall literature considers a crucial variable in the meaning-construction process (e.g., Brown, 1981; Garner, 1987). In essence, thinking metacognitively while attempting to develop efficient sense of textual content implies methodical recourse to both cognitive and metacognitive strategies on the part of learners. These kinds of strategic reading moves, if used in a coordinated manner, can guarantee a great measure of efficacy at the level of comprehension achievement. This fact calls for the teaching of (meta) cognitive RSs as an effective way towards the enhancement of EFL learners' metacognitive abilities and reading potential.

Given the premise that the comprehensibility of text passages entails cognitive efforts and mental processing (e.g., Rapp & van den Broek, 2005) on a large scale, the claim that a successful approach to the textual content rests upon the use of basic reading 'heuristics' is to be substantiated. So long as the rationale behind synthesizing any written discourse is the obtaining of an effective understanding, the deployment of text-related strategies is a master key to unveiling the writer's/author's core intentions and views. It is manifest, in actuality, that the EFL learners make use of a number of strategies during text analysis and interpretation. This has been proven by a large corpus of previous research concerned with the identification of learners' reading strategies. Therefore, differing classifications of reading strategies (RSs) have been brought forward by many researchers (e.g., Block, 1986; Davies, 1995; Mokhtari & Reichard, 2002; Olshavsky, 1976, 1977). Yet, this procedure of profiling the frequently used text-processing strategies could not present any substantiated evidence as to whether the identified strategies developed by

EFL learners were the result/outcome of their exposure to instruction or of spontaneity and maturity.

As cited above, the current explosion of research pertaining to second language reading has begun to place much emphasis on the reader's strategies (e.g., Carrell et al., 1989; Davies, 1995). These strategies, employed by learners in an attempt to get the sought meaning included in the printed text, were extensively researched and dealt with from a more general, broader perspective. Nonetheless, reading strategies, namely cognitive and metacognitive ones, are currently under-researched and are still under increasingly critical discussion among many reading specialists and theorists. In this particular sense, it is worth noting that the learnability of (meta) cognitive RSs in the Moroccan context can enable EFL university students, skilled and unskilled, to achieve an effective comprehension of diverse written texts (e.g., narrative, expository, etc.). Therefore, the book, which is restricted to foreign language (FL) reading comprehension in particular, and the field of cognitive psychology in general, is concerned with the area of (meta) cognitive reading strategy instruction (CMRSI).

It is worthy of consideration that the promotion of effectiveness at the level of reading comprehension among EFL learners can only come into effect if reading strategy instruction (RSI) takes place. In explicit words, it is not sufficient to maintain the view that Moroccan EFL university learners can naturally and spontaneously foster (meta) cognitive RSs along the continuum of their academic studies, but it is necessary to stress the premise that strategy development and application can be readily reflected by EFL learners once they are exposed to explicit strategy training. In this way, the learners' awareness of RSs can be heightened to a substantial degree, and thus conducting the reading act in so effective a fashion. Based on this, the current study is an attempt to put to the test this stated view with the purpose of assuring either the marked efficiency or the apparent ineffectiveness of the reading strategy instruction process.

This book is concerned with the investigation of (meta) cognitive strategies of reading implemented in tackling different text types (e.g., narrative, expository). Its overarching goal is to show how Moroccan EFL first-semester university students, as dynamic, independent learners, can learn these strategies and deploy them in the act of processing and analyzing written discourse. Basically, in an attempt to determine whether explicit instruction in (meta) cognitive RSs can positively improve the university students' strategy use and performance in making complete

sense of written texts, the current study involves a control and an experimental group.

The underlying impetus for tackling this topic stems mainly from the assumption that EFL university students, especially those in the first-semester, utilize more cognitive than metacognitive strategies in their reading. In fact, based on some university teachers' attitudes, the students' grades in the reading comprehension tests, and the frequent complaints from the student-readers, it can be generally deduced that EFL first-semester learners lack some reading efficiency and proficiency as to coping with EFL written texts. This might be an indication that they rarely, if ever, make use of metacognitive reading strategies (MRSs) when they read any given academic written input. Thus, the book addresses this issue in its entirety. It adopts an experimental treatment which provides EFL university learners with an adequate instruction in (meta) cognitive RSs as the analysis of textual information depends, to a higher degree, on the combined use of these strategies (i.e., cognitive, metacognitive). Indeed, the cognitive and metacognitive RSs complement each other and do effectively contribute to the comprehension of the message included in the written discourse.

Further, it is true that Moroccan EFL university learners are exposed to a large body of written literature throughout their academic studies. This does very often pose a certain difficulty for the student-readers not only because they lack the basic reading skills and capabilities to understand the incorporated content, but because they lack awareness and make insufficient use of the effectual strategies (e.g., inferring, paraphrasing, planning, monitoring, evaluating). In other words, most of the written discourse dealt with at the university level requires, at times, a sophisticated kind of critical and effective reading on the part of the EFL learners. Actually, it is the proper use of (meta) cognitive RSs that can guarantee for learners an efficient way of approaching a given written text, and thus accomplishing the positive outcomes. In this regard, strategic reading, as claimed by Pressley et al. (1989), is characterized as playful, conscious, and flexible in its core essence.

Also, it is commonly admitted that being strategic and independent readers is an important precondition to academic success (Bharuthram, 2012; Hong-Nam & Leavell, 2011; Kolić-Vehovec et al., 2011). Clearly, the methodical use of effective strategies in the course of reading written texts can both facilitate the comprehension process for the student-readers in various ways and improve their reading capabilities to a greater extent. It

is plausible to state, then, that the lack of an appropriate understanding of the content of written materials can be attributable to the inefficient use of RSs. Most EFL learners do not seem to apply the efficient RSs that can ensure a thorough understanding. They only employ some strategic processes, often unconsciously, so as to make sense of the textual content in a general way. This engenders a certain type of inaccuracy and ineffectiveness in terms of apprehending the target message conveyed by the author/writer via his/her text. Accordingly, it can be assumed that the use of CMRSs is a potentially promising means for attaining an accurate, comprehensive understanding of the text.

In effect, the topical theme of this book is couched within the scope of the lively metacognitive theory. To illustrate, it tackles two principal typologies of RSs. The first type pertains to CRSs (e.g., predicting, inferring, main ideas selection, visualizing, underlining, note taking, paraphrasing) EFL learners use with the overall purpose of comprehending the meaning of the text. As for the second type of RSs, metacognitive ones (e.g., planning, monitoring, evaluating), it refers to the processes that are undertaken by the learners in an attempt to guarantee that the act of comprehension proceeds in the right pathway. The latter kind of strategies is deemed necessary in coping with the different types of written texts. This is clearly corroborated by McLain et al. (1991) where it is maintained that a reader's awareness and monitoring of the comprehension process is critical in the way that he/she can keep track of the progressive development of understanding while being involved in textual reading.

Explicitly, this book highlights the learnability of (meta) cognitive strategies of reading among EFL first-semester university students in the Moroccan context. This process of learning and nurturing these strategies can only come into effect if the target subjects are provided with an explicit instruction in the importance, typologies, and application of those text-processing techniques. In so doing, the learners will not only develop and strengthen their metacognitive knowledge as concerns RSs, but they will also promote their faculty in applying them to a broad variety of text passages (e.g., narrative, expository).

Indeed, the specific issue targeted in this book reveals the authentic essentiality of (meta) cognitively-oriented RSs as facilitating agents for enabling EFL learners to develop deeper understanding of what the author/writer intends to convey via his/her text. In this perspective, many researchers (e.g., Barone & Xu, 2008; Cook & Mayer, 1983; Forrest-Pressley & Gillies, 1983; Garner, 1987; Montague & Tanner, 1987) call

for the use of these specific types of RSs (cognitive and metacognitive) to enhance text comprehension on a massive scale. This attests to the clear-cut premise that learning these strategies can contribute to the unraveling of the intended meaning of diverse genres of texts (e.g., narrative, expository, etc...) to which EFL university students, as mature learners, are regularly and invariably exposed.

A significant characteristic of this book is the stated suggestion that RSI can be an invaluable medium for the development of the reading competency and proficiency of EFL learners. If the latter are provided with adequate training in the application of (meta) cognitive strategies to a diversity of written passages, it is markedly evident that they will be strategic, competent, and critical readers. Therefore, the book unravels that the inclusion of cognitive and metacognitive reading strategy instruction (CMRSI) in the course of reading comprehension at the university level contributes to the achievement of the intended positive outcomes as to textual reading and meaning comprehension. Within this particular framing, it is assumed that the teaching of (meta) cognitive text-related strategies can be an essential precondition to assisting EFL university students, namely at the first semester level, in the hope of understanding different written texts.

Regarding the methodology adopted for the conduct of the study upon which this book is founded, it is axiomatic that a quasi-experimental design involving two EFL groups (N=113) under realistic conditions was opted for. The first group, the experimental one (N=63), received thorough instruction in (meta) cognitive strategies pertaining to textual reading and meaning construction for a semester-long period (Autumn Semester: 2012-2013). The second one, the control group (N=50), remained intact since it did not receive any (meta) cognitive reading strategy training. Hence, the entire content of the book under focus is largely dependent on the use of deductive reasoning as a bottom-line for exploring the perceived and marked effect of the experimental treatment on the target EFL learners' reading achievement and finding out the causal connection existing between these two variables (i.e., experimental treatment, reading achievement).

Supporting the assumption that cognitive and metacognitive reading strategies instruction (CMRSI) can really enhance Moroccan EFL learners' strategy use in text processing and comprehension, it was planned that the study would be based on a pre-post-test design which involves the administration of reading comprehension pre- and post-tests to both the

control and treatment groups coupled with the retrospective questionnaire (RQ). These types of reading tests, along with the RQ, are a means of substantiating the efficiency of the conducted experiment by demonstrating whether or not the target EFL learners belonging to the experimental group had benefited from CMRSI, and thereby achieved significant reading gains. Therefore, a quasi-experimental study can only be successfully undertaken with the assignment of the pre- and post-test to both the strategy-instructed and the non-strategy instructed groups. In fact, pre- and post-intervention reading tests form the requisite instruments intended to measure the trained subjects' developmental betterment in strategic moves and reading performance.

As to the structural framework of the present book, it is comprised of four major chapters. The first and second chapters are exclusively devoted to the literature review and the theoretical background. The first chapter is made up of three sections. The first section is concerned with the definition of some thematic constructs upon which the thesis's core content is premised. As for the second section, it deals with the processing models involved in the reading comprehension act. The third section puts forth the importance and types of learning strategies (LSs) utilized in the processes of learning as well as reading in a second language (SL).

Concerning the second chapter, which illuminates the role of (meta) cognition in EFL reading comprehension, comprises three sections. The first section tackles the inter-correlation bonding EFL reading and metacognition. It features both the cognitive view and metacognitive perspective that underlie the reading act. The second section copes with the (meta) cognitive strategies used in EFL reading. It reflects the importance of strategy use and the classification of reading strategies (RSs) that contribute to the construction of text meaning. As to the last section, it presents a plausible account of the (meta) cognitive reading strategy instruction (CMRSI). It highlights the importance and types of strategy instruction and refers to some conducted experimental studies relative to reading strategy training.

As to the third chapter, it is dedicated to the presentation of the findings relevant to the study conducted. In essence, an elaborate, thorough analysis of the empirical findings is brought forward. In fact, all the pertinent data set forth in this chapter are intended to unveil the conceptualizations that are inextricably related not only to the role of CMRSI in enhancing EFL learners' strategy use and reading achievement,

but also to the (meta) cognitive reading strategy awareness, and the comprehension monitoring process.

The fourth chapter presents an in-depth, detailed discussion of the primary outcomes and findings of the present study. In more succinct terms, this chapter formulates an overall framework within which more plausible explanations and plainer justifications are given in an attempt to unearth the potential held by CMRSI in optimizing the learners' reading performance in English (L3). In addition, a vast range of pedagogical implications associated with EFL reading strategy instruction at the university level are brought up and discussed.

It is hoped that this book will be particularly useful for educationalists and researchers who are intensely interested in metacognition and L3 textual processing. Further, the book occupies a pivotal part in alerting educators, teachers, university professors, university students, language inspectors, and scholars to the perceived potentiality of cognitive and metacognitive reading strategy instruction (CMRSI) in the evolving field of higher education.

CHAPTER ONE

CONCEPTUAL FRAMEWORK

I.0. Introduction

This chapter provides the theoretical foundation upon which the current study is strongly predicated. It is divided into three sections. The first section offers the definition of some requisite concepts closely related to the reading process. In essence, the defined terminologies incorporate strategies, cognitive psychology/cognition, and metacognition. They represent the core elements on the basis of which the current thesis is conducted.

Moreover, information processing, executive control, schemata, and reading comprehension, as dynamic cognitive processing models relative to text reading, are also clearly profiled and delineated in the second section. They are the real prototypical embodiment of the mental procedures involved in the reading process. In fact, each one of these constitutive components is given succinct, yet sufficient elaboration from a cognitive and psychological perspective.

The third section tackles the classification of learning strategies (LSs). It reflects the significance of these strategies used in diverse learning tasks. Further, the section sets forth the major types of the strategies of learning which fall into cognitive strategies (CSs), meta-cognitive strategies (MSs) and socio-affective strategies (SASs). More specifically, CSs are categorized into rehearsal, organizational and elaboration strategies. As to MSs, they encompass planning, monitoring and evaluating. As for the SASs, they reveal both the social and affective dimensions and aspects that pertain to the learning process. All these strategies serve an essentially great part in providing learners with the necessary means for dealing with a broad spectrum of learning tasks.

I.1. Basic Terms & Key Concepts: Definition

This section is a fundamentally conscious attempt to provide basic definitions of some relevant terms (e.g., strategies, cognitive psychology/cognition, metacognition,) which are part of the field of cognitive psychology and SL/FL reading. Clearly, these perceptual notions defined interrelate in many ways. They constitute the robust foundation upon which reading, as a cognitive undertaking, is firmly based.

I.1.1. Strategies

The origin of the basic concept of strategy, according to Oxford (1990), is related to the Greek term ‘strategia’ which was specifically implemented in and exclusively restricted to the military sphere. In fact, a strategy is identified as a “*plan of action or policy designed to achieve a major or overall aim*” (*The New Oxford Dictionary of English*, 1998, in Macaro, 2006). This explicit definition succinctly reflects that a strategy, as an essential step towards the accomplishment of a certain task, is goal-oriented. It can be utilized by learners, in varying ways, with the main objective of achieving comprehension. On this basis, many educational researchers and reading theorists tended to bring the term ‘strategy’ into the field of education to refer to the procedures and techniques that are involved not only in the process of language learning, but also within the area of textual reading.

Strategies are viewed as “*potentially conscious and controllable activities*” (Pressley et al., 1985), i.e. by being engaged in a cognitive task, EFL learners, especially mature ones, deliberately select and employ strategies with the purpose of facilitating the process of reaching an adequate comprehension. In fact, the use of strategies is inextricably interwoven with both simple tasks which require a small amount of effort and highly complex tasks that entail concentration and focused attention. This shows that the making use of strategies, as important footsteps to fully process information and make learning tasks easier, necessitates intention and effort on the part of the learner. In this sense, Ellis (1994) notes that if strategies become so automatic that learners are no longer conscious of using them, they will lose their significance as strategies. This reveals the marked premise that the component of ‘consciousness’ is primarily associated with and basically underlies the use of strategies.

Within this framework, the underlying claim whether strategies are intentional or automatic, as noted by Flavell et al. (1993), constitutes a critical point of disagreement among researchers. Clearly, given that strategies can only be effective if they are used under the control of the learner, they certainly require some degree of awareness in order that the task be undertaken with greater efficiency. Actually, intentionality in the use of strategies in many cognitive tasks is agreed upon by most researchers (e.g., Hsiao & Oxford, 2002; Oxford & Cohen, 1992). Yet, other researchers (e.g., Barnett, 1989; Davies, 1995; Kletzien, 1991) strongly adhere to the view that strategies can be both conscious and unconscious. For them, strategies are performed by learners, while approaching cognitive tasks, in both a controlled and automatic manner. This is postulated by Davies (1995) who affirms that a strategy is a physical and mental action used consciously or unconsciously with the intention of facilitating text comprehension and learning.

However, a seemingly essential and defining characteristic of the concept of strategy is self-regulation. This stated fact is corroborated by Weinstein and Hume (1998) who note that “*strategic learners are able to self-regulate by selecting and integrating strategies appropriate to the specific learning goals*” (p.36). To illustrate, it is obvious that in tackling diverse learning tasks, ‘self-directed’ learners make use of effective strategies so that they can plan, check, regulate, and evaluate their progress towards achieving an overall comprehension of the studying task. This shows that the appropriate selection and effective use of strategies depend, to a considerable extent, on the process of self-regulation which refers to the effort exerted by learners to deepen, monitor and improve their own learning act (Corno & Mandinach, 1983).

In the context of reading, Block (1986) admits that strategies “*indicate how readers conceive a task, what textual cues they attend to, how they make sense of what they read, and what they do when they do not understand*” (p.465). In principle, strategies are primarily made use of by learner readers with a view to constructing a complete understanding of a particular written text. In this regard, strategies do assist readers to undertake their reading task in a successful manner by relating their previously acquired knowledge to the text content and by attempting to predict and infer the sought meaning. Additionally, selecting the main ideas, paraphrasing, monitoring the process of comprehension and questioning the meaning of certain ideas and viewpoints raised in the text are also other strategies that readers employ in an attempt to attain comprehension. Plausibly, strategies, from the reading perspective, are the

mental operations via which readers purposefully cope with the text and make sense of what they read (Barnett, 1989).

1.1.2. Cognitive Psychology & Cognition

Prior to providing an elaborate and succinct definition of the concept of cognition, it is crucial to refer to the field of cognitive psychology. The latter, as noted by Matlin (2005) has a huge impact on a wide variety of areas pertaining to educational psychology (e.g., Halpern & Hakel, 2002; Rayner et al., 2001), social psychology (e.g., Kunda, 1999), and clinical psychology (e.g., Corrigan & Penn, 2001). In essence, cognitive psychology, as an influential domain, dates back to the period of the fifties during which many educational psychologists and theorists became disappointed with the behaviourist approach which does not adequately account for some processes such as the thoughts and strategies used to solve a problem (Bechtel et al., 1998). In this respect, cognitive psychology is associated with the study of the major processes that are involved in any learning endeavour.

Basically, as a perceptual and mental process, cognition, which constitutes a substantial part in cognitive psychology, refers to the act of gaining knowledge and achieving comprehension. This is emphasized by Wood (1983) who states that cognition is *“the act or process of knowing, a property of the individual”* (p.4). It essentially allows learners to perceive and conceive the underlying meaning of the ideas and concepts. Further, cognition enables learners, while being engaged in a learning task, to process, analyze and acquire information for the primary purpose of constructing a sufficient understanding. This, indeed, entails a great amount of attention and thinking on the part of the learner, as an active recipient of knowledge. Thus, cognition can be described as the acquisition, storage, transformation and use of knowledge (Matlin, 2005).

As a matter of fact, many cognitive scientists and educational psychologists view cognition as *“a clump of mental acts or processes that come under broad headings such as remembering, perceiving, learning and reasoning”* (Menary, 2007, p.10). These processes, which are purely cognitive, increasingly require from learners a high degree of critical thinking to efficiently analyze and synthesize the content, namely when it comes to the comprehension of a particular written discourse. This apparently evinces that the human mind, which represents cognition in many various aspects, *“is conceptualized as a complex system of interacting processes that generate, code, transform, and otherwise*

manipulate information of diverse sorts” (Flavell et al., 1993, p.20). Within this framework, it can be assumed that the achievement of an adequate textual comprehension, as a cognitive task, is closely interrelated to and highly dependent on the use of effective processes and strategies.

Hence, it is apparent that conducting and performing any cognitive task (e.g., text analysis) involves cognitive abilities, capabilities and processes that are deemed as facilitative factors in the operation of reading in particular, and learning in general. In effect, it is through cognition that different types of knowledge are interpreted, understood and acquired and that many LSs are implemented in a successful way.

According to Piaget (1983), cognition amply reflects two very simultaneous and complementary basic characteristics which are assimilation and accommodation. The first typical characteristic, namely assimilation, *“refers to the process of adapting external stimuli to one’s internal mental structures”* (Flavell et al., 1993, p.5). For the sake of clarification, assimilation, as a mental process, means processing, interpreting and comprehending a particularly given piece of information. This achievement of comprehension depends, to a great extent, on learners’ background knowledge which plays an increasingly important role in fully assimilating and making sense of the sought meaning.

As for the second characteristic, which pertains to accommodation, it is intimately intertwined with the process of adapting the mental structures to the structures of the stimuli (Flavell et al., 1993). It generally refers to the way learners match their previously acquired knowledge to the given new information with the purpose of achieving a thorough, complete understanding of the content. More explicitly, Piaget (1983) claims that these cognitive aspects, assimilation and accommodation, are of great and equal significance and should occur together in an interactive way. They, in essence, occupy a crucial part in enabling learners to cope with cognitive tasks and come up with a sufficient interpretation of the ideas and facts. All in all, assimilation and accommodation are closely interdependent processes which formulate the solid foundation of cognition.

1.1.3. Metacognition

The term metacognition, which is considered as a conceptual and mental activity, dates back to the period of the seventies and eighties in which Flavell (1971) focused on the study of human memory. It basically denotes

“one’s knowledge concerning one’s own cognitive processes and products or anything related to them, e.g., the learning relevant properties of information or data” (Flavell, 1976, p.232). To illustrate, metacognition, as an effective way of reasoning, is the potential capability of the learner to think carefully, critically, and methodically about the cognitive processes that are involved in certain academic tasks which necessitate a great amount of attention. In effect, it apparently reflects an awareness of the mental processes and strategies required for performing any cognitive endeavour (Schmitt & Newby, 1986).

In seeking to differentiate between cognition and metacognition, Garner (1987) maintains that *“if cognition involves perceiving, understanding, remembering, and so forth, then meta-cognition involves thinking about one’s own perceiving, understanding and the rest”* (p.16). This, in actual fact, reflects that metacognition, which is also referred to as ‘thinking about thinking’, does assist readers, as potential learners, to regulate and control their thinking processes with the primary purpose of achieving successful performance in a particular cognitive task. In clearer terms, given that cognition and metacognition are markedly different in the way that cognitive tasks are directed and regulated by metacognitive thinking, they are inextricably interrelated (Msaddek, 2023). They both play an essential role in fundamentally contributing to an effective comprehension of the intended meaning. Hence, thinking about one’s thinking is the core of strategic behaviour (Paris et al., 1986).

Brown (1980), on the other hand, defines metacognition as *“the deliberate conscious control of one’s own cognitive actions”* in undertaking the reading task. It occupies a crucial part in enabling readers to be entirely aware of the process of understanding written texts by applying the effectual strategies that constitute the basic footsteps towards accomplishing the textual comprehension. In a very similar way, and in an attempt to expound the concept of metacognition, Dewitz et al. (1987) state that this term refers to the readers’ awareness of their level or degree of understanding and their ability to regulate the process of comprehension as they proceed through texts. This clearly shows that, by involving themselves in a sophisticated kind of metacognitive thinking, readers will be able to conduct, direct, and guide their reading process with greater effectiveness and facility.

For clarity purposes, metacognition consists of two interrelated components which are: knowledge of cognition and regulation of cognition (Baker & Brown, 1984a). The first component *“is concerned with what a person*