

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the study**

The importance of English Language acquisition for proficiency in other school subjects cannot be overemphasized. This is because there is hardly any school subject that the instructions are not written in English in Nigeria. This expertise in the English Language is very important and may guarantee success in other subjects. Acquiring sufficient knowledge of English language is important for educational, economical and national development of a nation. In recognition of the importance of English language for enhancing educational attainment as well as for improving communication ability of citizens, the subject has become a core subject in the school curriculum (Federal Government of Nigeria, 2004). For instance, as a prerequisite for university admission, it is compulsory for students to pass the English Language at credit level. This also explains why many parents are determined to see that their wards pass at credit level and above in English language.

However, one of the current educational concerns is that of under achievement in English language in public examinations (Kolawole 1998, Kolawole & Dele, 2002). One of the reasons often ascribed to this poor trend has been poor foundation in reading skills in English Language at the primary and secondary school levels, despite the fact that English Language is one major subject which demands and instills reading culture in students. The comprehension aspect of the language is one that is particularly designed for this purpose, such as ability to read and understand.

Comprehension is an essential aspect of English Language in which students are required to do well before obtaining good grades in the subject as the other aspects of English language such as grammar, structure and composition, are all based on comprehension. However, it has been observed that students, even after given all the necessary pedagogical drills, still encounter some challenges in adequately treating English comprehension passages (Omoegun, 1983).

These challenges include: reading to learn, evaluation of understanding and ability to answer questions correctly. Students, who do not have sufficient working knowledge, are those that usually encounter these challenges. This working knowledge can be achieved through the teacher who teaches students to reflect on how they think, learn, remember, perform academic tasks and the teachers' repeatedly emphasizing and demonstrating actions that illustrate how students can be responsible for and can control their own outcomes in their everyday learning. Researchers such as Kuhn, (2000), Hartman, (2001) have suggested some fundamental ways to address this problem of comprehension through the use of ***metacognition***.

Metacognition is one's knowledge about the factors that affect cognitive activities which consists of both monitoring and regulation. Metacognition refers to the actual monitoring and consequent regulation and orchestration of these processes in relation to the cognition object or data on which they bear, usually in service of some concrete goal or objective (Flavell, 1979). Metacognition is any kind of cognitive transaction with the human or non-human environment, where a variety of information processing activities go on (Flavell, 1979). The distinction between cognitive and metacognitive knowledge may be in how the information is used, more

than a fundamental difference in processes. Hacker (1998) also sees metacognition as the knowledge of one's own cognitive and affective processes and states as well as the ability to consciously and deliberately monitor and regulate these processes and states.

Researchers such as Brown, Bransford, Ferrara, & Campione, (1983) emphasize different aspects of metacognition which refers to two distinct, but related issues: awareness and knowledge of self as learner, and conscious self-control and self-regulation of cognition. In essence, a metacognitive learner must understand his strengths and weaknesses in learning, and control how he will approach a problem. People tend to perceive barriers to student learning as lack of intelligence or motivation from teachers, when in reality, the student may lack awareness of the causes of the barriers he is facing. Metacognition involves students' awareness and understanding of their learning skills, performance, preferences, barriers and goals. Metacognitive skills include taking conscious control of learning and selecting strategies (self-awareness), monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies (monitoring), and changing learning behaviours and strategies when necessary (planning).

In the context of reading, metacognition is the control executed by readers on their ability to understand a text, which involves what one is thinking about and what one is doing while reading. Reading successfully goes beyond fluency and word recognition but relies heavily upon comprehension of text. Upon encountering a reading task, one needs to first clarify the purposes of reading and understand what the task demands. Based on the information obtained in the first step, student plans for the task, by retrieving the relevant background information, setting up the goals

of reading, and selecting proper strategies from his repertoire of reading strategies. In addition, during the process of reading, teachers and students must continuously monitor the ongoing activities to determine whether comprehension is occurring. A strategically competent reader continuously engages himself in self-questioning to determine whether comprehension and the goals are achieved; if not, he is able to revise the original plan and adopt compensatory actions to achieve comprehension (Xiao, 2005). This suggests that there are basic skills which are innate in the learner that have to be harnessed before comprehension takes place.

The metacognitive skills acquired in reading can promote the acquisition of language skills such as listening, speaking and writing. Some secondary school students find it difficult to read and understand despite the fact that reading is indispensable. Some show carefree attitude towards reading. Adewole (2001) asserts that the aim of any reading programme is to lay a strong foundation that can benefit pupils throughout their lives in academic pursuits. Reading successfully goes well beyond fluency and word recognition but relies heavily upon comprehension of text. Since reading is a meaning-making task, any behaviour used to enhance students' understanding help in creating more effective reading. Therefore, students' metacognitive skills could be enhanced through direct explicit instruction and reading strategies.

One needs direct explicit instruction strategy in order to foster his metacognitive knowledge and skills (Xiao2005). Readers have the capacity to control the process of reading and this largely affects the ability to learn from text (Block, 2002). This control involves thinking about the actual process of reading. Awareness of metacognitive skills (self-awareness, monitoring and planning) can be gleaned through instruction such as the *direct explicit instruction*. The purpose of direct

instruction is to provide explicit explanations on the notion and construct of metacognition so that students who used to be, most of the time, unaware of their own cognitive activities will become aware of their mental actions when they perform cognitive tasks. The direct explicit instruction strategy of metacognition should be regarded as a strategy that 'provides learners with knowledge and confidence that enables them to manage their own learning and also empower them to be inquisitive in their pursuits' (Paris & Winograd, 1990).

Reading strategies are often categorized as those behaviours designed to help students before, during, and after they read. Dike (2006) posits that proficient reading depends on the ability to recognize words quickly and effortlessly. If word recognition is difficult, students use too much of their processing capacity to read individual words, which interferes with their ability to comprehend what is read. A good reader has a better opportunity for greater achievement because he recognizes the words quickly and effortlessly as a sequence of a textual whole. Ojo (1993) found that the major causes of students' poor performance in English and other school subjects is their inability to read effectively, which, in turn, is largely due to their prevailing learning attitude toward reading, inability to apply suitable strategies for reading and the teachers' employment of the traditional methods of teaching, which, according to critics, are archaic and, as a result, are no more compliant to the contemporary developmental strategies of reading skills and ability. Mokhtari & Reichard (2002) designed several metacognitive reading strategies for improving comprehension. These include (1) the Global Reading strategies, which include-setting purpose for reading, activating prior knowledge, checking whether the text content fits purpose, predicting what text is about, confirming predictions,

previewing text for content, deciding what to read closely, using context clues, text structures and other textual features to enhance comprehension. (2) Problem-Solving strategies- include reading slowly and carefully, adjusting reading rate, pausing to reflect on reading, rereading, and visualizing information read, reading text out loud, and guessing meaning of unknown word. (3) Support Reading Strategies include- taking notes while reading, paraphrasing text information, revising previously read information, asking self-questions, using reference materials as aids, underlining text information, discussing reading with others, and writing summaries.

The metacognitive processes in reading are of two categories. The first is the knowledge about cognition. This involves knowledge of reading strategies which tend to remain constant irrespective of the situation. The second is the regulation of cognition. This encompasses the purpose of reading, the ease or difficulty of the text and perceived need for particular strategies. How successful a reader is will depend on his abilities, his knowledge and understanding of themselves as readers, their purposes and assessment of the reading task, and their knowledge of when and how to use reading strategies. Metacognitive skills provide overall plan to gain meaning from text.

While it appears that metacognitive skills are difficult to acquire, researches have demonstrated that they can be taught and learnt in a classroom. What this suggests, therefore, is that *metacognition* can be viewed as an education-based model. As an education-based model, instructional strategies (the explicit instructions and reading strategies) can be used to improve metacognitive skills. This education-based model of metacognition can be incorporated in any classroom environment if the intent is

to improve the academic, and career success of students in English Language. Intervention programmes on metacognition using the explicit instruction and reading strategies can be adapted to improve poor academic performance. Brown, (1983) advocates that the task of educators is to acknowledge, cultivate, explore and enhance the metacognitive capabilities of all learners. Teachers can help their students learn from reading: they can encourage students to take an active role in reading. The goal is to develop active, independent learners.

## **1.2 Statement of problem**

Students' knowledge and belief regarding their study strategies has been a major source of concern to stakeholders in the education sector. Majority of the students do not have the ability of knowing the limits of their own learning and memory capabilities. They also lack the knowledge of what learning tasks they can realistically accomplish within a given period. The ability of knowing which learning strategies are effective, planning an approach to a learning task and using effective learning strategies to process and learn new materials seem to be lacking among the students. Worse still, their ability to monitor their own knowledge and the use of effective strategies for retrieval of previously stored information seem to be lacking whereas teachers' expectation for students performance are always high.

The curricula at secondary school level seem not to be designed to address this inherent problem in spite of the observed importance of knowing which learning strategies are effective in determining comprehension skills and excellent performance in English Language. The more students know about effective learning strategies, the greater their metacognitive awareness and the higher their academic performance is likely to be. Students who use metacognitive strategies are likely to undergo conceptual change when such change is warranted. Unfortunately many students are unaware of how they can best learn and remember information (Ormrod, 2000).

At the secondary school level students are asked to learn more information and to process it in a sophisticated way, thus the simple learning strategies that pupils develop in primary school seem to become less effective with each passing year. Yet most often, teachers seem to teach academic content, without teaching concomitant strategies to learn them. As a result, students seem to have little knowledge of how they can best study and learn, thereby seem to have difficulty mastering the content that teachers teach. Consequently, students do not learn successfully, hence may not know how to improve the chances of their learning outcomes.

Students can be helped to be successful learners if when teaching specific academic content (reading comprehension), they are made to learn how to develop and use effective learning strategies. There is a gap in research on how to use learning strategies to enhance metacognitive skills and improve performance in English language among secondary school students. It is therefore necessary to use explicit instruction and reading strategies as intervention programmes to address the issue



of improving metacognitive skills (self-awareness, monitoring and planning) in order to improve performance in English language.

However, the precise ways to improve the level of metacognition on academic performance so as to obtain optimal success is far from being achieved; as researchers have not carried out enough study on the effectiveness of explicit instruction and reading strategies on acquisition of metacognitive skills and performance in English Language. Also studies so far have concentrated on the influence of metacognitive strategies and cognitive strategies use among English language as a Foreign Language (EFL) students in Language learning to the utter neglect of English as Second Language (ESL) students. Basic metacognitive knowledge is seen as a prerequisite for the development of reading, writing and speaking (oral proficiency).

### **1.3 Theoretical framework.**

The theoretical framework relevant to this study includes:

- ❖ Cognitive Information Processing Theory: Miller (2012).
- ❖ Emergentist Theory of Language Acquisition: Bates and MacWhinney (1987).
- ❖ Transactional Theory of Reading: Rosenblatt (1978).
- ❖ Schema Theory of Learning: Anderson (1977).

#### **1.3.1 Cognitive Information Processing Theory (IPT) (Miller, 2012)**

Miller (2012) provided two theoretical ideas that are fundamental to cognitive psychology and the information processing framework. The first concept is "chunking" and the capacity of short term memory. Miller (2012) presented the idea that short-term memory could only hold 5-9 chunks of information (seven plus or minus two) where a chunk is any meaningful unit. A chunk could refer to digits, words, chess positions, or people's faces. The concept of chunking and the limited capacity of short term memory became a basic element of all subsequent theories of memory.

The second concept, that of information processing uses the computer as a model for human learning. Like the computer, the human mind takes in information, performs operations on it to change its form and content, stores and locates and generates responses to it. Thus, processing involves gathering and representing information, or encoding, holding information or retention; and getting at the

information when needed, or retrieval. Information processing theorists approach learning primarily through a study of memory

The information processing framework is the model of a mind which functions as an information processor that does many things such as accept information, manipulate and transform it, store it and retrieve it (Miller, 2012). He also addressed the question of the child's cognition of cognition, called metacognition and found that children's ideas about the workings of their own minds are consistent with their developing knowledge about everything else. IPT focuses heavily on three major memory stores that are involved in cognitive processes; sensory memory, working memory, and long-term memory. IPT is a cognitive perspective that views learners as active interpreters and manipulators of stimuli and information. Theorists from this view believe that the foundational structure of human thinking is unchanged throughout life (Berk, 2005). However, information-processing research suggests that over time there are cognitive changes in the capacity for thinking; that is, the amount and speed of information processed (Berk, 2005).

There are four fundamental assumptions – or four pillars – of the information processing approach. These pillars underlie and support this approach, as well as many other cognitive models.

**Thinking:** The process of thinking includes the activities of perception of external stimuli, encoding the same and storing the data so perceived and encoded in one's mental recesses.

**Analysis of stimuli:** This is the process by which the encoded stimuli are altered to suit the brain's cognition and interpretation process to enable decision making. There are four distinct sub-processes that form a favourable alliance to make the brain arrive at a conclusion regarding the encoded stimuli it has received and kept stored. These four sub-processes are encoding, strategization, generalization and automatization.

**Situational modification:** This is the process by which an individual uses his experience, which is nothing other than a collection of stored memories, to handle a similar situation in future. In case of certain differences in both situations, the individual modifies the decisions they took during their previous experience to come up with solutions for the somewhat different problem.

**Obstacle evaluation:** This step maintains that besides the subject's individual development level, the nature of the obstacle or problem should also be taken into consideration while evaluating the subject's intellectual, problem solving and cognitive acumen. Sometimes, unnecessary and misleading information can confuse the subject and he / she may show signs of confusion while dealing with a situation which is similar to one he / she was exposed to before, which he / she was able to handle successfully.

IPT focuses heavily on three major memory stores that are involved in cognitive processes; sensory memory, working memory, and long-term memory. The first of these memory stores, sensory memory, is the first store to come into contact with information. Although the capacity of this memory store is virtually unlimited, its power to retain information is extremely limited. The sensory memory store can

retain new information for approximately one to four seconds before it is either stored in working memory or lost (Eggen & Kauchack, 2007). What is most important about the sensory memory store is that it gathers new information and allows the processing system to attach meaning to the material. If the information is consciously focused on and not dismissed as a distraction, it captures the learner's attention. According to Information Processing Theorists, the attention phase represents the stage during which learning actually begins to occur in students (Eggen & Kauchack, 2007).

After the attention phase is initiated, if the information is important enough and students recognize it as such, they will develop their individual perception of the stimulus. In relation to the sensory memory store, a student's perception of a stimulus is the most important phase, as it directly affects how students consciously understand the information in the next store, working memory (Eggen & Kauchack, 2007). The working memory store, like sensory memory, is limited in capacity and in duration. Accordingly, information can be stored in working memory for between ten and twenty seconds (Eggen & Kauchack, 2007). In terms of capacity, it is much more difficult to determine how much content can be temporarily stored. Information Processing Theory maintains that an individual's "cognitive load" depends upon how much data can be "chunked" (Eggen & Kauchack, 2007). Interestingly however, individual chunks can refer to digits, words, pictures, or even people's faces (Ali-Hassan, 2005). While the time that information can remain in the working memory is longer than that of the previous store, if a learner does not once again assign perceptual importance and draw linkages to the content, it will likely be lost. Building off one of the major tenets of cognitive psychology, these connections

tend to be made based on the level of association that is made to prior knowledge already stored by an individual. In this way, it is intuitive to believe that as a student grows older and learns more, the working memory will be more efficient and have a greater capacity due to a more accurate perception of the information presented and broader prior knowledge.

The third and final memory store in the IPT model is long-term memory. After meaningful information is “chunked” in appropriate groupings within working memory, the material is encoded into long-term memory through rehearsal. Within long-term memory, there are two broadly accepted types of knowledge that is stored: declarative knowledge and procedural knowledge. Declarative knowledge is specific information like facts, definitions, procedures, and rules, while procedural knowledge is the information required to be able to perform a given task (Eggen & Kauchack, 2007). In contrast to the previous stores, long-term memory has a virtually unlimited capacity and duration when it comes to storing and recalling information. One dominant theory that has gained attraction in recent years that helps to explain the capacity of long-term memory is the Dual Coding Theory, by Paivio (1990). Paivio maintains that there are two “tracks” on which students can encode information in long-term memory, a visual track and a verbal track. The theory explains that because these tracks are separate but additive in capacity, we can take advantage of the structure of long-term memory by stimulating both of these tracks simultaneously to build greater representations for the information and making it easier to recall it over time Paivio, (1990). The final two important characteristics of long-term memory detail how this memory store interacts with the other components of the information processing model. To use encoded information

consciously, it must first be retrieved from the long-term memory store and brought into working memory. Recognition, correctly identifying previously stored information amongst distractions (e.g. multiple choice tests), and recall, reproducing information exactly how it was learned without contextual clues, are two ways of doing this (Hummel, 1997). Between these two, recognition is less beneficial for learners, although it is significantly easier to perform. This is because recall does not provide social clues for the learner which requires them to draw the information from long-term memory without a scaffold. Finally, to solidify a learner's understanding of the content, the strategy of metacognition can be applied. Metacognition is defined as one's awareness and control over their cognitive processes, or one's ability to "think" about what they know and think (Eggen & Kauchack, 2007). When metacognition is applied, information stored in long-term memory is retrieved and placed back into the attention and perception stages before re-entering the working memory store. In this way, learners can make their knowledge more concrete by consciously thinking about it before encoding it again into long-term memory.

### **1.3.2 Emergentist theory of language acquisition (Bates & MacWhinney, 1987).**

Emergentist theory developed by Bates and MacWhinney(1987), posit that language acquisition is a cognitive process that emerges from the interaction of biological pressures and the environment. According to these theory, neither nature nor nurture alone is sufficient to trigger language learning; both of these influences must work together in order to allow children to acquire a language. The proponents of

this theory argue that general cognitive processes subserve language acquisition and that the end result of these processes is language-specific phenomena, such as word learning and grammar acquisition.

A significant amount of emergentist work within linguistics adopts the techniques of *CONNECTIONISM*, an approach to the study of the mind that seeks to model learning and cognition in terms of networks of (assumedly) neuron-like units. In its more extreme forms, connectionism rejects the existence of the sorts of symbolic representations (including syntactic structure) that have played a central role in explanatory work on human language.

Emergentist approaches to language acquisition can be divided into two types, depending on the dominant strategy that they adopt. On the one hand, there is a very influential and impressive body of research that focuses on the importance of the input (or usage) for understanding how language acquisition works. Ellis (2002, 2006) provides a far-reaching discussion of this approach. On the other hand, a smaller body of research explores the role of the processor–working memory interface in language acquisition, addressing problems of learnability and development that have traditionally been the exclusive domain of universal grammar-based work. O’Grady (2008) offers an introduction to this approach.

### **Input-based emergentism**

One of the earliest examples of a systematic input-based approach to language learning is the Competition Model put forward by Bates & MacWhinney (1987). This approach, which remains highly influential, offers a theory of how language learners



come to identify and prioritize the various competing cues (word order, animacy, case, agreement, and so on) that are relevant to sentence comprehension. The key variables, MacWhinney suggests, are to be found in the input: how often the cue is present when a particular pattern is being interpreted (cue availability), and how often it points to a particular interpretation (cue reliability). In the case of English, for instance, word order is a highly available and reliable cue for identifying a sentence's subject—which almost always occurs preverbally. In contrast, agreement is highly reliable (only subjects trigger agreement), but is often unavailable since there is so little inflection in English. The situation could well be reversed in a free word order language, where agreement (or case) might be both more available and more reliable than word order.

A focus on the input is also characteristic of many other scholars working in an emergentist framework. A recurring intuition is that the frequency with which particular phenomena are encountered plays a key role in shaping the developmental process. One of the strongest advocates of this view is Ellis (2002, 2006), who holds that language learning is, in essence, 'the gathering of information about the relative frequency of form-function mappings' (2006)—with provisos concerning perceptibility, attention and interference from other languages.

### **Processor-based emergentism**

The starting point for processor-based emergentism is the view, put forward by Hawkins (2004) and O'Grady (2005), that key properties of the syntactic phenomena that have long been used as support for universal grammar-based approaches to language are in fact better explained in terms of processing factors. Hawkins

develops this idea for a number of phenomena central to typology, such as Greenbergian universals and cross-linguistic variation in the syntax of filler-gap dependencies. O'Grady's work focuses more directly on the problem of language acquisition. The central thesis of that work is that a simple processor, committed to reducing the burden on working memory, lies at the heart of the human language faculty. Although such a processor makes no use of grammatical principles, its operation plays a key role in explaining the properties of many core syntactic phenomena—binding, control, agreement, island constraints, scope, and so forth.

Emergentist theory of language acquisition is based on the simple thesis that the core properties of language are best understood by reference to the properties of quite general cognitive mechanisms and their interaction with each other. This information serves as the knowledge base for sentence production and comprehension, which hold that sentence processing is the simultaneous satisfaction of the multiple probabilistic constraints afforded by the cues present in each particular sentence. Thus suggest that language acquisition, like other skills is of the same cloth as other cognitive processes.

### **1.3.3 Transactional theory of Reading (Rosenblatt, 1978)**

The transactional theory of reading is based on the principle that meaning is constructed in the transaction between a particular reader and a particular text (Rosenblatt, 1978). Readers bring their prior knowledge and experiences to bear on the reading event, and meaning is constructed during the transaction between reader and text. Both text and reader are vitally important. Reading is seen as the

construction of meaning in the internal, cognitive space of the individual reader in transaction with a particular text.

From a transactional perspective, the reader plays a central role in the construction of meaning, drawing upon prior knowledge and experience to attend selectively to specific aspects of a text (Rosenblatt, 1978). Theorists who align with a transactional model reject the notion that meaning resides in the text (Wells, 1986) and instead focus on interpretive communities (Fish, 1980), the gaps that readers “fill in” during the reading event (Iser, 1978), the stances that a reader assumes while reading (Rosenblatt, 1978), and the ways that literature expands the reader’s understanding of the world (McClure & Zitlow, 1991).

According to Morrow and Gambrell (2000), meaning “is a two-way process that resides in the transaction that occurs between the reader and text wherein the reader constructs a personal envisionment of meaning that is guided by the text”. This definition emphasizes the roles of the reader and the text, and views meaning as the result of the cognitive processes of an individual reader in transaction with a particular text. In this perspective, the focus is on a particular reader, transacting with a particular text in a particular context. All three components are included, although the focus seems to be on the transaction between reader and text and not on the context of the reading event, including the social, political, and cultural factors involved in the construction of meaning (Lewis, 2000).

From the transactional perspective, children’s literature is seen as a “way of knowing” and is used to help children make connections to the world around them, become acquainted with the language of stories, learn about the characteristics of

the natural and social world, and discover insights into their own personalities and identities (Short, 1999). It is the lived-through or aesthetic experience of reading literature, and the ways that literature develops identity and understanding, that become the primary focus.

Short (1999) offers an approach to reading instruction, based on the work of Halliday (1980) that aligns with a transactional perspective. In this approach, literature is used as vehicle for learning language, learning through language, and learning about language (Halliday, 1980). Learning experiences that highlight these three opportunities should be made available to students in their transactions with literature: Students need opportunities to learn language by reading extensively, to learn about language by reflecting on their reading strategies and literary knowledge, and to learn through language by using literature inquire about the world and their own lives. (Short, 1999,)

The instructional practices that align with a transactional perspective generally involve whole class or small group discussions and workshops. The focus is on sharing individual interpretations within communities of readers to come to deeper understandings of a particular text. Various frameworks have been created by reading educators to support these interactions around texts, including book clubs (Raphael & McMahon, 1994), literature study groups (Peterson & Eeds, 1990), focus units (Moss, 1984), literary investigations and invested discussions (Serafini, 2001), and lively discussions (Gambrell & Almasi, 1996). During these activities, the teacher supports the on-going dialogue, entering into conversations with students and helping them reach more complex understandings about the text, their world, and

their identity. The teacher becomes a member of the discussion group, supporting the conversation, not simply asking comprehension questions and evaluating responses.

Although Rosenblatt (1978) is certainly concerned with the role of literature in a democratic state (Pradl, 1996), addressed the local contexts of the reading event rather than the larger role of social, political, cultural and historical contexts associated with a critical perspective (Lewis, 2000). Metacognition involves thinking about what one is doing while reading. Klein (1991) stated that strategic readers attempt the following while reading: Identifying the purpose of the reading before reading, Identifying the form or type of the text before reading.

Transactional theory of reading tend to focus on the cognitive processes of individual readers as they construct meaning in transaction with a text, readers attempt the following while reading: Identifying the purpose of the reading before reading, Identifying the form or type of the text before reading which involves metacognition process. These theoretical perspectives view the reader as an active constructor of meaning, not as a passive recipient of ready-made "truths." Determining a text's main idea is seen as identifying a sanctioned interpretation by an external authority rather than a truth hidden in the text. In these theoretical perspectives, reading is not a set of decontextualized cognitive skills that can be universally transmitted via commercial reading exercises. Rather, reading is a social practice that is constrained, mediated, and shaped by the social forces inherent in a particular community of readers. Meaning does not just generically arise in neutral contexts; it is grounded in the social, political, cultural, and historical contexts of the reading event. Readers

are individuals in society, unable to escape from the contexts in which they live and read, but capable of rendering unique interpretations as they transact with particular texts at particular times. Moreover, they attempt to form a summary of what was read. Carrying out the previous steps requires the reader to be able to classify sequence, establish whole-part relationships, compare and contrast, determine cause-effect, summarize, hypothesize and predict, infer, and conclude.

#### **1.3.4 Schema theory of Learning. (Anderson, 1997).**

Schema theory represents knowledge about concepts; objects and the relationships they have with other objects, situations, events, sequences of events, and actions. Each new experience incorporates more information into one's schema. Schema theory is the process, by which readers combine their own background knowledge with the information in a text, helps to comprehend that text. People have *schemata*, or unconscious mental structures, that represent an individual's generic knowledge about the world. It is through schemata that old knowledge influences new information (Anderson 1977). The theory emphasizes the nature and purpose of schemata as the fundamental elements of cognitive processing (Douchy & Bouwens, 1990 in Tan 2003). They are **prior knowledge linkages**, and they influence the amount and proficiency of our learning. Research by schema theorists indicates that abstract concepts are best understood after a foundation of concrete and relevant information has been established (Schallert 1982). The general knowledge provides a framework into which the newly-formed structure can be fitted.

Anderson (1977) pointed out that schema provided a form of representation for complex knowledge and that the construct, for the first time, provided a principled account of how old knowledge might influence the acquisition of new knowledge. Schema theory was immediately applied to understanding the reading process, where it served as an important counterweight to purely bottom-up approaches to reading. The schema-theory approaches to reading emphasize that reading involves both the bottom-up information from the perceived letters coming into the eye and the use of top-down knowledge to construct a meaningful representation of the content of the text. Some characteristics of schemata according to Anderson (1977):

- Schemata are always organized meaningfully, can be added to, and, as an individual gains experience, develop to include more variables and more specificity.
- Each schema is embedded in other schemata and itself contains subschema.
- Schemata change moment by moment as information is received.
- They may also be reorganized when incoming data reveals a need to restructure the concept.
- The mental representations used during perception and comprehension, and which evolve as a result of these processes, combines to form a whole, which is greater than the sum of its parts.

Rumelhart (1977) has described schemata as "building blocks of cognition" which are used in the process of interpreting sensory data, in retrieving information from memory, in organising goals and sub goals, in allocating resources, and in guiding the flow of the processing system. Rumelhart (1977) has also stated that if our schemata are incomplete and do not provide an understanding of the incoming data

from the text we will have problems processing and understanding the text. Individuals have schemata for everything. Long before students come to school, they develop schemata (units of knowledge) about everything they experience. Schemata become theories of reality. These theories not only affect the way information is interpreted, thus affecting comprehension, but also continue to change as new information is received. Rumelhart (1977) also states that all knowledge is organized into units. Within these units of knowledge, a schema is stored information.

A schema (plural schemata) is a hypothetical mental structure for representing generic concepts stored in memory. It's a sort of framework, or plan, or script. Schemata are created through experience with people, objects, and events in the world. A schema is a generalized description or a conceptual system for understanding knowledge, how knowledge is represented and how it is used.

The importance of reading comprehension lies on how the reader uses schemata. Researchers agree that some mechanisms activate those schemata relevant to the readers' task. Cook (1989) states that "The mind stimulated by key words or phrases in the text or by the context activates a knowledge schema." Cook implies that we are not necessarily dealing with conscious processes, but rather with automatic cognitive responses given to external stimuli. This view clarifies that schema is activated in one of two ways:

1. New information from the outside world can be cognitively received and related to already known information stored in memory through retrieval or



remembering. In this case, new concepts are assimilated into existing schemata which can be altered or expanded;

2. New information can be represented by new mental structures. In this case, in absence of already existing schemata, new knowledge builds up new schemata.

Corroborating the work of Cook (1989), Plastina (1997), asserts that individuals piece up bits of knowledge together, in an attempt to make sense of them, which follows that the main features of schemata are flexibility and creativity. Schemata are flexible in that they undergo a cyclic process within which changes are brought about actively. Information is stored in memory and provided when needed with the least amount of effort. They are creative in that they can be used to represent all types of experiences and knowledge; they are specific to what is being perceived. Carrell and Floyd (2007) maintain that the teacher must provide the student with appropriate knowledge he is lacking, and must also teach the student how to build bridges between existing knowledge and new knowledge while teaching for comprehension especially for language learners.

Schema theory describes the process by which readers combine their own background knowledge with the information in a text, to comprehend that text. All readers have different schemata (background information). A student's ability to understand and remember whether through reading or through listening is dependent on the expectations, cultural background, vocabulary and prior knowledge which one brings to the reading task. The richer the student's background schema, the more readily new information will be linked with the existing information and comprehended. This comprehension in turn further enriches

and expands the student's schema. Rumelhart (1977) focuses in particular on the complex interaction of perceptual syntax, semantic and pragmatic information that occurs in the mind of the skilled reader. The reading process, therefore, involves identification of genre, formal structure and topic, all of which activate schemata and allow readers to comprehend the text (Swales 1990). In this, it is assumed that readers not only possess all the relevant schemata, but also that these schemata actually are activated.

In the process of reading, comprehension of a text entails drawing information from both the text and the internal schemata until sets are reconciled as a single schema or messages which are instructional proposals from schema theory. Relevant knowledge can be activated before reading, which should provide prerequisite knowledge (metacognitive awareness) for teaching higher-order comprehension processes. Schema theory provides a theoretical and empirical basis for instructional practices /effective learning strategies that can be applied in the classroom by teachers.

#### **1.4 Purpose of study**

This study is designed to investigate the effectiveness of explicit instruction and reading strategies on metacognitive skills and performance in English Language among senior secondary school III students in Anambra State.

The Aims and Objectives of the study include to:

1. Examine if there is any difference in the post-test scores of English Language performance of participants exposed to explicit instruction strategy, reading strategies and control groups.
2. Explore whether there is any difference in the post-test scores of self-awareness skills among participants exposed to explicit instruction strategy, reading strategies and control groups.
3. Establish whether there is any difference in the post-test scores of planning skills among participants exposed to explicit instruction strategy, reading strategies and the control groups.
4. Investigate if there is any difference in the post-test scores of monitoring skills among participants exposed to explicit instruction strategy, reading strategies and control groups.
5. Explore whether there is any difference in the post-test scores of global strategies among participants exposed to explicit instruction strategy, reading strategies and control groups.
6. Evaluate whether there is any difference in the post-test scores of problem solving strategies among participants exposed to explicit instruction strategy, reading strategies and control groups.
7. Verify if there is any difference in the post-test scores of support strategies among participants exposed to explicit instruction strategy, reading strategies and control groups.

## **1.5 Research questions**

The following research questions were formulated to guide the study:

- (1) To what extent will there be any significant difference in the post-test scores in English Language performance of participants exposed to explicit instruction strategy, reading strategies and control group?
- (2) Is there any significant difference in the post-test scores in self-awareness skills among participants exposed to explicit instruction strategy, reading strategies and the control group?
- (3) Will there be any significant difference in the post-test scores in planning skills among participants exposed to explicit instruction strategy, reading strategies and the control group?
- (4) Does any significant difference exist in the post-test scores in monitoring skills among participants exposed to explicit instruction strategy, reading strategies and the control group?
- (5) Is there any significant difference in the post-test scores in global strategies among participants exposed to explicit instruction strategy, reading strategies and the control group?
- (6) To what extent will there be any significant difference in the post-test scores in problem solving strategies among participants exposed to explicit instruction strategy, reading strategies and the control group?
- (7) Will there be any significant difference in the post-test scores in support strategies among participants exposed to explicit instruction strategy, reading strategies and the control group?

## **1.6 Research hypotheses**

1. There is no significant difference in the post-test scores in English Language performance among participants exposed to explicit instruction, reading strategies and the control group.
2. There is no significant difference in the post-test scores in self-awareness skills among the participants exposed to explicit instruction strategy, reading strategies and the control group.
3. There is no significant difference in the post test scores in planning skills among the participants exposed to explicit instruction strategy, reading strategies and the control group.
4. There is no significant difference in the post test scores in monitoring skills among participants exposed to explicit instruction strategy, reading strategies and the control group.
5. There is no significant difference in the post-test scores in global strategies among participants exposed to explicit instruction strategy, reading strategy and the control group.
6. There is no significant difference in the post-test scores in problem solving strategies among participants exposed to explicit instruction strategy, reading strategies and the control group.
7. There is no significant difference in the post-test scores on support strategies among participants exposed to explicit instruction strategy, reading strategies and the control group.

### **1.7 Scope of study**

This study was limited to selected public schools in Anambra State. The study covered public senior secondary school (SS3) students (both male and female).

The emphasis was on the effects of Explicit Instruction and Reading Strategies on Metacognitive Skills and Performance in English Language among Senior Secondary Students in Anambra State. The variables considered were academic performance and metacognitive skills which include monitoring, planning, self-awareness and reading strategies which also include global, support and problem solving strategies.

### **1.8 Significance of study**

This study would be relevant to policy makers and curriculum experts in the education sector, in that it will help to review our present educational policy and curriculum with the aim of introducing metacognitive skills as a core component of teaching reading comprehension in English language to improve learning abilities of students.

The findings of this study would be of immense benefit to the teachers, students and educational researchers to enhance assessment in planning, instruction and conducting classroom research in the educational sector. This study is also aimed to provide information that will enable teachers to be aware of and have control over how students think and how they teach. It is also aimed to help teachers monitor, evaluate and regulate their teaching activities in accordance with specific students'

goals, and contexts, thus exerting great impacts on their teaching, and the needs of students.

This study is also designed to enable students' increase the awareness of their metacognitive skills to improve reading abilities as the information will allow them to evaluate themselves in relation to other readers. It will also help to amend the conception they have about reading and learning from text. Becoming aware of one's cognitive processes while reading is an important step towards achieving the type of constructive responsive and thoughtful reading that is emphasized by current models of reading. According to Paris & Winograd (1990) such consciousness raising has twin benefits (a) It transfers responsibility for monitoring learning from teachers to students themselves. (b) It will promote positive self-confidence, and motivation among students. In this manner metacognitive skills provide personal insights into one's own thinking and fosters independent living.

The findings from this study may serve as useful tools for teachers, educators and parents in investigating the impact of teaching strategic reading under a variety of conditions including reading for different purposes, such assessments should engage students in more high level of thinking.

The study will be useful to educational guidance because it has suggested some fundamental techniques to diagnose reasons for students' failure in English language and identifying ways of remedying the problems through the use of metacognitive skills. The study is useful in the modification of students' attitude and interest especially in the area of enhancing language and presentation skills through clearly and systematic ways of expressing and analyzing ideas logically.

## **1.9 Operational definition of terms**

### **Reading Strategies**

Strategy is an activity used to help students increase abilities to achieve a goal. Reading Strategies in this study are purposeful, cognitive actions that students take when they are reading to help them construct and maintain meaning. They are the methods of instruction that enable students to become proficient readers. Strategies were measured using the Metacognitive Awareness Reading Strategies Inventory.

### **Explicit direct instruction strategy**

Explicit instruction strategies are features and activities which teachers focus their explanations on when they teach students metacognitively. In the study, these features include what the skill is; why the skill is learned; how to use the skill; when and where is to be used. This was measured using the State Metacognitive Inventory.

### **Metacognition**

Metacognition in this study refers to the conscious and periodic self-evaluation of what one thinks and knows and also to think about their own thinking and knowing during reading; whether comprehension is being achieved, selecting and applying different strategies when necessary. Metacognition was measured using the State Metacognitive Inventory.



## **Cognition**

It refers to the process of applying knowledge, and changing preferences. It can be conscious and unconscious. Cognition as used in the study focuses on the study of mental processes such as comprehension, inferences, decision – making, planning, learning, and control during reading.

## **Reading**

The ability to look at and understand the meaning of written or printed words or symbols. It is to go through written or printed words in silence or aloud to others or one's self.

## **Comprehension**

This refers to an exercise that enables students to understand a text in a written language. It is the ability to understand what you read. Understanding flows from the words that are read and the mental images created or awakened by the words. Comprehension was measured using the participants' scores in English language achievement test.

## **Metacognitive skills**

Metacognitive skills refer to those strategies which require students to think about their own thinking as they engage in academic tasks e.g. reading. They are conscious control processes such as planning, monitoring of the progress of processing, self-awareness, strategy use and regulation of cognition. These skills

were measured using the participants' total scores in the State Metacognitive Inventory.

### **Self-awareness skills**

This is control and knowledge of self as a learner. Self-awareness in this study can be defined as any instance of cognitive control that is informed by metacognitive knowledge. Concerning reading specifically, control might involve the choice of which items to read and strategy selection such as choosing what is believed to be an effective way to read certain materials; changing a reading strategy when an earlier choice proves ineffective. It was measured by participants' scores in self-awareness skills in the State Metacognitive Inventory.

### **Monitoring skills**

Metacognitive monitoring refers to the learner's efforts to monitor hisr own performance in a learning task and also focus on the progress of the cognitive process in which the person is engaged. Such monitoring can take the form of explicit judgments which are based on cues related to that process. Monitoring was measured using participants' scores in monitoring skills in the State Metacognitive Inventory.

### **Planning skills**

Metacognitive planning skills direct the course of individuals' thinking which indirectly results in specific cognitive strategy use for specific tasks. Planning helps allocate resources to the current task (via monitoring strategies), determine the order of

steps to be taken to complete the task and set the intensity or the speed at which one should work on the task (evaluating strategies). This was measured using participants' scores in planning skills in the State Metacognitive Inventory.

### **Performance in English language**

In this study it is a measure of high or low performance of senior secondary III students in English language, which was measured by participants' scores in the English Language achievement test.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This study basically focuses on metacognitive skills and academic performance. For a proper appreciation of the study, relevant literatures reviewed are organized under the following headings:

- Concept of Metacognition
- Metacognitive skills
- Metacognition and reading comprehension.
- Review of studies on explicit instruction strategies.
- Review of studies on reading strategies
- Strategy Use and performance in English language
- Appraisal of the literature review

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#### **2.1 Concept of Metacognition**

Flavell (1979) first introduced the term *metacognition* based on metamemory as knowledge and cognition about learners' knowledge of their own cognition. He also described as a critical analysis of thought, knowledge and cognition about cognitive phenomena, or simply thinking about thinking. Metacognition has typically been conceptualized as involving one or more of the following aspects of a cognitive

process: knowledge about that process, the monitoring of that process, and the control of that process. It also refers to learners' awareness of their own knowledge and control of the processes by which they learn (Brown, 1987). According to Hyde & Bizar (2010), metacognition processes are those processes in which an individual considers thoughts in problem solving situations through the strategies of self-planning, self-monitoring, and self-reflecting. When optimized, these aspects of metacognition can augment performance of the target cognition, including students' learning (Azevedo & Cromley, 2004; Winne, 1995). For this reason, many researchers have sought to train students to engage in metacognitive thinking to improve their learning (White & Frederiksen, 1998).

Flavell recognized that metacognition consisted of both monitoring and regulation; he then defined metacognition as follows: In any kind of cognitive transaction with the human or non-human environment, variety of information processing activities go on. Metacognition refers among other things, to the actual monitoring and consequent regulation and orchestration of these processes in relation to the cognition object or data on which they bear, usually in service of some concrete goal or objective (Flavell, 1979). Paris and his colleagues defined it by adding two essential features of "self-appraisal" and "self-management" of cognition (Paris & Jacobs 1984; Paris & Winograd, 1990). Self-appraisal of cognition refers to learners' reflections on their abilities, understanding and effective state in the learning process whereas self-management refers to metacognition in action which helps to orchestrate aspects of problem solving (Paris & Winograd 1990).

Metacognition refers to two aspects, namely: the students' self-awareness of a knowledge base in which information is stored about how, when, and where to use

various cognitive strategies and their self-awareness of and access to strategies that direct learning (e.g. monitoring difficulty level, a feeling of knowing). This awareness is developmental and lies on a continuum (Flavell 1979; Kuhn 2000; Veenman 1993: 1997; O'Neil and Abedi 1996). Proficient readers use one or more metacognitive strategies to comprehend texts. There are three main aspects of metacognition: metacognitive knowledge, metacognitive monitoring, self-regulation and control (Pintrich, Wolters and Baxter 2000). The first group consists of cognitive learning strategies which the learner uses to regulate the process of knowledge acquisition. These include, for example, elaboration strategies such as the building of links to prior knowledge, or memory strategies such as note taking. The second group consists of metacognitive control strategies. Central here are activities like the planning and monitoring of learning activities, the evaluation of learning outcomes and the adaptation to varying task demands and (unexpected) difficulties, for example, an increase in directed efforts.

Metacognitive knowledge is information that one consults when thinking about a particular cognition. This knowledge can include information about the cognitive task at hand, about one's ability to perform the task or about potential strategies one might use to perform that task. Metacognitive knowledge informs monitoring and control and the accuracy and efficacy of these functions increase as metacognitive knowledge increases (Winnie and Hadwin, 1998, Wilson and Brekke, 1994). Flavell (1976) also identified three 'meta' that children gradually acquire in the context of information storage and retrieval. These were: (a) the child learns to identify situation in which intentional, conscious of certain information may be useful as some time in the future. (b) The child learns to keep current any information which

may be related to active problem – solving and have it ready to retrieve as needed.

(c) The child learns how to make deliberate systematic searches for information which may be helpful in solving problem, even when the need for it has not been foreseen.

Flavell (1979) first attempted to generate formal models of metacognition. He acknowledged metacognition in a wide range of applications which included reading, or writing skills, language, acquisition, memory, attention, monitoring social interactions, self-instruction, personality development and education. Flavell mentioned that components of metacognition can be activated intentionally, as by memory search arrived at retrieving specific information, or unintentionally such as being cues in a task situation. Metacognition can lead to selection, evaluation, revision or deletion of cognitive tasks, goals and strategies. They can also help the individual make meaning and discover behavioural implications of metacognitive experiences. In the 1979 paper, Flavell proposed a formal model of metacognitive monitoring to include four classes of phenomena and their relationships. The four classes included: (a) metacognitive knowledge, (b) metacognitive experiences, (c) tasks and goals, (d) Strategies or activities.

The first of Flavell's (1979) classes was metacognitive knowledge, which he defined as one's knowledge about the factors that affect cognitive activities. The distinction between cognitive and metacognitive may lie in how the information is used, more than a fundamental difference in processes. Metacognitive activity usually precedes and follows cognitive activity. Metacognitive knowledge can lead the individual to engage in or abandon a particular cognition enterprise based on his relationship to his interests, abilities and goals. Flavell described three categories of these

knowledge factors; 1) Person variables, 2) task variables, and 3) strategy variables. These are the three categories in which Flavell proposed that individuals have metacognitive knowledge.

The Person category of metacognitive knowledge includes individuals' knowledge and beliefs about himself as a learner and what one believes about other people's thinking process. Flavell gave examples of knowledge such as a person's belief that he can learn better by listening rather than by reading or that a person perceives one's friend to be more socially aware than he is. One's belief about himself as learner may facilitate or impede performance in learning situations.

The Task category of metacognitive knowledge encompassed all information about a proposed task that is available to a person (Flavell, 1979). This guides the individual in the management of a task, and provides information about the degrees of success that he is likely to produce. Task information can be plenty or scarce, familiar or unfamiliar, reliable or unreliable, interesting or not, organized in a useable or unusable fashion. Task knowledge informs the person of the range of possible acceptable outcomes of the cognitive enterprise and the goals related to completion. Knowledge about task difficulty and mental or tangible resources necessary for its completion also belong to this category.

The Strategy category of metacognitive knowledge involves identifying goals, sub goals and selection of cognitive processes to use in their achievement (Flavell, 1979). Metacognitive strategies are ordered processes used to control one's own cognitive activities and to ensure that cognitive goals have been met (For example solving a math problem, writing an effective sentence, understanding reading material). Flavell also emphasized that these types of variables overlap and the



individual actually works with combinations and interactions of the metacognitive knowledge that is available at a particular time. He also stated that metacognitive knowledge is not fundamentally different from other knowledge, but its object is different and can be activated consciously and unconsciously. A person with good metacognitive skills and awareness uses these processes to oversee his own learning processes, plan and monitor ongoing cognitive activities, and to compare cognitive outcomes with internal or external standard.

Metacognitive knowledge might exert an influence in the classroom in a number of ways. For example, a student who expects an essay test instead of a multiple choice test on a chapter might study by writing a summary of the chapter instead of attempting to answer the short – answer questions in the back of the chapter. He presumably knows that trying to write a summary is more representative of how understanding will be tested on such a test than answering the multiple choice questions (knowledge affecting monitoring). Another student who knows he struggles to understand mathematics lessons might plan to devote more time on to study or seek extra help (Knowledge affecting control). Students' who know about how to study and about how learning occur (i.e. those with more metacognitive knowledge) learn better than those with less metacognitive knowledge (Winne and Hadwin, 1998). For this reason educating students how to learn and identifying effective and ineffective learning strategies for them should not only improve the accuracy of their metacognitive judgments, but should also improve their self-regulated learning (Azevedo & Cromley, 2004; White & Frederiksen, 1998).

In terms of improving students' metacognition, there are instructional approaches and techniques that teachers and students might not be aware of such as the benefits of spacing learning, and the benefits of testing for subsequent relation. Also teachers should warn students about metacognitive illusions (i.e. systematic errors in metacognitive monitoring, they might encounter when studying specific type of materials or making specific type of judgments e.g. the foresight bias) for this reason the students should be **explicitly** trained to avoid cognitive illusions (e.g. illusions of knowing) rather than waiting for them to learn from their mistakes. As described by Wilson and Brekke (1994), such 'mental contamination' can be difficult to avoid if one does not feel that it is in fact occurring. Not only will students need to accept that they are prone to specific biases; but they must also learn how to appropriately adjust their metacognitive monitoring and judgments' to avoid them. However the metacognitive question can be framed in such a way that the student will recognize the possibility that they might experience a metacognitive illusion. For example, students who are asked whether they will remember information on a test will have a different response than students who are asked whether they will forget information on a test (Fin, 2008). Framing the question in a different way can facilitate the insight that the students' metacognition might be incorrect.

## **2.2 Metacognitive skills**

Metacognitive skills refer to conscious control processes such as planning, monitoring of the progress of processing, effort allocation, strategy use and regulation of cognition (self-awareness). Metacognitive skills (Brown, 1978) pertain to the student's ability to set goals for learning, estimate the success with which the

goals are being met, and select alternative strategies to meet the goals. The design of learner-controlled programs has been viewed from a metacognitive perspective, an idea that is extensively used in the acquisition of reading skills (Baker & Brown, 1983; Jacobs & Paris, 1987). Presently, there exists a certain consensus in education that it would be important to develop awareness and the regulation of those learning strategies which are called metacognition since the research from Flavell. Thus, when metacognitive skills are developed in a learner, his academic performance improves (Landine & Stewart, 1998). A metacognitive learner is more mature, more autonomous concerning the control of his own learning and behavior during problem solving (Brown, 1987). Metacognitive skills as determined by O'Neil and Abedi (2000) include monitoring, self-awareness, and planning skills.

### **2.2.1 Self-awareness skills**

Metacognitive self-awareness skills can be defined as any instance of cognitive control that is informed by metacognitive knowledge or monitoring. Self-awareness processes are those that are "directed at the regulation of the course of one's own thinking" (p.212). They involve one's decisions that help (a) to allocate his or her resources to the current task, (b) to determine the order of steps to be taken to complete the task, and (c) to set the intensity or (d) the speed at which one should work the task (Hacker, 1997). Concerning reading specifically, control might involve the choice of which items to read and the allocation of reading time (e.g. developing more readily time to certain pieces of information than others) or strategy selection e.g. choosing what is believed to be an effective way to read certain materials; changing a reading strategy when an earlier choice proves ineffective.

Regardless of which form(s) of control is used while studying that control will be informed by the studies metacognitive knowledge and monitoring and will be dependent upon the accuracy of both. There are different types of control:

Allocating study time and Strategy selection control

Allocating study time: - studies that have examined the relationship between monitoring and study time allocation involves participants studying items or materials for a fixed period of time, judging their learning for those materials, and then re-studying the materials for the amount of time the participants feel it's appropriate. A correlation can be calculated between the magnitude of the participants JOLs and their continued study time. The correlation between JOLs and study time is usually negative, Son and Metcalfe (2002), which also obtains for other judgments' i.e. EOLs and FOKs (Nelson and Leonesio, 1988). In other words, students tend to devote more study time to those items or materials on which they judge their learning to be low more than to those items they believe to be known. This finding supports the idea that students study to reach a goal state in which to be learned information is learned to a pre-set criterion level (Dunslosky and Thiede 1998). Metcalfe and Kornell (2003) further supported this idea, that study time is strategically allocated.

Sometimes students realize that the way they are currently studying is not producing the desired learning outcome in such situations, students might switch i.e. toggle or modify (edit) their current strategy in favour of a different approach Winne and Hadwin (1998). This is another way that metacognition – both knowledge and monitoring can affect control of study.

The study by Critten & Pine (2003) explored the nature of children's metacognitive statements as they read and spell in order to see whether representational levels of understanding, provide a useful framework for exploring the nature of implicit to explicit reading and spelling development in young children. In this, the first testing point of a study to be conducted over a year, 73 children (aged 4.5-5 years) were given single-word spelling and reading tasks and recognition tasks containing alternative spellings of words. In the spelling recognition task children were asked to identify and explain those alternatives they believed correct and incorrect. In the reading recognition task children were asked to identify and read the alternatives they believed to be real and pretend words and explain how they read those words. Result indicated that on the basis of children's explanations and performance they could be allocated to separate reading and spelling representational levels of understanding spanning Pre-implicit, Implicit and Explicit levels. Children's metacognitive awareness of how they read and spell can therefore provide insight into the nature of spelling and reading representations.

Dermitzaki (2003) investigated self-regulatory behavior in different groups of students: Relations to performance and to academic self-concept. In this study, participants were 196 kindergartens, first- and second grade students. The students were individually examined in their academic self-concept in mathematics and in their use of cognitive, metacognitive and motivational strategies for regulating the solution process of a series of arithmetic-mastery of space tasks by means of a structured observation checklist. In the second study, 25 third-grade low achievers in reading comprehension were compared to 20 high achievers as regards their use

of self-regulatory strategies during their efforts to solve reading comprehension tasks. Overall, the results showed that: a. there were close relationships between students' use of self-regulatory strategies during problem-solving and subsequent performance, b. a different pattern of strategic behaviour emerged between high and low achievers in reading comprehension, and c. students' academic self-concept was significantly related to the use of motivational regulatory strategies, such as persisting and working autonomously, but not to the use of cognitive and metacognitive strategies.

### **2.2.2 Monitoring skills**

Metacognitive monitoring refers to the learner's efforts to monitor their own performance in a learning task (Flavell, 1979). Monitoring processes involve one's decisions that help: (a) to identify the task on which one is currently working, (b) to check on current progress of that work, (c) to evaluate that progress, and (d) to predict what the outcome of that progress will be (Kluwe, 1997). Such monitoring can take the form of explicit judgments as are typically elicited in laboratory studies of metacognition. These judgments can be in a simple yes/no form, but are often on a continuous scale (e.g. 1-7, 0-100). Nelson and Narens (2004) further subdivided the kinds of monitoring judgments we use into three categories: feeling of knowing judgment or FOK, ease of learning judgment or EOL, Judgment of learning or JOLs i.e. metacomprehension judgment). Different monitoring judgments have been examined (but this study will focus on meta comprehension judgements, which evaluates one's understanding of text materials).

1. Ease-of-learning (EOL) judgments occur in advance of acquisition, are largely inferential, and pertain to items that have not yet been learned. These judgments are predictions about what will be easy/difficult to learn, either in terms of which items will be easiest (Underwood, 2001) or in terms of which strategies will make learning easiest.
2. Judgments of learning (JOL) occur during or after acquisition and are predictions about future test performance on currently recallable items. However, we now believe, in contrast to the above, that JOL should be defined as follows: Judgments of learning (JOL) occur during or soon after acquisition and are predictions about future test performance on recently studied items. This newer formulation of JOL, although in some cases yielding overlap with the above formulation of FOK, appears to be more useful ( Dunlosky & Nelson, 1992; Nelson & Dunlosky, 1991) than the earlier formulation.
3. Feeling-of knowing (FOK) judgments occur during or after acquisition (during a retention session) and are judgments about whether a given currently nonmalleable item is known and/or will be remembered on a subsequent retention test. [Empirical investigations of the accuracy of FOK judgments usually have the subsequent retention test be a recognition test (Hart, 2002), although several other kinds of retention tests have been used (Nelson, & Narens, 2000; Nelson, 1999).] Perhaps surprisingly, EOL, JOL, and FOK are not themselves highly correlated (Leonesio & Nelson, 1998). Therefore, these three kinds of judgments may be monitoring somewhat different aspects of memory, and whatever structure underlies these monitoring judgments is likely to be multidimensional (speculations about several possible dimensions occur in Krinsky & Nelson, 1999, and Nelson et al., 2000).

Metacognitive monitoring judgments are made inferentially based on cues that are related to that process Koriat, (1997). For instance, students studying for a test must make inferences about their learning of the information based on aspects of the materials being studied (e.g. if a chapter in a text book was written unclearly) or about their experience in studying the materials (e.g. if the information seemed easy to understand). These inferences are also informed by metacognitive knowledge about oneself or the task being judged Koriat (1997), such as the knowledge that essay tests require in depth studying or the belief that one is knowledgeable about Physics.

Research indicates that comprehension monitoring is a developmental skill that is not fully mastered until adolescence. For example Brown and Day (1983) and Brown, Day & Jones (1983) found that low-ability students did not always benefit from instruction in monitoring strategies. These strategies may be beneficial only if students have the backgrounds and understanding to use them effectively. However with attention to students' maturity, aspects of comprehension monitoring can be taught. It is important that teachers model actually using these strategies rather than teaching about the strategies (Meir 1984).

Another determinant of peoples' metacognitive judgment is their perceived self-efficacy Bandura (1977). In fact, people's preconceived notions about their skills in specific domains predict their assessment of how well they did on a particular task. For e.g. when students are asked to tell how well they have done on an exam, they tend to overestimate greatly their performance on the test and this bias derives in part from the tendency of people to base their retrospective assessments on their



preconceived, inflated beliefs about their skills in the domain tested rather than on their specific experience with taking the test (Dunning, Johnson, Ehrlinger & Kruger, 2003).

In a study by Ehrlinger and Dunning (2003), two groups of participants took the same test. Those who believed that the test measured abstract reasoning ability, one which they had rated themselves highly. They estimated they had achieved higher scores than those who thought they had taken a computer programming test. This was so despite the fact that the two groups did not differ in their actual performance.

Tobias & Everson (2002) in a study on knowledge monitoring accuracy and reading in a bilingual elementary school students involving 90 participants, examined the differences in knowledge monitoring accuracy between mono- and bilingual students, as well as the relationship between their metacognitive ability and reading comprehension in relatively young school children. They found that when bilingual students come upon an unfamiliar English word they often search for cognates in their native language. They also reported that bilingual students, when compared to their monolingual peers, monitored their comprehension more actively by asking questions when they faced difficulties or by rereading the text. This suggests that bilingual children attempting to comprehend text presented in English are likely to be more accurate knowledge monitors than their monolingual peers.

Examining the judgment of learning, monitoring accuracy, and student performance in the classroom context, Li Cao & Nietfeld (2002) found that weekly monitoring exercises were used to improve college students' ( $N=94$ ) accuracy of judgment of learning over a 14-week educational psychology course. A time series design was

used to assess the within-subject differences in judgment of learning (JOL), confidence, monitoring accuracy, and performance. Results show that the monitoring exercises have a positive effect: JOL, confidence, monitoring accuracy, and performance all increased over the semester. Performance outcomes were the strongest predictor of a formative estimate of monitoring accuracy, while self-efficacy predicted an overall summative estimate of monitoring accuracy. In addition, overall course test performance was predicted by background knowledge, self-efficacy, and class membership by section.

### **2.2.3 Planning skills**

Metacognitive planning skills refer to the allocation of resources to current task (via monitoring), determine the order of steps to be taken to complete the task and set the intensity at which one should work on the task. Therefore, metacognition is application of knowledge to formulate strategy, thus, knowledge itself is metacognitive if it is dynamically used in strategic manner to ensure that a goal is met. Proper planning and its implementation are critical for the successful learning and therefore linked with intelligence. Individuals with high metacognitive abilities tend to be more successful thinkers (Livingston, 1997). Therefore, metacognition is application of knowledge to formulate strategy, thus, knowledge itself is metacognitive if it is dynamically used in strategic manner to ensure that a goal is met. It is because of this reason metacognition is referred as “thinking about thinking” and help the students ‘learn how to learn’ (Hacker, 1990). Knowing how to learn, and knowing which strategies work best, is valuable skills that differentiate expert learners from novice learners.

Metacognition skills include taking conscious control of learning, planning and selecting strategies, monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies, and changing learning behaviors and strategies when necessary. (Ridley, Schutz, Glanz, & Weinstein, 1992, Grabinger, 1996). . Metacognition, or awareness of the *process of learning*, is a critical ingredient to successful learning. The basic elements of metacognition are:

*Developing* a plan of action, *Maintaining/monitoring* the plan and *Evaluating* the plan.

When *developing* the plan of action, self talk is essential:

1. What in my prior knowledge will help me with this particular task?
2. In what direction do I want my thinking to take me?
3. What should I do first?
4. Why am I reading this selection?
5. How much time do I have to complete the task?

When you are *maintaining/monitoring* the plan of action, ask yourself:

1. How am I doing?
2. Am I on the right track?
3. How should I proceed?
4. What information is important to remember?
5. Should I move in a different direction?
6. Should I adjust the pace depending on the difficulty?
7. What do I need to do if I do not understand?

When you are *evaluating* the plan of action ask yourself:

1. How well did I do?
2. Did my particular course of thinking produce more or less than I had expected?
3. What could I have done differently?
4. How might I apply this line of thinking to other problems?
5. Do I need to go back through the task to fill in any "blanks" in my understanding?

(Excerpted from *Strategic Teaching and Reading Project Guidebook*. (1995, NCREL, rev. Ed.) The above strategy will be defined and executed according to the knowledge a person has and the ability to implement in appropriate way. Most researchers seem to agree that metacognition develops, as a person gets older. According to Block (2002) late development of metacognition is because it requires an ability to stand back and observe oneself, which a young child is unable to perform except for some exceptionally intelligent children. Moreover, the predilection to engage in or recognize the need for metacognitive activity such as comprehension monitoring amplifies with age and that younger children have less of this knowledge than older children (Myers 2000). Flavell, the first person to report metacognition and his colleagues also agree with this (Fisher, 1998).

A research by Zohar & Adi (2003), examined explicit teaching of meta-strategic knowledge in authentic classroom situations. Meta-strategic knowledge (MSK) is general, explicit knowledge about the cognitive procedures that are being manipulated. This study explores: (a) whether these effects are preserved in authentic classroom situations; and, (b) what is the process of change in students' thinking. Participants were 120 8<sup>th</sup> grade students from 6 classes of a heterogeneous

school. Equal numbers of low-achieving and high achieving students were randomly assigned into experimental and control groups. The findings showed dramatic developments in students' strategic and meta-strategic thinking following instruction. The effect of the treatment was preserved in transfer and retention tasks. Our findings show that explicit teaching of MSK had a stronger effect for low achieving students than for high achieving students.

### **2.3 Metacognition and reading comprehension**

Metacognition involves the readers monitoring of whether the written material is successfully comprehended coupled with active reading strategies that enhance and promote comprehension. Israel (2007) notes that the use of metacognitive strategies fosters readers' meaning construction, monitoring of text and their ability to evaluate the text. She also states that metacognitively skilled readers are readers who are aware of knowledge, procedures and control of reading process; they use this knowledge during the reading process to improve reading and comprehension ability (Israel, 2007).

Cognitive and metacognitive strategies are closely related and dependent upon each other; cognitive strategies are used to help an individual to understand a text while metacognitive strategies are to evaluate one's understanding of that text. Metacognitive awareness/knowledge precedes a cognitive activity (Livingston, 1997), it occurs when cognition fails, such as detection that one does not understand what one reads. For example a student is conscious of the difficulty in understanding the

meaning of words (cognition) in a text she reads. Therefore she attempts to understand the words through referring to dictionary, guessing the unknown words through context clues or word parts (metacognition). Knowledge is considered metacognitive if it is actively used in a strategic manner to ensure that goal is achieved.

Reading is a skill-based activity. Abe (1988) suggests that reading comprehension has eight skills - locating details, recognizing the main ideas, recognizing the sequence of events, drawing conclusions, recognizing cause and effect relationship, understanding words in context, making interpretation, and making inference from text. However, Lawal (1990) advances only four skills of reading comprehension which are literal, inferential, evaluative, and creative, Olajide (1991) posits five of such skills to include the literal, reorganization, inferential, critical and creative. Abe (1988), Lawal (1990), and Olajide (1991) agreed that all the reading comprehension skills are elastic, hierarchical and promotable through careful teaching and valuation. These studies demonstrate that successful comprehension does not occur automatically. Rather, it depends on directed cognitive effort, referred to as metacognitive processing, which consists of knowledge about and regulation of cognitive processing. During reading, metacognitive processing is expressed through strategies, which are procedural, purposeful, effortful, wilful, essential, and facilitative in nature (Alexander & Jetton 2000). The reader must purposefully or intentionally or wilfully invoke strategies (Alexander & Jetton 2000), and does so to regulate and enhance learning from text. Through metacognitive strategies, a reader allocates significant attention to controlling, monitoring, and evaluating the reading process (Pressley 2000; Pressley, Brown, El-Dinary, & Afflerbach 1995). Taraban,

Kerr, and Ryneearson, (2004) state that prior research supports the view that college students select and use reading strategies that are oriented toward success in academic tasks. Wade, Trathen, and Schraw (1990) recruited 67 college volunteers who read a 15-page passage at the 11th-grade level followed by a recall test. This type of task, involving extensive reading and subsequent recall, is typical of many college assignments. At eight separate points during reading, participants were asked to provide a retrospective report of their reading strategies. The authors identified 14 strategies from the data, which they called tactics. These were separated into three types, by consensus. One type was text-noting tactics, and included highlighting, underlining, circling, copying key words, phrases or sentences, paraphrasing in notes, outlining and diagramming. The second type was mental-learning tactics and included rote learning of specific information, mental integration, relating information to background knowledge, imaging, visualizing, self-questioning and self-testing. The third type was reading tactics, which included reading only, skimming, reading slowly, and re-reading selected text. These data reveal that reading strategies are directed toward comprehension, but also toward studying and remembering.

In an attempt to relate teacher's questions to levels of thinking, James (1985) proposed three types of thinking - recall, formulation, and reformulation and terminology. She investigated the relationship between the teacher's questions and students' performance in reading comprehension in English in Nigerian schools. Her data consisted of question papers in four subjects set by the Joint Admissions and Matriculation Board (JAMB) through four years (1979 -1982). James (1985), whose theoretical assumption was that everybody has a body of stored information about

the world which could be caused to be processed and integrated into new information to facilitate comprehension, recommended that a reader must make cognitive contributions to the confronted text if appropriate response is to be elicited from the reader. James (1985) found that JAMB examiners used a variety of questions demanding the power of terminology from the students. They gave propositions that were determined by the type of cognitive behaviour and the content being examined, also, they presented real life situations to which candidates applied theories or from which they made predictions. More importantly, she found that little emphasis was placed on higher-order skills of thinking by the examiners. Thus, she complains that the cognitive demands made by JAMB questions on candidates were minimal. James (1985) admits that candidates would do better and demonstrate higher order skills with essay type questions, but opines that objectives type examinations would increase content validity of the test as a measuring instrument. She sums up:

*Academic type reading or study-type reading which obtains at the university level calls for proficiency in the higher order skills of critical thinking, judging, synthesizing and problem solving. If, at the level of entry, the student's cognitive ability is restricted to the level of recall, the implications for course planning for preliminary classes are very clear.*

To help students develop metacognitive skills for reading comprehension, teachers must encourage them to become active learners. For example, students need to set goals for their reading tasks, to plan how they will meet goals and to remedy the situation when they do not meet their goals. This involves knowing certain techniques, such as relating new information to their background knowledge,



previewing materials to be read, paraphrasing ideas presented, and identifying the organizational pattern or patterns of text students need to learn the value of periodically questioning themselves about their ideas in a text to see if they are meeting their goals (Babbs & Moe 1983).

Children should be actively involved in reading authentic materials while monitoring and evaluating their use of reading strategies. This was in keeping with the current view by "most educators who have come to advocate a balanced approach to reading instruction giving attention to phonics skills and exposure to rich literature (Manzo & Manzo, 2004). A phonics approach was applied when relevant or when highlighting the strategy to decode a particular word in context. For example when introducing a student to an unfamiliar section of the text, emphasis was given to word attack skills which involve breaking words into syllables or using the structural analysis of a difficult word. The students' record of reading will also draw the participants' attention to the areas which needed work for example omission of word endings Clay (1991). These records, are a modification of Miscue Analysis and reading Miscue inventory Goldman & Burke (1972) i.e. a teacher takes a running record of the actual reading by a student of a particular text. The selection of the text is important because reading materials normally should be sufficiently difficult for the reader to make oral reading errors (miscues) but not so difficult that the reader loses meaning. An experienced teacher can gain important information from the results on the reading achievement skills of the reader concerned. This technique allows teachers to analyze the types of mistakes or errors made by each student.

The emphasis here is to have the students become mindful of the specific reading strategies one can use to achieve success in reading. The underlying premise is that unsuccessful readers are characteristically non-strategic and that through explicit metacognitive methods of instruction they can improve their reading. Paris, Wasik & Turner (1990), expostulate unskilled readers focus on decoding single words and fails to adjust their reading for different texts and purposes. Also unable to ameliorate comprehensive failure (Mercer 1992). Skilled readers are engaged in active learning strategies they use good monitoring strategies whereby they establish a goal for instructional activity, determine the degree to which they are being met, and if necessary change the strategies being used to attain the goal (Rubin 1997). The skilled readers have the metacognitive abilities that make them know what to do, as well as how and when to do it and are active consumers of information.

Foreman (2001) infers three clusters of metacognitive skills in a skilled reader which are:-

- Being aware of a level of understanding by identifying inconsistencies and inaccuracies while reading.
- Monitoring that the goals for reading are being achieved and that effective strategies are being used to achieve these goals.
- Regulating the use of strategies to ensure that they assist faltering comprehension (for example, re-reading, self-questioning).

The underlying assumption behind metacognitive instruction is that students with learning difficulties are characteristically non-strategic in their approach to learning and are generally lacking in metacognitive ability (Mercer 1992). More importantly

however, metacognitive approaches maintain that through appropriate instruction a learner can become “an active rather than a passive participant in one’s own thinking” (Kuheke & Fly-Jones 1993). In other words, the poor reader can learn to become metacognitive. It is acknowledged that students with learning difficulties need more direct teaching in the form of metacognitive training, especially if they are going to achieve results comparable to those of their average peers (Turner 1992).

Palinscar & Brown documented significant benefits when they implemented Metacognitive Skills of Reading (MSR) with middle year students working in small groups. They found MSR led to significant improvement in students’ ability to perform the three skills from baseline to post intervention. Indeed on daily reading comprehension measures, students who used MSR increased their scores from 30% accuracy at baseline to 80% accuracy at post intervention.

## **2.4 Review of studies on explicit instruction strategies**

Explicit direct instruction strategy is a form of explicit stepwise instruction which model consists of: daily retrospect; presentation of new content; guided practice & individual practice; periodic retrospect and feedback. The model illustrates the transition responsibility from teacher to the student. During the stages of daily retrospect and presentation, the teacher is in control, before the students are able to be responsible for their own learning; they need help and assistance from the

teacher. During the guided practice, the responsibility gradually shifts from teacher to student. During the individual practice the student is responsible (Veeman, 1993). Effective teachers start their lessons with daily retrospect by summarizing the past learning, discussing the homework and activating prior knowledge. When the students do not have prior knowledge, the teacher will have to teach the required knowledge and skills before he starts to present the new subject matter. The daily review provides additional practice and over learning for previously learned materials and allows the teacher to reteach and to provide corrections in case of misunderstanding. The presentation of new knowledge and skills starts with a description of the lesson objectives. Next an effective teacher presents the subject matter in small steps, giving several examples and using clear language. During the presentation the teacher regularly checks whether the students understand the subject matter. At the end of the presentation, the teacher summarizes and stresses the most important parts of the new knowledge and skills. Next the teacher offers the students' sufficient time for practicing the knowledge or skill under guidance. The goal of this guided practice is processing the new information through active practicing. The teacher gives short and clear assignments, asks questions, keeps all students involved and makes them feel successful.

The phase of guided practice continues until most students understand the new information and are to perform new skills. This means that they are ready to work on more assignments independently. They work without interruptions. The students are allowed to help each other when they experience problems, and also their teacher makes it clear that their work will be corrected for feedback purposes (Veeman, 1993; Rosenshine, 1995).

The objective of any metacognitive instructional programme is not so much the teaching and learning of specific content but rather teaching students how to learn and how to demonstrate strategic knowledge in the performance of academic tasks (Ariel, 1992). The underlying premise is that under achievers are characteristically non-strategic and that through explicit metacognitive methods of instruction they can improve their reading ability. The act of monitoring one's own thinking or metacognition is based on factors such as self-knowledge, task knowledge and self-monitoring (Manzo, Manzo & Albee 2004). In other words it is about keeping track of when one is understanding and knowing what to do to improve some aspects of faltering learning. The ability to use metacognitive skills is a solid indicator of both personal responsibility and social emotional adjustment (Manzo & Manzo, 1990; Sanacore, 1984; Wagoner 1984).

One of the first improvement programs based on explicit direct instruction was Direct Instruction Systems in Arithmetic and Reading (DISTAR). DISTAR consisted of instructional procedures within curriculum packages for schools. Many of the DISTAR programmes were quite successful in promoting student achievement for students at risk. The pupils scored higher scores in arithmetic self-image. At the end of high school, the pupils that were in DISTAR-programme during the first years of primary school still performed significantly higher on mathematics, reading and language (Veeman, 1993).

Struggling students need different instructions if they are going to learn to read (Griffit & Oslon 1992; Kuheke & Fly-Jones 1993). This is because unlike successful readers who may discover effective reading strategies on their own, poor readers

appear to require clear teachers explanation of what it is they are doing and how they need to go about it (Pearson & Dole 1987). Metacognitive approaches to the teaching of reading through explicit instruction endeavor to have students become more aware of reading strategies they can use when reading, more skilled at monitoring and evaluating their success at strategy use and their use of comprehension. Furthermore metacognitive models of instruction aim to have students' develop a repertoire of strategies from which they can select appropriately to meet their needs (Griffit & Oslon, 1992).

Metacognitive instructions as it pertains to the teaching of reading involves the explicit teaching of the reading strategies expert readers use, with the aim of students becoming more strategic and metacognitive in their approach to reading (Ariel, 1992). Metacognitive explicit instruction method assumes:

*That students can be taught to become more aware of the reading process and of the factors that impede or facilitate their progress in readings, and that they can be taught various strategies to master the skills in reading including being aware, controlling and monitoring their reading activities (Ariel, 1992).*

In the past decades, there has been research that aims to understand the nature of using explicit direct instructions on metacognitive skills that influence language test performance. Purpura (1999) examined the relationship between explicit direct instruction on metacognitive strategy use and language test performance (First Certificate in English (FCE) Anchor Test), through the applications of the explicit direct instruction with 1,382 learners. The participants answered the context-free strategy use questionnaire prior to the test taking. Purpura found that the model of metacognitive strategy use was a one-dimensional construct consisting of a single

set of assessment processes (e.g., goal setting, planning, monitoring, self-evaluating and self-testing). Purpura found that metacognitive processing had significant, direct and positive effects on all three components of cognitive processing (values between 0.59 and 0.86) which directly impacted the language performance.

Phakiti (2003), through the use of direct explicit instruction and metacognitive questionnaire an EFL achievement test, investigated the relationship between 384 Thai learners' metacognitive strategy use and their reading test performance. The test takers completed the test first and immediately after the test completion, they answered the questionnaire on the degree of their strategy use during the test taking. The rationale underlying this design was that strategy use, like other online cognitive processes would be more directly related to specific language performance than to general strategy use. Using the factor structures to form composites of cognitive and metacognitive strategies for further quantitative analyses. For example, when they translated part of a text (cognitive strategy use), they aimed to see if it made sense (evaluating strategy use), and when they made efforts to summarize the passage (cognitive strategy use), they checked for comprehension (monitoring strategy use). In regards to the relationships between strategies and test performance, cognitive and metacognitive strategies were both positively correlated with the reading test performance. Phakiti (2003) also compared the differences in the strategy use and reading performance among highly successful, moderately successful and unsuccessful learners by means of factorial multivariate analysis of variance (MANOVA) and found the significant differences among these learner groups. There was strong evidence that the highly successful learners reported significantly higher use of metacognitive strategies than the moderately

successful ones, who in turn reported higher use of these strategies than the unsuccessful ones. The qualitative data analysis further supported such findings, suggesting that the successful learners approached the test tasks more strategically than the less successful ones.

Song (2004) investigated the extent to which the use of explicit direct instruction on metacognitive skills accounted for Chinese test-takers' performance in the College English Test Band 4 through regression analyses. Song employed a revised strategy questionnaire mainly based on Purpura (1999). Song found that metacognitive skills accounted for 8.6% of the test score. In the context of the Michigan English Language Assessment Battery Melbourne Papers in Language Testing 2006 (MELAB) with 161 test-takers, Song (2005) found that test-takers' perceptions of metacognitive strategy use fall into three factors (i.e., evaluating, monitoring and assessing).

Cubukcu (2008) presents a study of the teacher trainees in an English department who have received instruction in metacognitive skills awareness for reading comprehension. Metacognition or 'thinking about thinking' involves the awareness and regulation of thinking processes. Metacognitive skills are those strategies which require students to think about their own thinking as they engage in academic tasks. Within this study, students have been taught metacognitive strategies for reading in a five week program they have joined voluntarily. The students have used reading logs to reflect on their own thinking processes as they have been engaged in reading tasks. The purpose of the study was to determine the effectiveness of systematic direct instruction of multiple metacognitive skills designed to assist students in comprehending text. Specifically, the reading comprehension and vocabulary



achievement of 130 third year university students has been investigated to determine whether instruction incorporating metacognitive skills has led to an increase in the reading comprehension of expository texts. In addition, the investigation was also designed to determine the impact of the metacognitive skills on vocabulary.

## **2.5 Review of studies on reading strategies**

General approaches to reading instruction emphasize the meaning of language that is being read, while some other approach emphasize that students also should benefit from immersion in excellent literature that encourages vocabulary enrichment, reading for comprehension and use of context to monitor the story line and make prediction (Pressley & Ranking, 1994).

Reading strategies provide an overall plan to gain meaning from text often termed 'metacognition,' these strategies include scanning the text, sampling, predicting, confirming, understanding and correcting errors as they occur (Winch,2001). Strategies develop with age and experience, are important for effective reading and must be taught. The current understanding of reading strategies has been shaped significantly by research on what expert readers do (Bazerman 1985; Pressley & Afflerbach 1995). In most routine reading contexts, readers are likely to encounter unfamiliar words, syntactic structures or topics that require them to consciously or intentionally evaluate and examine alternative sources or use context clues. Therefore, when difficulty in reading arises, regulatory or control processes, as higher-level processing, such as assessing situations and monitoring current

comprehension are needed because such difficulty affects the speed and effectiveness of reading. Though this metacognitive processing may slow down reading speed, it helps increase reading achievement. According to Gagné, Yekovich and Yekovich (1993), the nature of strategies is related to the control processing component in their human information-processing model which guides and monitors information processing events.

Poor readers are less aware of effective strategies and of the counterproductive effects of poor strategies, and are less effective in their monitoring activities during reading. Palincsar (1985) suggests that an effective reading instruction program requires the identification of complementary strategies that are modelled by an expert and acquired by the learner in a context reinforcing the usefulness of such strategies. Adult and college readers who show evidence of metacognitive deficiencies may be the most aware and capable of monitoring their mental processes while reading. (Cohen 1986) considers unskilled reading comprehension is one aspect to show the importance and need for training. Unskilled readers can become skilled readers and learners of whole text if they are given instruction in effective strategies and taught to monitor and check their comprehension while reading. With respect to this point, Al Melhi (2000) has found that some differences do exist between skilled and less skilled readers in terms of their actual and reported metacognitive awareness reading strategies; their use of global, support and problem solving strategies.

The first factor (Global Reading Strategies) represented a set of reading strategies oriented toward a global analysis of text. Examples include; I decide what to read closely and what to ignore, I think about what I know to help me understand what I

read, and I have a purpose in mind when I read. These strategies can be thought of as generalized, intentional reading strategies aimed at setting the stage for the reading act (setting purpose for reading, making predictions).

The second factor (Problem-Solving Strategies) appeared to be oriented around strategies for solving problems when text becomes difficult to read. Examples of these strategies include "When the text becomes difficult, I reread to increase my understanding;" and "I adjust my reading speed according to what I read." These strategies provide readers with action plans that allow them to navigate through text skillfully. Such strategies are localized, focused problem-solving or repair strategies used when problems develop in understanding textual information (e.g., checking one's understanding on encountering conflicting information or rereading for better understanding).

The third factor (Support Reading Strategies) primarily involved the use of outside reference materials, taking notes, and other practical strategies that might be described as functional or support strategies. Examples include "I take notes while reading;" "I underline or circle information in the text to help me remember it;" and "I summarize what I read to reflect on important information in the text." Strategies such as these serve a useful function for some of the students who seem to invoke them as needed. These strategies provide the support mechanisms aimed at sustaining responses to reading (e.g., use of reference materials such as dictionaries and other support systems). These three types of strategies (i.e., Global, Problem-Solving, and Support Strategies) interact with each other and have an important influence on text comprehension. The information gleaned from the inventory serves

as a catalogue of strategies students report using while reading academic or school-related materials such as textbooks, library materials, and magazine articles.

The role of strategy use in reading comprehension has thus been a topic of discussion in reading literature. Block (2002) suggested that readers need to be ready to “stand back and observe themselves” when they read. Carrell, Gajdusek and Wise (1998) further pointed out that what matters may not be so much what strategies learners use, but rather the knowledge of when, how and why a strategy is to be used. Note that when some metacognitive processes such as goal setting, planning how to achieve goals, monitoring goal attainment and revising plans are deployed automatically, they lose the significance of being part of the higher level processing because they do not appear to be beyond the processing event. Rather they are part of it. Hence, the flow of control in learned, automatized skills is embedded in the skill, although the sequence has a control structure (Gagné, Yekovich & Yekovich, 1993).

One way to increase comprehension is to activate students’ background knowledge. Activating background knowledge is especially helpful to inferential comprehension because the information is not stated literally in the text. The students’ prior knowledge will help in inferring what is meant (Bos & Vaughan 1994). Recht and Leslie (1998) looked at the impact that prior knowledge has on reading performance. Their findings suggest that reader’s background knowledge significantly facilitates comprehension and the quantity and quality of recall. Their research indicates that having superiority ability in reading is not as valuable as prior knowledge of the topic.

Bos and Vaughan (1994) cited in Rothsmith (1998) suggest ways in which background knowledge can be activated before a student reads a text: brainstorming, pre-reading plan and schema activation. Brainstorming may be conducted orally or in writing. Oral forms invite students to contribute what they recall of topics, facts and concepts to form group catalogues of ideas. Following oral brainstorm, the ideas may then be placed into a graphic organizer, for example a word, or a map or a semantic web which sort and label associated ideas informs radiating from a central topic.

The pre-reading plan develops brainstorming by asking students' to reflect on what triggered their association. Such discussion generates further insights and associations. The schema activation strategy encourages students to discuss the events in the story and to hypothesize what they anticipate will happen in the story. Ajideh (2003) in a study on Schema theory based pre-reading task: a neglected essential in the reading class, as an ESL reading instructor worked with a group of intermediate –level students for one academic term, with a special focus on schema-theory –based pre-reading activities. At the end of the term, in a retrospective study the students' impressions and thoughts of the strategies covered during the term revealed that pre-reading activities rely mostly on clarifying the meaning of difficult words or complex structures.

Kasumi (2010), investigated into the Metacognitive reading processes of 168 Sri Lankan students with respect to three reading proficiency levels: low, intermediate and high. With the use of a reading comprehension test, students were grouped into three proficiency levels and their metacognitive awareness of reading processes were assessed using Mokhtari & Reichard's MARSII. A positive relationship was found

between Sri Lankan students' in all three proficiency levels reported using problem solving strategies most frequently followed by global and support strategies with higher use of strategies by higher level students.

Bang & Zhao, (2007) examined the reading strategies used by advanced Korean and Chinese ESL learners when reading academic texts. The results showed that Korean readers demonstrated reliance in dictionaries, habit of translation and use of personal background knowledge in attempts to comprehend academic texts all of which identified as characteristics of skilled readers. Contrastingly the Chinese counterparts preferred using contextual clues, discussion with colleagues and support of peers/teachers as ways of achieving comprehension of academic texts, all of which has been recognized as habits of more skilled readers.

Jimenez, Garcia & Pearson (1996) also investigated the reading strategies used by bilingual latino students who were successful English readers. The study reported on the global level, the successful latino ESL readers invoked prior knowledge about a topic, made predictions, confirmed or disconfirmed their beliefs or used text structures to organize ideas. On the level, the readers based on linguistic context by looking for cognates and by using their knowledge of other similar words in English. The readers broke down the structure of sentences and tried to identify phrases or chunks that were familiar and comprehensible. The study of Wong (2004 cited in Vianty, 2007) with ESL students reported that high level and low level readers did not use metacognitive strategies differently although they differed in terms of awareness and knowledge of cognition.

## **2.6 Strategy use and performance in English language**

Several scholars have addressed the core problems of communicative competence in the use of English as second language and its use as the main language of instruction in Nigeria's education delivery process. It is unfortunate that most school leavers (apart from the products of elite private schools) do not possess the required competence in the four language skills (reading, writing, listening and speaking) for both cognitive and communicative functions. Statistics released by the West African Examination Council, which conducts the West African Senior Secondary Certificate Examination, show that less than ten percent of secondary school leaver passes in English language at credit level. At the tertiary level of education students having so much difficulty with their communicative skills in English that they cannot function effectively in the academic use of English (Okoro, 2000). There is no doubt that there is a great diversity of varieties and functions of English in Nigeria. For example, it is extensively used in both the electronic and the print media, in the judiciary, the police, the armed forces, the legislative, etc and as a lingua franca in political mobilization, ethical orientation and population education. This confirms the entrenchment of English as the dominant official language of Nigeria. The nagging problem however concerns the quality of English that is taught and used in the school system. The concern being expressed in informed educational circles is the extent to which the variety and quality of English being learned and used in the school system can serve in achieving Nigeria's educational goals and the objectives.

In view of these, a number of questions present themselves for consideration: Are students really becoming deficient in their mastery of English? Are they becoming deficient in their mastery of other school subjects? Are they performing worse in English than they are in other subjects? These questions require empirical investigations.

Phakiti,(2003b) examines the nature of cognitive strategies (comprehending, retrieval and memory strategies) and metacognitive strategies (planning, monitoring and evaluating strategies) and their direct and indirect relationships to English as a Foreign Language (EFL) reading test performance, employing the Structural Equation Modeling (SEM) approach. The study was carried out at a government university in Thailand in which 358 students took a reading comprehension test and immediately after completing it, answered a questionnaire on the strategy used. The SEM results show that: (1) memory and retrieval strategies facilitated EFL reading test performance via comprehending strategies; (2) monitoring strategies performed an executive function on memory strategies, whereas evaluating strategies regulated retrieval strategies; (3) planning strategies did not directly regulate memory, retrieval or comprehending strategies, but instead regulated these cognitive strategies via monitoring and evaluating strategies; and (4) only comprehending strategies were found to directly influence EFL reading test performance.

Muniz-Swicegood (2010) posits that studies conducted over the last decade provide evidence that linguistically diverse children continue to lag behind monolingual English-speaking children in reading performance (Office of Bilingual Education and Minority Language Affairs, 1989-90). At the same time, additional research provides evidence that bilingual Spanish dominant students use fewer cognitive strategies



than children who communicate through the use of only one communication system. The bilingual Spanish dominant students in this experimental study were taught to use metacognitive reading strategies while reading in Spanish. Primary findings indicated that, following training in metacognitive Spanish reading strategies, Spanish dominant bilingual children improved in the area of reading performance on the La Prueba Spanish reading test and the Iowa Test of Basic Skills English reading test. Post interview results of the Burke Reading Interview, translated into Spanish, showed increases in the frequency of Spanish reading strategies following metacognitive intervention. Directionality was also found in the area of transferal of metacognitive strategies across languages (from Spanish to English).

Phakiti (2003a) reported the differences between males and females in terms of strategy use and L2 reading performance. Phakiti (2003a) found that although males and females did not differ in their reading performance and their use of metacognitive skills, males were found to report significantly higher use of metacognitive skills than females. However, at the gender plus success level, no gender difference was found (e.g., highly successful males did not differ in terms of L2 reading performance and strategy use from their female counterparts).

In conclusion, findings and issues raised in the literature review have implications for the design of the present study. First, the use of explicit direct instruction on metacognitive skills is a conscious process relevant to language test performance. Hence, to explain the nature of language performance, metacognitive skills need to be taken into account. Second, metacognitive skills tend to contribute differently to language test performance. Based on previous research, metacognitive skills have been found to directly regulate cognitive strategy use which in turn directly

influences communicative language use. Planning strategies direct the course of individuals' thinking which indirectly results in specific cognitive strategy use for specific tasks. Planning helps allocate resources to the current task (via monitoring strategies), determine the order of steps to be taken to complete the task and set the intensity or the speed at which one should work on the task (self awareness strategies). Monitoring and self awareness strategies help identify the task on which one is currently working, check on the current progress on that task, evaluate that progress and predict what the outcome of that progress will be. It can be argued that students need to be capable of employing the following kinds of strategies effectively: (1) planning strategies to determine how to complete and solve reading task difficulty; (2) monitoring strategies to control ongoing performance; and (3) self-awareness strategies to judge or make decisions about current performance. These strategies are strongly associated with the ability to assess situations of language use (Bachman & Palmer, 1996). The significant relationships among planning, monitoring and self-awareness strategies provide empirical evidence in support of the notion put forth by a number of researchers (e.g., Bachman & Palmer, 1996; Purpura, 1999) that these metacognitive strategies are highly interrelated.

Gender issue has continued to be a relevant variable in the academic achievement of learners at all levels. Gender factor examined by Halpern (1992, 1994 and 1997) point to girls having advantage in a variety of verbal task. This is because to a greater extent girls acquire language with greater speed and proficiency than boys and that gender-related difference in verbal abilities appear very early as children begin to talk. Zamit (1993) observes and believes that girls have more positive

attitude toward language learning than boys. Likewise, Oyetade (1990) agreed with the superiority of girls to boys as they tend to perform better than the boys in language learning, reading and verbal skills. Whereas, Okoye (1983) and Oskamp (1977) find no significant differences in gender and learners' performances, they submit that eventual achievement by learners is hinged on many interrelated variables and personal effort than gender variable. Therefore, gender issues will remain inconclusive and will continue to gain the attention of language scholars since there is yet to emerge a clear picture of the role of gender in academic performance and there were no significant differences in gender and learners' performances in this study.

## **2.7 Appraisal of Literature review**

The study is aimed at determining the effectiveness of explicit instruction and reading strategies on metacognitive skills and performance in English Language among senior secondary students. Relevant literatures were reviewed. Overview of Metacognition, Metacognitive Skills, Metacognitive Skills and Reading Comprehension, Studies on Explicit Instruction Strategies, Studies on Reading Strategies, and Strategy and Performance in English Language.

Metacognition reflects the knowledge of self as a learner, that is, conscious self-control and self-regulation of cognition, which involves planning, monitoring, and self-awareness skills. This is true of most of the literature reviewed. The positive influence of metacognition on academic performance is evident in most research

works. However, the precise ways in which to improve the level of positive influence of metacognition on academic performance to obtain optimal success is far from clear; as researchers have not carried out study on the effectiveness of explicit instruction and reading strategies on metacognitive skills and performance in English Language. Also studies done so far have concentrated on the influence of metacognitive strategies and cognitive strategies among EFL students in Language learning to the utter neglect of ESL students.

Lack of literature on the relative effectiveness of explicit instruction and reading strategies in enhancing metacognitive skills and academic performance in English language of secondary school students in our clime has created a wide gap between the literature reviewed and the present research work hence the need for the study.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter discusses the research design, area of study, population, sample and sampling technique, instrumentation, scoring of instrument, procedure for data collection, procedure for data analysis and intervention procedures.

#### **3.1 Research design**

The research designs used for this study were the descriptive survey and quasi experimental (pretest/posttest control group design). The purpose of the survey was to do a baseline study assessment of traits of interest to the researcher in order to isolate the unique elements in the population for the study. The quasi-experimental design was also used in order to apply an experimental mode of analysis and interpretation to bodies of data not meeting the full requirements of experimental control.

**Table 1: Results of Survey Distribution Table of Participants for baseline study.**

Name of School	Zone	Population of SS3 students	Male	Female	Number of students in pre-assessment scores	
St. Anthony secondary School, Umudioka	3	87	46	41	<b><u>High</u></b> <b>35</b>	<b><u>Low</u></b> <b>52</b>
Prince Memorial Secondary School, Onitsha	2	86	44	42	<b>35</b>	<b>51</b>
Okija Grammar School, Okija	4	76	40	36	<b>35</b>	<b>41</b>
Total		249	130	119	<b>105</b>	<b>144</b>

**Source: Researcher's Survey study 2011.**

Evidence from the above table shows, a total number of two hundred and forty nine students participated in the study. Out of this, 87 participated from school 1 which involved 46 males and 41 females. 86 participated in school 2 which involved 44 males and 42 females, while school 3 which involved 40 males and 36 females. Therefore school 1 had the highest number of participants. All the participants were tested using English Language Achievement test, MARSI, and SMI. 144 participants scored below 50 marks in Achievement test, 50 marks in SMI and 75 marks in MARSI (50% of the total scores on each instrument) respectively and hence deemed to have low level of metacognitive skills and academic performance. These qualified for the intervention programme.

### **3.2 Area of study**

The study was conducted in Anambra State which is in the South East geographical zone of Nigeria. Anambra State has one of the highest population densities in Nigeria; it lies in the Anambra Basin and is rich in natural gas and kaolin. The state has numerous fast growing intermediate and large sized towns. It is an Igbo speaking environment and the commercial heart of Eastern Nigeria and the whole country. The state is a socio cultural and commercial nerve centre that has attracted people from all over the federation as well as foreigners from Africa and the rest of the world. This study was carried out in Anambra State because of its diversity, availability of schools for various levels of education and its relative representation of the entire population of Nigeria. Anambra State has six (6) Educational Zones. This study was conducted in three (3) schools within the six Educational Zones of the state, which include Zone 1: Awka, Zone 2: Onitsha, Zone 3: Ogidi, Zone 4: Nnewi, Zone:5 Aguata and Zone 6: Otuocho.

### **3.3 Population of study**

The target population for this study comprised all male and female senior secondary three (SS3) students in Anambra state, Ngeria.

### **3.4 Sample and sampling procedure.**

The sample for this study was drawn from two Educational Zones (Zones 2 & 3) in Anambra State. Using the simple random sampling method three public schools were selected from the two Educational Zones. The schools are;

1. St Anthony Secondary School Umudioka.
2. Prince Memorial High School Onitsha.
3. Washington Memorial Secondary School Onitsha.

Using the stratified random sampling technique, along class and gender lines, six intact classes were selected. A total of two hundred and forty-nine (249) students, (both male and female) were selected by simple random sampling for the baseline assessment of the study. Eighty-three participants were drawn from each of the 3 selected schools.

The base line assessment was done using the English Language achievement test, the State Metacognitive skills Inventory (SMI) and Metacognitive Awareness Reading Skills Inventory (MARSI). The maximum score obtainable by participants were 100 in achievement test, 100 in SMI & 150 in MARSI. 144 participants scored below 50 in Achievement test, 50 in SMI and 75 in MARSI (50% of the total scores on each instrument) respectively and hence deemed to have low level of metacognitive skills and academic achievement. These 144 participants consist of 52 participants in school 1 Government Secondary School; 51 participants in school 2, Prince Memorial High School, and 41 participants in school 3 Washington Memorial Secondary School. The two Educational Zones were randomly assigned the intervention groups and the control group. They qualify for the intervention. See table 2:



**Table 2: Distribution of participants by gender and intervention groups.**

<b>Groups</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>School 1</b> Explicit Instruction Strategy	33	19	52
<b>School 2</b> Reading Strategy	20	31	51
<b>School 3</b> Control	26	15	41
Total	79	65	144

### **3.5 Instrumentation**

The following instruments were used to obtain relevant data for this study.

1. English Language Achievement test.
2. State Metacognitive Inventory (SMI)
3. Metacognitive Awareness Reading Strategies Inventory (MARSI)

### 3.5.1 English Language Achievement Test

**English Language Achievement Test** was used to test the metacognitive awareness skills of students while reading text. This was adapted from past WAEC English Language papers. The comprehension passage and questions that follow the passage was used for the achievement test.

Read the passage below carefully and answer the questions that follow:

Mention tourism to many a Nigerian before June, 1999 and the responses that greeted you was that of indifference. However, all that seems to be gradually giving way to enthusiastic feelings since the creation of a ministry to *harness* the nation's abundant tourism potentials. So from Yankari, New Bussa and Mambilla Plateau to Obudu, and Ikogosi, life appears to be glowing anew. Already things are beginning to take shape in these tourist attractions. Their boards and management are currently streamlined to meet the changing needs of the sector. Although, many of the tourists centre predate the nation's independence, the Nigerian mentality of over-dependence on oil has not allowed the government and its citizens to have a clear view of the *boundless* gift of nature, this dispositions sharply contrasts with what obtains in some east and central African countries which economies largely depend on tourism.

1. What step is being taken to turn around tourism in Nigeria?
2. Find one word that means the same as and which can replace each of the following words

(i) Harness (ii) Boundless

### 3.5.2 The state Metacognitive Inventory (SMI)

**The State Metacognitive Inventory (SMI)**, is a 20 item inventory instrument developed by O'Neil and Abedi (2000). It is a self-assessment questionnaire which measures metacognitive skills (planning, monitoring, control and self-awareness). The instrument has subscales and is reliable with alpha above 0.70 using Cronbach's alpha technique. The subscales have 5 items each which meet the brevity standards. It yields useful information about both the assessment and the students. The inventory has 3 sub scales which are:

- self-awareness skills,
- planning skills
- Monitoring skills.

*Responses are as follow:*

1 = "I never or almost never do this."

2 = "I do this only occasionally."

3 = "I sometimes do this" (50% of the time).

4 = "I usually do this."

5 = "I always or almost always do this."

After reading each statement, circle the number (1, 2, 3, 4, or 5) that applies to you using the keys provided. Please note that there are no right or wrong answers to the

S/N	ITEM					
1	I was aware of my own thinking.	1	2	3	4	5
2	I was aware of which thinking technique to use and when to use it.	1	2	3	4	5
3	I am aware of which strategy to use and when to use it	1	2	3	4	5
4	I attempt to discover the main ideas in the text questions.	1	2	3	4	5
5	I try to understand the text questions before I attempt to solve them.	1	2	3	4	5

### 3.5.3 Metacognitive Awareness Reading Strategies Inventory (MARSI)

**Metacognitive Awareness Reading Strategies Inventory (MARSI)** is a 30 item inventory developed by Mokhtari & Reichard (2000) to assess adolescents' and adult reader's metacognitive skills and perceived use of reading strategies while reading academic or school related materials. The MARSI has 3 strategic subscales and its reliability is 0.89. The three sub scales are:

- Global Reading Strategies
- Problem solving strategies
- Support Reading Strategies

The instrument is reliable and valid for assessing students' metacognitive awareness and perceived use of reading strategies while reading for academic purposes. It also shows evidence of high use of Global and problem solving strategies.

*Responses are as follows:*

1 = "I never or almost never do this."

2 = "I do this only occasionally."

3 = "I sometimes do this" (50% of the time).

4 = "I usually do this."

5 = "I always or almost always do this."

After reading each statement, circle the number (1, 2, 3, 4, or 5) that applies to you using the keys provided. Please note that there are no right or wrong answers to the statements in this inventory.

S/N	ITEM					
1	I have a purpose in mind when I read.	1	2	3	4	5
2	I think about what I know to help me understand what I read.	1	2	3	4	5
3	I preview the text to see what it's about before reading it.	1	2	3	4	5
4	I think about whether the content of the text fits my reading purpose.	1	2	3	4	5
5	I underline or circle information in the text to help me remember it.	1	2	3	4	5

### **3.5.4 Scoring of SMI and MARSI**

There is direct scoring for both instruments (SMI and MARSI).

- a. Direct scoring: add together the value of the number marked in relevant items. For example, if items 3, 4, 5, 6 the numbers marked are 2, 4, 3.5 respectively, the scores for the four items is  $2+4+3+5=14$ .
- b. Add up the score under each sub scale.
- c. Divide the subscale score by the number of statements in each column to get the average for each subscale.
- d. Calculate the average for the whole inventory by adding up the subscale scores and dividing by 30.

### **3.6 Pilot study**

A pilot study was carried out, it involved 30 students who did not participate in the real exercise. The thirty students involved were from a different educational zone from the ones used for the study. The purpose of the pilot study was to determine the psychometric properties of the instruments such as reliability and validity of the instruments and to study the reaction of students also. To establish the reliability, the test retest methods were used. All the instruments were administered twice within an interval of two weeks between the first and second administration to determine the consistency of the scores. The correlation between the two sets of scores of the total items on the instrument, as well as the subscales were determined using the Pearson's Product Moment Correlation Coefficient. This is presented in table 3 below

**Table 3: Test re-test Reliability Estimate of the Research Instruments.**

<b>Instrument</b>	<b>Variables</b>	<b>N</b>	<b>Test Position</b>	<b>Mean X</b>	<b>SD</b>	<b>r<sub>n</sub></b>
<b>Achievement Test</b>	Ach. Test	<b>30</b>	1 <sup>st</sup>	40.30	10.48	0.57
			2 <sup>nd</sup>	49.37	12.48	
<b>Explicit Instruction</b>	Explicit Instruction	<b>30</b>	1 <sup>st</sup>	74.13	8.62	0.60
			2 <sup>nd</sup>	73.8	7.07	
	Self-Awareness	<b>30</b>	1 <sup>st</sup>	22.53	4.89	0.61
			2 <sup>nd</sup>	20.97	3.39	
	Monitoring	<b>30</b>	1 <sup>st</sup>	18.83	4.2	0.56
			2 <sup>nd</sup>	20.33	6.18	
	Planning	<b>30</b>	1 <sup>st</sup>	19.33	3.01	0.60
			2 <sup>nd</sup>	20.57	6.06	
<b>Reading Strategy</b>	Reading Strategy	<b>30</b>	1 <sup>st</sup>	98.27	12.56	0.54
			2 <sup>nd</sup>	102.97	11.3	
	Global	<b>30</b>	1 <sup>st</sup>	46.87	7.79	0.64
			2 <sup>nd</sup>	48.67	5.93	
	Support	<b>30</b>	1 <sup>st</sup>	30.07	6.08	0.63
			2 <sup>nd</sup>	30.8	4.05	
	Problem Solving	<b>30</b>	1 <sup>st</sup>	28.93	4.6	0.60
			2 <sup>nd</sup>	24.67	4.46	0.63

### **3.7 Appointment and training of research assistants**

For the collection of data, the researcher appointed 2 research assistants. These assistants were 2 graduates of Nnamdi Azikiwe University, Awka, Anambra State. They were trained in two sessions of one hour each. The training covered the following areas:

- ❖ Orientation with the instrument and the value of metacognitive skills on academic achievement.
- ❖ Successful administration of the instrument to ensure that the students responded honestly, openly and accurately.

### **3.8 Procedure for data collection and permission to conduct research**

With a letter of introduction from the Head of Department of Educational Foundations, University of Lagos, Akoka the researcher sought and got permission from the principals of the selected schools used for the study. The purpose of the study and the benefits to be derived were discussed and explained. The principals granted the permission and allowed the use of any of their classrooms. The researcher was introduced to the vice principals (academics) and the subject teachers in each of the schools who also assisted throughout the period of the study.



### **3.9 Intervention procedure**

The intervention programme for metacognitive skills was carried out in three phases.

#### **Phase I; Pre-intervention assessment:**

The researcher investigated the level, of the students metacognitive skills using the assessment instruments; English Achievement Test, SMI & MARSII.

These were administered to the participants by the researcher to help determine each participant's level of academic performance and metacognitive skills.

#### **Phase II Intervention programme:**

The research was carried out over a period of seven weeks. One week each was used for pre-test and post-test. The intervention consisted of Explicit instructions and Metacognitive Reading strategies. Participants in the two invention groups were exposed to one hour of training/discussion twice a week for 5 consecutive weeks. The control group did not receive any intervention procedure. However, they were exposed to the Explicit instruction strategies two weeks after the intervention programmes were concluded so that the control group could also benefit from the research as both strategies worked effectively.

#### **Phase III: Post- Intervention assessment.**

At the end of the intervention programme the research instruments (English language achievement test, SMI and MARSII were re-administered as the post-test to

all the participants in the experimental groups, to know the effects of the intervention programme on the participants.

### **Intervention 1: Explicit Instruction Strategy:**

It is believed that one needs explicit instruction in order to foster his metacognitive knowledge. Paris and Winograd (1990) emphasized the important role metacognition plays in academic learning and recommended that Direct Instruction is one effective classroom practice that would help students develop their metacognitive skills. The purpose of **direct instruction** is to provide **explicit** explanations on the notion and construct of metacognition, so that the students who used to be subconsciously aware of or most of the time were unaware of their own cognitive activities will be metacognitively aware of their mental actions when they perform cognitive tasks.

The sequence of instruction in the explicit instruction approach is a five phase recursive cycle for introducing, teaching, practicing, evaluating, and applying learning strategies. In this approach, highly explicit instruction in applying strategies to learning tasks is gradually faded so that students can begin to assume greater responsibility in selecting and applying appropriate learning strategies by following the five steps of the training model.

**Session 1: *Preparation: (self awareness skills)*.** The purpose of this phase was to help students identify the strategies they were already using and to develop their metacognitive awareness of the relationship between their own mental processes and effective learning. In this step the researcher explained the importance of

metacognition, in relation to reading comprehension, which was the subject of this study. Students with the help and guidance of the researcher, set specific goals for mastering certain chapters in the textbook (Senior English Project 3) within a certain time frame, and they planned their time in order to accomplish the task;

*Using strengths.* While reading, exploiting personal strengths in order to better understand the text. If one is a good reader, he focuses on the text and the information.

*Searching according to the goals.* Scan and search out information relevant to what one already knows and reading goals.

*Reading goals.* Evaluate whether what one is reading is relevant to reading goals such as the questions that usually follow a reading passage.

**Session II: *Presentation: (planning skills)*.** This phase related to modelling the learning strategy. The researcher started with review of what was done in the last session, asked questions concerning searching out information related to background knowledge and reading with relevance to goal. The researcher started the new session by talking about the characteristics, usefulness, and applications of the strategy explicitly and through examples. The researcher also illustrated her own strategy through a reading task in relation to unknown vocabularies. Learners were explicitly taught about the variety of strategies to use (two at a time). They received explicit instruction on how to use these strategies. They were told that no single vocabulary learning strategy would work in every case. For example, word analysis strategy (dividing the word into its component morphemes) may work with some words but not with others. Using contextual cues for guessing the meaning of

unknown words may be effective in some rich-context cases but not in context-reduced texts. The preparation and planning, the selection of vocabulary learning strategies, monitoring of strategy selection and use, orchestrated use of several strategies, and evaluation of effectiveness of metacognitive strategies for vocabulary learning were illustrated through several examples.

- *Inferring meaning* (through word analysis or context clues): While reading, one tries to determine the meaning of unknown words that seem critical to the meaning of the text.

*.Asking self-questions about the text:* While reading asking self-questions on the content of the texts.

**Session III: *Practice: (monitoring)*.** In this phase, participants had the opportunity of practising the learning strategies with a reading task from the English Project 3. They were asked to make conscious effort using the metacognitive strategies in combination with vocabulary and reading, with reference to the last lesson. The participants, with the researcher's assistance, practised monitoring while using multiple strategies available to them. The participants became aware of multiple strategies available to them by learning, for example, how to use both word analysis and contextual clues to determine the meaning of an unfamiliar word. Students were shown how to recognise when one strategy was not working and how to move on to another. The students needed to be able to turn to other strategies such as using contextual clues and reading aids to help them understand the meaning words.

*Deciding on the difficulty:* I note how hard or easy a text is to read.

*Using aids:* I make use of dictionary, encyclopaedia to find the meaning of new or difficult words.

*Revising:* While I am reading, I reconsider and revise my prior questions about the topic, based on the text's content.

**Session IV: *Expansion: (monitoring)*** The main purpose of this phase was to provide students with opportunities to evaluate their own success in using reading strategies, thus developing their metacognitive awareness of their own learning processes. The researcher reactivates their prior knowledge by choosing a comprehension passage from their text (Senior English Project 3). She then asked them to read and apply the self-awareness, planning and monitoring skills. Activities used to develop students' self-evaluation insights included self-questioning, and discussions after strategies practice, learning logs in which students recorded the results of the application of their learning strategies, and open ended questions in which students expressed their opinions about the usefulness of particular strategies.

*Evaluating:* As I am reading, I evaluate the text to determine whether it contributes to my knowledge/understanding of the subject.

**Session V: *Evaluation: (self-awareness, planning and monitoring)*** In this final phase students were encouraged to a) use the strategies that they found most effective, b) apply these strategies to new contexts, and c) devise their own individual combinations and interpretations of metacognitive learning strategies. Students were first of all, asked to read a comprehension passage from their text

(Senior English Project 3), make notes on the passage and then answer the questions that followed. The researcher looked through their work, assessed them, and then went on to explain how to:

*Use background information:* While reading, reconsider and revise background knowledge about the topic, based on the text's content.

*Revise:* While reading reconsider and revise prior questions about the topic, based on the text's content.

*Guessing the later topics:* Students anticipate information that will be presented later in the text.

Finally evaluation and feedback of progress were made. Participants with specific needs were attended to and they were informed that the next session would be in a week's time.

## Intervention 1; Explicit Instruction Strategy Guide

Sessions	Skill	Objectives	Activities
		At the end of each session the students should be able to:	
Preparation	Self-Awareness	Identify already known strategy. Develop metacognitive awareness of the relationship between their own mental processes and effective learning.	Preview text & information, search out information relevant to reading goal, relate information to background knowledge.
Presentation	Planning	Know the usefulness, and application of strategies.	Retrospect of the last lesson, reading of text, making notes & underlining of words while reading. Applying strategies- context clues, word analysis, guessing meaning, rereading.
Practice	Monitoring	Analyze the effectiveness of strategies and monitor the progress of learning.	Guided and individual practice using strategies; word analysis, context clues, rereading, using reading aids- dictionary, ask self questions.
Expansion	Monitoring, planning & self awareness	Evaluate their success in development of metacognitive awareness of their learning processes	Apply strategies to other reading texts through guided and individual practice, discussions writing summaries.
Evaluation	Self awareness, planning & monitoring	Use effective strategies, apply them to new contexts and devise their own combination of strategies.	Retrospect, presentation of new text, using background information, revision, questions/discussions, exchange exercise and mark.

## **Intervention 2: Reading Strategies.**

The researcher explains to the students what reading strategies are all about, and how they will help to develop their metacognitive skills. These strategies which are global, problem solving, and support are such that you can learn readily and then apply not only to the reading selections in this class, but also to your other college readings. Although mastering these strategies will not make the critical reading process an easy one, it can make reading much more satisfying and productive and thus help you handle difficult material well and with confidence. The global reading strategy involves previewing and contextualizing; problem solving strategy involves questioning to understand and remember and reflecting on challenges to your beliefs and values; while the support reading strategy involves outlining and summarizing.

Fundamental to each of these strategies is annotating directly on the page: underlining key words, phrases, or sentences; writing comments or questions in the margins; bracketing important sections of the text; constructing ideas with lines or arrows; numbering related points in sequence; and making note of anything that strikes you as interesting, important, or questionable. The Senior English Project 3 for Secondary Schools was also used for teaching reading strategies.

**Session 1: Previewing:** *Learning about a text before really reading it.* (Global strategy)

The researcher explained that previewing enables readers to get a sense of what the text is about and how it is organized before reading it closely. The researcher



explained that the global reading strategy involved seeing what you can learn from the head notes or other introductory materials, skimming to get an overview of the content and organization, and identifying the rhetorical situation. Checking whether the text content fits purpose, predicting what text is about, previewing text for content, deciding what to read closely, and relating the content with prior knowledge of the text to enhance reading comprehension.

### **Session II: Contextualizing:** (Global strategy)

The researcher in this phase, chose a comprehension passage from their English textbook, and asked them to preview, scan and relate to prior knowledge before reading. The researcher went on to make the students understand that when you read a text, you read it through the lens of your own experience. Your understanding of the words on the page and their significance is informed by what you have come to know and value from living in a particular time and place. But the texts you read were all written in the past, sometimes in a radically different time and place. To read critically, you need to contextualize, to recognize the differences between your contemporary values and attitudes and those represented in the text. Setting purpose for reading and activating prior knowledge to personalize and remember the information.

### **Session III: Questioning to understand and remember:** (Support strategy).

In this phase with reference to the text read in the previous session, the researcher told the students to ask themselves questions concerning the passage read. The researcher explained to the students, who were accustomed to teachers asking

questions about their reading. These questions are designed to help you understand a reading and respond to it more fully, and often this technique works. When you need to understand and use new information, it is most beneficial if you write the questions, as you read the text for the first time. With this strategy, you can write questions any time, but in difficult academic readings, you will understand the material better and remember it longer if you write a question for every paragraph or brief section. Each question should focus on a main idea, not on illustrations or details, and each should be expressed in your own words, not just copied from parts of the paragraph.

**Session IV: Reflecting on challenges to your beliefs and values:** *Examining your personal responses.* (Problem solving strategy)

The researcher in this session asked the students to relate the contents of the passage read to their beliefs and attitudes. The reading that you do for this class might challenge your attitudes, your unconsciously held beliefs, or your positions on current issues. As you read a text for the first time, mark an X in the margin at each point where you feel a personal challenge to your attitudes, beliefs, or status. Make a brief note in the margin about what you feel or about what in the text created the challenge. Now look again at the places you marked in the text where you felt personally challenged. What patterns do you see? The researcher goes on to explain what problem-solving strategies include; reading slowly and carefully, adjusting reading rate, pausing to reflect on reading and relating to prior knowledge, rereading, and visualizing information read, reading text out loud, and guessing

meaning of unknown word. Using reference aids such as the dictionaries to find the meaning of these words

**Session V: Outlining and summarizing:** *Identifying the main ideas and restating them in your own words.* (Support strategy)

A new passage was given to the students from the text, the researcher asked them to apply the other strategies that had been learnt. From the responses of the students, the researcher went on to explain outlining and summarizing were especially helpful strategies for understanding the content and structure of a reading selection. Whereas outlining reveals the basic structure of the text, summarizing synthesizes a selection's main argument in brief. Outlining may be part of the annotating process, or it may be done separately. The key to both outlining and summarizing was being able to distinguish between the main ideas and the supporting ideas and examples. The main ideas form the backbone, the strand that holds the various parts and pieces of the text together. Outlining the main ideas helps you to discover this structure. When you make an outline, don't use the text's exact words. Summarizing begins with outlining, but instead of merely listing the main ideas, a summary recomposes them to form a new text. Whereas outlining depends on a close analysis of each paragraph, summarizing also requires creative synthesis. Putting ideas together again -- in your own words and in a condensed form -- shows how reading critically can lead to deeper understanding of any text through taking notes while reading, paraphrasing text information, revising previously read information, asking self questions, using reference materials as aids, underlying text information, discussing reading with others, and writing summaries.

Finally the researcher reviewed the different strategies discussed earlier and clarified questions raised by the participants.

### **Intervention 2; Reading strategies Guide**

<b>Sessions</b>	<b>Strategy</b>	<b>Objectives</b>	<b>Activities</b>
		At the end of each session the students should be able to:	
Previewing	Global	Build a knowledge base necessary for dealing with content and structure of a text.	Read head notes, skimming to get overview, checking content and activating prior knowledge.
Contextualizing	Global	Read through a given text using their prior knowledge to focus attention.	Setting purpose for reading, predicting what the text is about, relating content with prior knowledge.
Questions to Support understand and remember		Comprehend and retain information and apply to new contexts.	Making notes, using reading aids e.g dictionaries, asking questions and answering.
Reflecting on Problem challenges to your solving beliefs and values		Examine their personal responses	Reading slowly, rereading, visualizing information read.
Outlining and summarizing	Global, support problem solving	Identify main ideas and restate them in their own words	Underlining, outlining, annotating and summarizing main ideas.

## **CHAPTER FOUR**

### **RESULT OF DATA ANALYSIS**

#### **4.0 Introduction**

This chapter presents the results obtained from various statistical analysis carried out in the study. Seven null hypotheses were formulated to guide the study. The data collected using the various instruments were analyzed using descriptive statistics such as mean scores, standard deviation and mean difference. While inferential statistics such as Fisher's protected t-test was used for pair-wise comparison of group means appropriate for each hypothesis. All hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance. The results obtained from the various statistical analyses carried out are presented below

#### **4.1 Test of Hypotheses**

##### **Hypothesis One**

Hypothesis one: There is no significant difference in the post-test scores in English Language achievement among participants exposed to reading strategies, explicit instruction and control group. The hypothesis was tested using analysis of covariance statistics. The results of the analysis are as presented in Tables 4, 5 & 6 below.

**Table 4: Descriptive data on influence of experimental condition on English Language achievement among participants.**

Group	Gender	N	Pre-test Mean	SD	Post-test Mean	SD	MD
Explicit Instruction	Total	52	40.65	10.84	59.42	9.86	18.77
Reading Strategy	Total	51	41.55	10.35	56.12	9.15	14.57
Control	Total	41	40.85	8.33	43.08	8.06	2.23

Table 4 shows that participants exposed to explicit instruction had the highest mean difference score of 18.77 followed by those exposed to reading strategies that had a mean difference score of 14.57 while the control group had the lowest mean difference score of 2.23. To determine whether significant difference in English Language achievement exist among participants analysis of covariance statistics was carried out. The result of the analysis of covariance is as presented in Table.5.

**Table 5 Analysis of Covariance on Influence of experimental conditions on English language achievement among participants.**

Sources of Variation	Sum of squares	of Degrees of Freedom	Mean squares	of F-ratio
Main effect	7441.83	6	1240.31	32.43
Covariate	52.92	1	52.92	1.38
Experimental Conditions	828.17	2	414.08	10.83*
Within Group	5239.61	140	37.42	
Total	13562.53	143		

\*significant at 0.05; df=2 & 140; critical f= 3.06.

Evidence from table 5 shows that a calculated F-value of 10.83 resulted as the influence of experimental conditions on English language achievement among participants. Thus calculated F-value is significant since it is higher than the critical F-value of 3.06 given 2 and 140 degrees of freedom at 0.05 level of significance. The null hypothesis was consequently rejected.

Based on the significant F-value obtained, further analysis of data was done using Fisher's protected t-test to do a pair wise comparison of group means in order to determine which group differs from the other in English language and the trend of difference. The result of the analysis is presented in table 6

**Table 6: Fisher's protected t-test on difference in English language achievement across experimental conditions.**

Group	Explicit Instruction n=52	Reading strategies n=51	Control n=41
Explicit Instruction	59.42 <sup>^</sup>	2.73*	12.84*
Reading strategies	3.30	56.12	10.17*
Control	16.34	13.04	43.08

<sup>^</sup> = Group means are in the diagonal; difference in group means are below the diagonal while protected t-test values are above the diagonal.

\*= significant at 0.05 level.

Table 6 shows that participants exposed to explicit instruction significantly have higher English language performance than those exposed to reading strategies ( $t=2.73$ ;  $df=101$ ; critical  $t= 2.00$ ;  $P<0.05$ ). Similarly participants exposed to explicit instruction significantly have higher English language achievement than those in the control group ( $t=12.84$ ;  $df= 91$ ; critical  $t=2.00$ ;  $P<0.05$ ). Again participants exposed to reading strategies significantly have higher English language achievement than those in the control group ( $t=10.17$ ;  $df= 90$ ; critical  $t= 2.00$ ;  $P<0.5$ )

### **Hypothesis two:**

There is no significant difference in the post-test scores in self-awareness skills among participants exposed to explicit instruction and reading strategies and the control group. The hypothesis was tested using analysis of covariance statistics. The result of the data analysis is as presented in Tables 7, 8 & 9 below.



**Table 7: Descriptive data on influence of experimental condition on self awareness skills among participants.**

Group	Gender	N	Pre-test		Post-test		MD
			Mean	SD	Mean	SD	
Explicit	Total	52	21.35	3.91	32.73	5.42	11.38
Instruction							
Reading	Total	51	20.65	4.13	31.04	4.89	10.39
strategies							
Control	Total	41	19.97	3.83	25.03	4.13	5.06

Evidence from table 7 shows that participants exposed to explicit instruction had the highest mean difference scores of 11.38 followed by those exposed to reading strategies with a mean difference score of 10.39 while those in the control group had the lowest mean difference score of 5.06. To determine whether significant difference exist in self-awareness skill, the analysis of covariance statistics was used. The result of the analysis is presented in Table 8.

**Table 8: Analysis of Covariance on Influence of experimental conditions on self-awareness skills among participants.**

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean of Squares	F-ratio
Main effect	1077.66	6	179.61	8.07
Covariate	32.99	1	32.99	1.48
Experimental Conditions	294.52	2	147.26	6.62*
Within Group	3070.09	140	21.92	
Total	4475.26	143		

Significant at 0.05 level of significance,  $df=2$  &  $140$ ; critical  $F= 3.06$ .

Table 8 shows that a calculated F-value of 6.62 resulted as the influence of experimental condition on self-awareness skill among participants. Thus the calculated F-value is significant since it is higher than the critical F-value of 3.06 given 2 & 140 degrees of freedom at 0.05 level of significance hence rejecting the null hypothesis.

Based on the significant F-value obtained, further analysis of data was done using Fisher's protected t-test, wherein a pair wise comparison of group means was done to determine which groups differ from the other in self-awareness skill and the trend of the difference. The result of the analysis is as presented in table 9.

**Table 9: Protected t-test on difference on influence of self-awareness skills across experimental groups.**

Groups	Explicit Instruction	Reading Strategy	Control
	n =52	n=51	n=41
Explicit Instruction	32.73	1.83	7.91*
Reading Strategy	1.69	31.04	6.12
Control	7.70	6.01	25.03

Table 9 shows that participants exposed to explicit instruction do not significantly differ in self-awareness skill than those exposed to reading strategy ( $t=1.83$ ;  $df=101$ ; critical  $t=2.00$ ;  $P<0.05$ ). However participants exposed to explicit instruction significantly had higher self-awareness skill than those in the control group ( $t=7.91$ ;  $df=91$ ; critical  $t=2.00$ ;  $P<0.05$ ). Similarly participants exposed to reading strategies significantly have higher self-awareness skills than those in the control group ( $t=6.12$ ;  $df=90$ ; critical  $t=2.00$ ;  $P<0.05$ ).

**Hypothesis three:** States that there is no significant difference in the post-test scores in planning skills among participants exposed to explicit instruction and reading strategies and the control group. The hypothesis was tested using analysis of covariance statistics. The result of the analysis is as presented in tables 10, 11 &

12

**Table 10: Descriptive statistics on influence of experimental condition on planning skill among participants.**

Group	Gender	N	Pre-test		Post-test		
			Mean	SD	Mean	SD	MD
Explicit Instruction	Total	52	11.23	2.32	16.77	3.51	5.54
Reading strategy	Total	51	10.82	2.80	16.31	4.46	5.49
Control	Total	41	10.05	2.73	13.01	2.23	2.96

Table 10, shows that participants exposed to explicit instruction had the highest mean difference of 5.54 followed by those exposed to reading strategy with a mean difference of 5.49 while the control had the lowest mean difference score of 2.96. To determine whether significant difference on planning skill exists, the analysis of covariance statistics was used. The result of the analysis is presented in Table11.

**Table 11: Analysis of Covariance on influence of experimental conditions on planning skill among participants.**

Sources of Variation	Sum of Squares	of Degrees of Freedom	Mean Squares	of F-ratio
Main effect	1190.12	6	198.35	15.81
Covariate	41.31	1	41.31	3.29
Experimental condition	818.78	2	409.39	32.63*
Within Group	1719.35	140	12.28	
Total	3769.56	143		

\*significant at 0.05; df=2 & 140; critical f=3.06.

Table 11 shows that a calculated F-value of 32.63 resulted as the influence of experimental condition on planning skill among participants. Thus calculated F-value is significant since it is higher than the critical F-value of 3.06 given 2 & 140 degrees of freedom at 0.05 level of significance, hence the null hypothesis is rejected.

Based on the significant F-value obtained, further analysis of data was done using Fisher's protected t-test wherein a pair wise comparison of group means was done to determine which groups differ from the other in planning skill and the trend of the difference. The result of the analysis is as presented in Table 12.

**Table 12: Fisher's protected t-test on difference in planning skills across experimental groups and control.**

Groups	Explicit instruction n=52	Reading Strategy n=51	Control n=41
Explicit Instruction	16.77	0.66	5.15*
Reading strategy	0.46	16.31	4.46*
Control	3.76	3.30	13.01

\*significant at 0.05.

Table 12 shows that participants exposed to explicit instruction do not significantly differ from those exposed to reading strategies ( $t=0.66$ ;  $df=102$ ; critical  $t= 2.00$ ;  $P>0.05$ ). However participants exposed to explicit instruction significantly had higher planning skills than those in the control group ( $t=5.15$ ;  $df=91$ ; critical  $t=2.00$ ;  $P<0.05$ ). Also those exposed to reading strategies significantly had higher planning skill than those in the control group ( $t=4.46$ ;  $df=90$ ; critical  $t=2.00$ ;  $P<0.05$ ).

**Hypothesis four:** states that there is no significant difference in the post-test scores of monitoring skills among participants exposed to explicit instruction and reading strategies and the control group. The hypothesis was tested using the analysis of covariance statistics, the result of the analysis is as presented in Tables 13, 14, & 15.

**Table 13: Descriptive data on influence of experimental condition on monitoring skills among participants.**

Group	Gender	N	Pre-test		Post-test		
			Mean	SD	Mean	SD	MD
Explicit Instruction	Total	52	10.75	1.91	16.62	2.15	5.87
Reading Strategy	Total	51	10.20	2.14	16.39	3.35	6.19
Control	Total	41	10.34	1.98	9.93	2.02	-0.41

Table 13 shows that participants exposed to reading strategy had the highest mean difference of 6.19 followed by those exposed to explicit instruction skills with a mean difference score of 5.87 while those in the control group had the lowest mean difference score of -0.41. To determine whether significant differences in monitoring skills exist, the analysis of covariance statistics was used. The result is as presented in Table 14.

**Table 14: Analysis of Covariance on Influence of experimental condition on monitoring skills among participants.**

Sources of Variation	Sum of Squares	Degrees of freedom	Mean of Squares	f-ratio
Main effect	1315.06	6	219.03	29.03
Covariate	0.14	1	0.14	0.02
Experimental conditions	1279.11	2	639.56	84.72*
Within Group	1034.35	140	7.38	
Total	3628.66	143		

\*Significant at 0.05; df= 2 & 140; critical f=3.06

Table 14 shows that a calculated F-value of 84.72 resulted as the influence of experimental condition on monitoring skills among participants. Thus calculated F-value is significant since it is higher than the critical F-value of 3.06 given 2 & 140 degrees of freedom at 0.05 level of significance, hence rejecting the null hypothesis. Based on the significant F-value obtained, further analysis of data was done using Fisher's protected t-test, wherein a pair wise comparison of group means was done to determine which group differs from the other in monitoring skill and the trend of the difference. The result of the analysis is as presented in Table 15.



**Table 15: Fisher's protected t-test on difference in monitoring skills across experimental and control groups.**

Group	Explicit Instruction n =52	Reading strategy n =51	Control n =41
Explicit Instruction	16.62	0.42	8.80*
Reading Strategy	0.23	16.39	11.35*
Control	6.69	6.46	9.93

\*significant at 0.05.

Table 15 shows that participants exposed to explicit instruction strategy do not significantly differ in monitoring skills than those exposed to reading strategy ( $t=0.42$ ;  $df=101$ ; critical  $t=2.00$ ;  $P>0.05$ ). However participants exposed to reading strategies significantly had higher monitoring skills than those in the control group ( $t=8.80$   $df=91$ ; critical  $t=2.00$ ;  $P<0.05$ ). Similarly participants exposed to explicit instruction significantly have higher monitoring skills than those in the control group ( $t=11.35$ ;  $df=90$ ; critical  $t=2.00$ ;  $P<0.05$ ).

**Hypothesis five:** states that there is no significant difference in the post-test scores in global reading strategies among participants exposed to explicit instruction and reading strategies and the control group. The hypothesis was tested using analysis of covariance statistics. The results of the analysis are as presented in Tables 16, 17 & 18.

**Table 16: Descriptive data on Influence of experimental conditions on global reading strategies among participants.**

Group	Gender	N	Pre-test		Post-test		MD
			Mean	SD	Mean	SD	
Explicit Instruction Strategy	Total	52	31.10	5.35	48.19	5.14	17.09
Reading Strategy	Total	51	26.39	7.40	44.86	6.23	18.47
Control	Total	41	28.22	4.17	29.31	4.62	1.09

Table 16 shows that participants exposed to reading strategies had the highest mean difference of 18.47 followed by those exposed to explicit instruction strategy with a mean difference score of 17.09 while those in the control group had the lowest mean deviation score of 1.09. To determine whether significant difference in global reading strategies exists, the analysis of covariance statistics was used. The result is as presented in Table 17.

**Table 17: Analysis of Covariance on Influence of experimental conditions on global reading strategies across groups.**

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean of Squares	F-ratio
Main effect	2416.64	6	402.77	36.67
Covariate	93.50	1	93.50	3.17
Experimental condition	641.64	2	320.82	10.89*
Within Group	4036.02	140	28.82	
Total	7187.80	143		

\*significant at 0.05; df=2 & 140; critical f=3.06

Table 17 shows that a calculated F-value of 10.89 resulted as the influence of experimental condition on global reading strategy among participants. Thus calculated F-value is significant since it is higher than the critical F-value of 3.06 given 2 & 140 degrees of freedom at 0.05 level of significance, hence rejecting the null hypothesis.

Based on the significant F-value obtained, further analysis of data was done using Fisher's protected t-test, wherein a pair wise comparison of group means was done to determine which groups differ from the other in global reading strategy and the trend of the difference. The result of the analysis is as presented in Table 18.

**Table 18: Fisher's protected t-test on difference in global reading strategies across experimental.**

	Explicit Instruction	Reading Strategy	Control
Group	n=52	n=51	n=41
Explicit Instruction	48.19	3.17*	16.76*
Reading strategy	3.33	44.86	13.64*
Control	18.61	15.28	29.58

\* significant at 0.05

Table 18 shows that participants exposed to explicit instruction strategy do not significantly differ in global reading strategies than those exposed to reading strategy ( $t=3.17$ ;  $df=101$ ; critical  $t=2.00$ ;  $P>0.05$ ). However participants exposed to reading strategies significantly had higher global reading strategies than those in the control group ( $t=13.64$ ;  $df=90$ ; critical  $t=2.00$ ;  $P<0.05$ ). Similarly participants exposed to explicit instruction strategies significantly have higher global reading strategies than those in the control group ( $t=16.76$ ;  $df=91$ ; critical  $t=2.00$ ;  $P<0.05$ ).

**Hypothesis six:** states that there is no significant difference in the post-test score in problem solving strategies among participants exposed to explicit instruction and reading strategies and the control group. The hypothesis was tested using analysis of covariance statistics. The result of the analysis is as presented in tables 19, 20 & 21.

**Table 19: Descriptive data influence of experimental conditions on problem solving strategies among participants.**

Group	Gender	N	Pre-test		Post-test		
			Mean	SD	Mean	SD	MD
Explicit	Total	52	14.02	4.16	24.06	4.08	10.04
Instruction strategy							
Reading	Total	51	11.86	3.80	25.31	4.82	13.45
strategy							
Control	Total	41	13.05	4.49	12.86	3.45	0.19

Table 19 shows that participants exposed to reading strategies had the highest mean difference of 13.45 followed by those exposed to explicit instruction strategy with a mean difference score of 10.04 while those in the control group had the lowest mean difference score of 0.19. To determine whether significant difference in problem solving reading strategies exists, the analysis of covariance statistics was used. The result is as presented in Table 20.

**Table 20: Analysis of Covariance on Influence of experimental conditions on problem solving strategies across participants.**

Sources of Variation	Sum of Squares	Degree of freedom	Mean Square	F-ratio
Main effect	4263.10	6	710.52	40.11
Covariate	26.69	1	26.69	1.51
Experimental conditions	3872.89	2	1936.44	109.32*
Within Group	2476.27	140	17.68	
Total	10638.95	143		

\*significant at 0.05; df= 2 & 140; critical f-value=3.06

Table 20 shows that a calculated F-value of 109.32 resulted as the influence of experimental condition on problem solving reading strategy among participants. Thus calculated F-value is significant since it is higher than the critical F-value of 3.06 given 2 & 140 degrees of freedom at 0.05 level of significance, hence rejecting the null hypothesis.

Based on the significant F-value obtained, further analysis of data was done using Fisher's protected t-test, wherein a pair wise comparison of group means was done to determine which group differs from the other in problem solving reading strategy and the trend of the difference. The result of the analysis is as presented in Table 21.

**Table 21: Fisher's protected t-test on difference in problem solving strategies across experimental groups.**

	Explicit Instruction	Reading strategies	Control
Group	N=52	N=51	N=41
Explicit Instruction	24.06	-1.51	12.87*
Reading Strategy	-1.25	25.31	14.15*
Control	11.20	12.45	12.86

\*significant at 0.05

Table 21 shows that participants exposed to explicit instruction strategy do not significantly differ in global reading strategies than those exposed to reading strategy ( $t=-1.51$ ;  $df=101$ ; critical  $t=2.00$ ;  $P>0.05$ ). However participants exposed to reading strategies significantly had higher problem solving reading strategies than those in the control group ( $t=14.15$ ;  $df=91$ ; critical  $t=2.00$ ;  $P<0.05$ ). Similarly participants exposed to explicit instruction strategies significantly have higher global reading strategies than those in the control group ( $t=12.87$ ;  $df=90$ ; critical  $t=2.00$ ;  $P<0.05$ ).

**Hypothesis seven:** states that there is no significant difference in the post-test scores of support reading strategies among participants in the experimental and control groups. This hypothesis is tested using the analysis of covariance statistics. The result of the analysis is as presented in Tables 22, 23 & 24

**Table 22: Descriptive statistics on influence of experimental conditions on support reading strategies among participants.**

Group	Gender	N	Pre-test		Post-test		
			Mean	SD	Mean	SD	MD
Explicit	Total	52	15.44	3.28	30.98	4.38	15.54
Instruction							
Reading	Total	51	15.16	3.62	31.24	4.11	16.08
Strategy							
Control	Total	41	14.56	3.52	13.71	3.47	-0.85

Table 22 shows that participants exposed to reading strategies had the highest mean difference of 16.08 followed by those exposed to explicit instruction strategy with a mean difference score of 15.54 while those in the control group had the lowest mean difference score of -0.85. To determine whether significant difference in support reading strategies exists, the analysis of covariance statistics was used. The result is as presented in Table 23.



**Table 23: Analysis of Covariance on Influence of experimental conditions on support reading strategies among participants.**

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F-ratio
Main effect	3239.78	6	539.96	33.79
Covariate	45.38	1	45.38	2.84
Experimental conditions	680.74	2	340.37	21.30*
Within Group	2188.96	140	15.63	
Total	6154.86	143		

\*significant at 0.05; df=2 & 140; critical f=3.06

Table 23 shows that a calculated F-value of 21.30 resulted as the influence of experimental condition on support reading strategy among participants. Thus calculated F-value is significant since it is higher than the critical F-value of 3.06 given 2 & 140 degrees of freedom at 0.05 level of significance, hence rejecting the null hypothesis.

Based on the significant f-value obtained, further analysis of data was done using Fisher's protected t-test, wherein a pair wise comparison of group means was done to determine which groups differ from the other in support reading strategy and the trend of the difference. The result of the analysis is as presented in Table 24.

**Table 24: Fisher's protected t-test on difference in support reading strategies across experimental groups.**

	Explicit Instruction	Reading Strategy	Control
Group	n=52	n=51	n=41
Explicit Instruction	30.98	-0.33	21.06*
Reading strategy	-0.26	31.24	21.12*
Control	17.27	17.53	13.71

\*significant at 0.05

Table 24 shows that participants exposed to explicit instruction strategy do not significantly differ in global reading strategies than those exposed to reading strategy ( $t=-0.33$ ;  $df=101$ ; critical  $t=2.00$ ;  $P>0.05$ ). However participants exposed to reading strategies significantly had higher support reading strategies than those in the control group ( $t=21.06$ ;  $df=90$ ; critical  $t=2.00$ ;  $P<0.05$ ). Similarly participants exposed to explicit instruction strategies significantly have higher global reading strategies than those in the control group ( $t=21.12$ ;  $df=91$ ; critical  $t=2.00$ ;  $P<0.05$ ).

## **4.2 Summary of findings**

1. The findings also show a higher level of improvement on performance in English Language of participants exposed to explicit instruction strategy and reading strategies than those in the control group.
2. The study also shows a significant difference in the self-awareness skill of participants exposed to explicit instruction and reading strategies and the control group.
3. Planning skill was significantly higher among participants exposed to explicit instruction strategy and reading strategies than those in the control group.
4. The findings of the study shows that participants exposed to the experimental condition exhibited higher level of monitoring skills than those in the control group. However those exposed to reading strategies exhibited the highest level of monitoring skills among the experimental groups.
5. The study shows that participants exposed to explicit instruction did not significantly differ from those exposed to reading strategies. However participants exposed to reading strategies displayed higher level of global strategies than those in the control group. Similarly, participants exposed to explicit instruction also displayed higher level of global strategies than those in the control group.
6. The findings show that participants exposed to reading strategies significantly displayed higher level of problem solving strategies than those exposed to explicit instruction and the control group. Similarly participants exposed to explicit instructions exhibited higher level of problem solving strategies than the control group.

7. The findings of the study show that support reading strategies of participants exposed to reading strategies and explicit instruction strategy was significantly higher than those in the control group.

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS, SUMMARY AND CONCLUSION, CONTRIBUTIONS TO KNOWLEDGE, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH**

#### **5.0 Introduction**

The study investigated the impact of intervention programmes on metacognitive skills and performance in English language. This chapter presents the discussion of the results of the statistical analyses presented in chapter four and offers plausible interpretations of the findings. The discussions of the findings may either affirm or negate some of the research findings earlier reviewed. The chapter also highlighted the contributions to knowledge, recommendations and suggestions for further studies.

#### **5.1 Discussion of findings**

**Hypothesis one** stated that there is no significant difference in the post-test scores of English language performance of participants exposed to explicit instruction and reading strategies and control group. The result of the analysis showed that participants exposed to explicit instruction had the highest mean difference (18.77), followed by those exposed to reading strategies (14.57), while the control group had the lowest (2.23). Further analysis was made to determine whether significant difference existed in the posttest score in metacognitive skills due to experimental

conditions. The result of the analysis showed a significant difference in the posttest scores, consequently the null hypothesis was rejected.

This finding supports those of other researchers who found that the effect of explicit instruction strategy and reading strategies on metacognitive skills improves students' performance in reading comprehension and English language in general (Cubukcu,2008; Phakiti,2003; Song 2004; Muniz-Swicegood,2002 Sperling, et al.2002).

The result aligns with the findings of Phakiti, (2003) in a study on the nature of cognitive strategies (comprehending, retrieval and memory strategies) and metacognitive strategies (monitoring, planning and evaluating strategies) and their direct and indirect relationships to English as EFL reading test performance, employing the Structural Equation Modelling (SEM) approach. The SEM results show that: (1) memory and retrieval strategies facilitated EFL reading test performance via comprehending strategies; (2) monitoring strategies performed an executive function on memory strategies, whereas evaluating strategies regulated retrieval strategies; (3) comprehending strategies were found to directly influence EFL reading test performance.

Song (2004) also affirmed the findings in a study on the use of explicit direct instruction on metacognitive skills. Song employed a revised strategy questionnaire mainly based on Purpura (1999). There was a significant prediction of students' performance as Song found that metacognitive skills accounted for 80.6% of the variance in test score.

It is also in line with the findings of Cubukcu (2008) who presented a study of the teacher trainees in an English department who have received instruction in

metacognitive skills awareness for reading comprehension. Within this study, students have been taught metacognitive strategies for reading in a five week program they have joined voluntarily. The purpose of the study was to determine the effectiveness of systematic direct instruction of multiple metacognitive skills designed to assist students in comprehending text. Specifically, the reading comprehension and vocabulary achievement of university students has been investigated to determine whether instruction incorporating metacognitive skills has led to an increase in the reading comprehension of expository texts. There was a significant increase in the reading performance of students exposed to metacognitive skills using systematic direct instruction.

Muniz-Swicegood, (2010) who analysed the performance of monolingual English-speaking children in reading performance and that of bilingual Spanish students. The research provided evidence that bilingual Spanish dominant students used fewer cognitive strategies than children who communicate through the use of only one communication system. The bilingual Spanish dominant students in this experimental study were taught to use metacognitive reading strategies while reading in Spanish. Primary findings indicated that, following training in metacognitive Spanish reading strategies, Spanish dominant bilingual children improved in the area of reading performance on the La Prueba Spanish reading test and the Iowa Test of Basic Skills English reading test. Post interview results of the Burke Reading Interview, translated into Spanish, showed increases in the frequency of Spanish reading strategies following metacognitive intervention.

The study contradicts that of Sperling et.al. (2002) that revealed in their study on the effect of metacognition on achievement and found that metacognition did not

necessarily improve achievement but inconsistency as metacognitive processes are separate from achievement.

The most probable reason for this outcome may not be far-fetched; explicit instruction strategy is a very comprehensive teaching programme of intervention that inculcates elements that positively impact on the academic performance of participants.

**Hypothesis two** stated that there is no significant difference in the posttest scores of self-awareness skills among participants in the experimental groups and the control group. The result showed that explicit instruction group had the highest mean difference (10.39), followed by those in the reading strategy group while the control group had the lowest score (5.06). Hence the null hypothesis was rejected. The post hoc analysis showed that participants exposed to explicit instruction strategy displayed higher self-awareness skills than those in the reading strategies group. Similarly those in the reading strategies group displayed higher self-awareness skills than those in the control group.

The result is in agreement with other researchers that found that the explicit instruction strategy and reading strategies are effective in improving self-awareness skills in metacognition (Critten & Pine, 2003; Dermitzaki, 2003).

The result agrees with that of Critten & Pine (2003) that explored the nature of children's metacognitive statements as they read and spell in order to see whether representational levels of understanding, provide a useful framework for exploring the nature of implicit to explicit reading and spelling development in young children. In the spelling recognition task children were asked to identify and explain those



alternatives they believed correct and incorrect. In the reading recognition task children were asked to identify and read the alternatives they believed to be real and pretend words and explain how they read those words. The result indicated that on the basis of children's explanations and performance they could be allocated to separate reading and spelling representational levels of understanding spanning Pre-implicit, Implicit and Explicit levels. Children's metacognitive awareness of how they read and spell can therefore provide insight into the nature of spelling and reading representations.

The result supports the findings of Dermitzaki (2003) that investigated self-regulatory behavior in different groups of students: Relations to performance and to academic self-concept. In the study, 25 third-grade low achievers in reading comprehension were compared to 20 high achievers as regards their use of self-regulatory strategies during their efforts to solve reading comprehension tasks. The results showed that: a. there were close relationships between students' use of self-regulatory strategies during problem-solving and subsequent performance, b. a different pattern of strategic behaviour emerged between high and low achievers in reading comprehension, and students' academic self-concept was significantly not related to the use of motivational regulatory strategies, such as persisting and working autonomously, but not to the use of cognitive and metacognitive strategies. The probable reason for the higher posttest result exhibited by those in the explicit instruction group, could be because the participants are still in their formative age and have a lot of room and potential for self-awareness development. Any exposure to any intervention programme like metacognition aimed at enhancing the self-

awareness skill component of their metacognitive skills will certainly have a significant effect.

**Hypothesis Three** stated that there is no significant difference in the posttest scores of planning skills among participants in the experimental groups and control group. The result showed that participants exposed to explicit instruction strategy had the highest mean difference (5.54), followed by those exposed to reading strategies while those in the control group had the lowest mean difference (2.96). Further analysis was done to determine whether significant difference exists in their planning skill due experimental conditions. The result shows that there is significant improvement in the planning skill of participants exposed to two intervention strategies respectively. Therefore the null hypothesis was rejected.

These findings support Zohar & Adi (2003); Wade, et. al (1990) findings that the use of explicit instructions strategy to impact metacognitive skills makes for better performance due to adequate planning and regulation. On the other hand the result contradicts that of James (1985) who admits that cognitive demands made by objective questions are minimal.

This result supports the findings of by Zohar & Adi (2003), who examined explicit teaching of meta-strategic knowledge in authentic classroom situations. Meta-strategic knowledge (MSK) is general, explicit knowledge about the cognitive procedures that are being manipulated. This study explores: (a) whether these effects are preserved in authentic classroom situations; and, (b) what is the process of change in students' thinking. Equal numbers of low-achieving and high achieving

students were randomly assigned into experimental and control groups. The findings showed dramatic developments in students' strategic and meta-strategic thinking following instruction. The effect of the treatment was preserved in transfer and retention tasks. Our findings show that explicit teaching of MSK had a stronger effect for low achieving students than for high achieving students.

This result supports some researchers who reveal that college students select and use reading strategies that are oriented toward success in academic tasks, Wade, et. al (1990). This type of task, involving extensive reading and subsequent recall, is typical of many college assignments. At eight separate points during reading, participants were asked to provide a retrospective report of their reading strategies. The authors identified 14 strategies from the data, which they called tactics. These were separated into three types, by consensus. One type was text-noting tactics, and included highlighting, underlining, circling, copying key words, phrases or sentences, paraphrasing in notes, outlining and diagramming. The second type was mental- learning tactics and included rote learning of specific information, mental integration, relating information to background knowledge, imaging, visualizing, self-questioning and self-testing. The third type was reading tactics, which included reading only, skimming, reading slowly, and re-reading selected text. These results reveal that reading strategies are directed toward comprehension, but also toward studying and remembering.

The result contradicts that of James (1985) who investigated the relationship between the teachers' questions and students' performance in reading comprehension in English in Nigeria. The result was that examiners used a variety of questions demanding the power of terminology from the students but that students

would do better and demonstrate higher order skills with essay questions than objectives. She concludes that academic type reading which obtains at the university level calls for proficiency in the higher order skills of critical thinking, judging, synthesizing and problem solving.

This outcome is not unexpected given that the study participants are still in their formative age of planning. Exposure to intervention programmes like metacognition has only helped to fast track the process.

**Hypothesis Four** stated that there is no significant difference in the posttest scores of monitoring skills among participants in the experimental groups and control group. The result of the analysis showed that participants exposed to explicit instruction had the highest mean difference (6.10), followed by those in the reading strategies group, while the control group had the lowest mean difference (0.41). Further analysis was done to determine whether significant difference exists in the monitoring skill of participants due to experimental conditions. The result of the analysis showed that the participants in the experimental groups had higher level of metacognitive monitoring skill due to the intervention strategies used. Further analysis was done using Fisher's protected t-test to determine the difference of each group from the other and the trend of difference. The result shows that those exposed to explicit instruction and reading strategies significantly improved in their metacognitive monitoring skills than those in the control group. Consequently the null hypothesis was rejected.

This finding supports that of other researchers who found that the use of explicit instruction and reading strategies enhance the metacognitive monitoring skills of students (Li Ciao & Nietfeld, 2002; Tobias & Everson, 2002) but at variance with the findings of Ehrlinger & Dunung (2003) who revealed that performance did not differ with the application of monitoring skills.

In a study by Ehrlinger & Dunning (2003), which contradicts the finding that monitoring skills enhances performance, they investigated using two groups of participants, that took the same test. Those who believed that the test measured abstract reasoning ability, one which they had rated themselves highly. They estimated they had achieved higher scores than those who thought they had taken a computer programming test. This was so despite the fact that the two groups did not differ in their actual performance.

The result supports the findings of Tobias & Everson (2002) in a study on knowledge monitoring accuracy and reading in a bilingual elementary school students examined the differences in knowledge monitoring accuracy between mono- and bilingual students, as well as the relationship between their metacognitive ability and reading comprehension in relatively young school children. They found that when bilingual students come upon an unfamiliar English word they often search for cognates in their native language. They also reported that bilingual students, when compared to their monolingual peers, monitored their comprehension more actively by asking questions when they faced difficulties or by rereading the text. This suggests that bilingual children attempting to comprehend text presented in English are likely to be more accurate knowledge monitors than their monolingual peers.

Also the findings of Li Cao & Nietfeld (2002) who examined the judgment of learning, monitoring accuracy, and student performance in the classroom context, found that weekly monitoring exercises were used to improve college students' accuracy of judgment of learning over a 14-week educational psychology course. Performance outcomes were the strongest predictor of a formative estimate of monitoring accuracy, while self-efficacy predicted an overall summative estimate of monitoring accuracy. In addition, overall course test performance was predicted by background knowledge and self-efficacy.

The outcome of this result suggests that the intervention strategies helped the students to refocus, monitor their strategies and also find out which strategies are effective.

**Hypothesis Five** stated that there is no significant difference in the posttest scores of global strategies among participants in the experimental and control groups. The result of the descriptive analysis showed that participants exposed to reading strategies had the highest mean difference (18.47) followed by those in the explicit instruction strategy while those in the control group had the lowest mean difference (1.09). Further analysis was done to determine whether significant difference exists in the use of global strategies among participants due to experimental conditions. The result of the analysis showed that the participants in the experimental groups had higher level of global reading strategies due to the intervention strategies than the control group. Hence the null hypothesis was rejected.

This finding suggests that readers' background knowledge significantly facilitates comprehension and the quantity and quality of recall which supports that of other

researchers (Ajideh,2003; Recht & Leslie, 1998; Bos &Vaughan (1994) in Rothsmith, 1998).

Report by Ajideh (2003) in a study on Schema theory based pre-reading task: a neglected essential in the reading class, supports the finding that readers background knowledge facilitates comprehension with a special focus on schema-theory –based pre-reading activities. The result revealed that pre-reading activities rely mostly on clarifying the meaning of difficult words or complex structures.

The finding agrees with Recht and Leslie (1998) in their study that looked at the impact of prior knowledge on reading performance. Their findings suggest that reader's background knowledge significantly facilitates comprehension and the quantity and quality of recall. Their research indicates that having superiority ability in reading is not as valuable as prior knowledge of the topic.

Bos and Vaughan (1994) cited in Rothsmith (1998) suggest ways in which background knowledge can be activated before a student reads a text: brainstorming, pre-reading plan and schema activation. Brainstorming may be conducted orally or in writing. Oral forms invite students to contribute what they recall of topics, facts and concepts to form group catalogues of ideas. Following oral brainstorm, the ideas may then be placed into a graphic organizer, for example a word, or a map or a semantic web which sort and label associated ideas informs radiating from a central topic.

The significant difference in the level of their use of global strategies due to experimental conditions may be due to the instructions given to them to focus on their prior knowledge when given a text to read.

**Hypothesis Six** stated that there is no significant difference in the posttest scores of problem solving strategies among participants in the experimental and control groups. The result of the analysis shows that participants exposed to the reading strategies instruction had the highest mean difference (13.45), followed by those exposed to the explicit instruction strategy, while the control group had the lowest mean difference (0.19). Further analysis to determine whether significant difference exists due to the experimental condition showed that there was a significant difference in the posttest scores due to the experimental conditions. Consequently the null hypothesis was rejected.

Fishers' protected t-test was used to determine which group differ from the other on problem solving strategies use and the trend of difference. The pair-wise comparison carried out showed participants exposed to the reading strategies exhibited higher problem solving skills, followed by participants exposed to explicit instruction then the control group.

This finding is in support of other researchers that what matters is the knowledge of when, how and why a strategy is to be used and not what strategies learners use. This strategy may slow down reading speed but helps to increase reading achievement Phakiti, (2003); Manzo & Manzo (2004); Kusumi, (2010).

Phakiti (2003) supports this finding in the study where he compared the differences in the strategy use and reading performance among highly successful, moderately successful and unsuccessful learners by means of factorial multivariate analysis of variance (MANOVA) and found the significant differences among these learner groups. There was strong evidence that the highly successful learners reported



significantly higher use of metacognitive strategies than the moderately successful ones, who in turn reported higher use of these strategies than the unsuccessful ones. The qualitative data analysis further supported such findings, suggesting that the successful learners approached the test tasks more strategically than the less successful ones.

The study also agree with Manzo & Manzo, (2004) in their study on strategy use and reading performance and the use of phonics approach was applied when highlighting the strategy to decode a particular word in context. The result revealed that when introducing a student to an unfamiliar section of the text, emphasis was given to word attack skills which involve breaking words into syllables or using the structural analysis of a difficult word.

Kusumi, (2010) also agreed with the finding in his study which investigated into the Metacognitive reading processes of Sri Lankan students with respect to three reading proficiency levels: low, intermediate and high. With the use of a reading comprehension test, students were grouped into three proficiency levels and their metacognitive awareness of reading processes were assessed using Mokhtari & Reichard's MARSI. A positive relationship was found between Sri Lankan students' in all three proficiency levels reported using problem solving strategies most frequently followed by global and support strategies with higher use of strategies by higher level students.

The significant difference in the outcome of this could be that the students were explicitly taught about the use of structural analysis and breaking words into contexts while finding the meaning of difficult words.

**Hypothesis Seven** stated that there is no significant difference in the posttest scores of support reading strategy among participants in the experimental and control groups. The result of the descriptive analysis showed that participants exposed to reading strategies had the highest mean difference of 16.08, followed by those exposed to explicit instruction strategy (15.54), while the control group had the lowest mean difference of 0.85. Further analysis showed there was a significant difference in the posttest scores due to the influence of the experimental conditions. This led to the rejection of the null hypothesis. The probable reason for this outcome due to the experimental conditions is the participants were encouraged to make use of reading aids such as dictionaries while reading.

Further analysis using the Fisher's protected t-test to determine which group differs from the other and the trend of difference was done. The result of the pair wise comparison of the groups showed that participants exposed to reading strategies did not significantly differ in the use of support reading strategies from those exposed to explicit instruction strategy but both experimental groups differ significantly from the control group.

This buttressed the findings of other researchers that taking notes while reading, paraphrasing text information, revising previously read information, asking self-questions, using reference materials as aids, underlining text information, discussing reading with others, and writing summaries, all these help to improve comprehension of a text (Bang & Zhao, (2007); Jimenez,1996).

Bang & Zhao, (2007) supported the finding in his study which examined the reading strategies used by advanced Korean and Chinese ESL learners when reading academic texts. The results showed that Korean readers demonstrated reliance in

dictionaries, habit of translation and use of personal background knowledge in attempts to comprehend academic texts all of which identified as characteristics of skilled readers. Contrastingly the Chinese counterparts preferred using contextual clues, discussion with colleagues and support of peers/teachers as ways of achieving comprehension of academic texts, all of which has been recognized as habits of more skilled readers.

Report by Jimenez et. al (1996) also buttressed the finding in his study which investigated the reading strategies used by bilingual latino students who were successful English readers. The study reported on the global level, the successful latino ESL readers invoked prior knowledge about a topic, made predictions, confirmed or disconfirmed their beliefs or used text structures to organize ideas. On the local level, the readers based on linguistic context by looking for cognates and by using their knowledge of other similar words in English. The readers broke down the structure of sentences and tried to identify phrases or chunks that were familiar and comprehensible. The study of Wong et. al (2004 cited in Vianty, 2007) with ESL students reported that high level and low level readers did not use metacognitive strategies differently although they differed in terms of awareness and knowledge of cognition.

## **5.2 Summary and Conclusion**

The study was on Instruction and Reading Strategies on metacognitive skills and performance among senior secondary school students in Anambra State. It was carried out to determine the effectiveness of direct explicit instruction and reading strategies in developing metacognitive skills and enhancing performance in English language among senior secondary school students.

Two hundred and Forty-nine students were assessed for the study. A total of 144 students who were identified as having low level of metacognitive skills and performance in English language were used. The data for the study were obtained using three instruments. Seven research hypotheses were analysed using ANCOVA and descriptive statistics. All the hypotheses were tested at 0.05 level of significance. Results from the analysis of data indicated that the seven null hypotheses tested were rejected. The study revealed that direct explicit instruction and reading strategies were efficacious in developing and enhancing metacognitive skills and in turn affects the performance in English language. Further evidence revealed that direct explicit instruction was more effective in improving metacognitive skills and learning of English language. It is also apparent from the study that self- awareness skills, planning skills and monitoring skills were high among participants exposed to explicit instruction.

## **Conclusion**

On the basis of the findings from this study the following conclusions are made:

1. The explicit instruction and reading strategies were quite effectual in developing metacognitive skills in learners.
2. Metacognitive skills enhanced the skills and ability of learners in reading and improved their performance in English Language.
3. Self awareness skills helped learners to take conscious control of learning and select strategies for learning.
4. Monitoring and planning skills were also quite effective in monitoring the progress of learning analyzing effective strategies and changing them where necessary.
5. The global strategy of reading strategies enhanced the activation of prior knowledge and setting purposed for reading by the learner.
6. Problem-solving strategy helped learners to read slowly and carefully and also visualize information being read.
7. The Support reading strategy also improved the learners ability to underline text information, discuss reading with others and use reference materials as aids while reading.

## **5.3 Contributions to Knowledge**

1. The study has provided guidelines for the use of explicit instruction and reading strategies in improving the metacognitive skills and the academic

performance of students in English language which were quite low at the commencement of the intervention programme.

2. The study also established that learners, through the use of metacognitive skills (self-awareness, monitoring and planning) were able to interpret text and extract meaning from text as they read, by applying effective and appropriate strategies through instruction.
3. The study demonstrated that learners can be taught metacognitive skills: self-awareness, monitoring and planning) in an educational based model, which may be included into our school curriculum with the intent of improving academic performance in English language.
4. The study has helped to equip learners with reading strategies (global, support and problem-solving) that are applicable to texts and tasks in more than one content area so that these strategies can be applied in a variety of reading situations to improve academic and career success of students.
5. The study has exposed learners to conscious self-control and self-regulation of cognition so that they can monitor themselves when they perform cognitive tasks and also have knowledge of themselves as learners through the use of planning, monitoring, and self-awareness skills.

6. The adaptation of the research instruments – State Metacognitive Inventory (SMI) and Metacognitive Awareness Reading Skills Inventory (MARSI) for use in Nigeria addresses the problem of dearth of standardized cognitive measures for use by researchers in measurement of metacognitive skills in Nigeria.

## **5.4 Recommendations**

Based on the findings of the study, the following recommendations are made:

1. Direct explicit Instruction and reading strategies were found to be very efficacious in enhancing the level of metacognitive skills and performance in English language. These programmes should be adopted to assist students in coping with learning in English language.
2. Since self-awareness skill of participants exposed to intervention programme were improved, instructional curriculum should incorporate metacognitive skills with the objective to enhance reading and comprehension skills of students.
3. Results of this study on metacognitive skills shows that planning skills of participants exposed intervention conditions improved, it provides the basis for a conceptual shift in learning English language in the classroom.
4. Managers of education at secondary education level should consider monitoring skills as a factor in predicting student's success in English language and hence the need to assess this dimension.
5. The ministry of Education should organize train-the-trainers workshop for teachers in English language to equip them with reading strategies which will be incorporated into their instructional guide for teaching.

6. Educators at the secondary level should develop appropriate intervention programme that will facilitate effective and seamless understanding of reading and comprehension in English language among students in the classroom.

### **5.5 Suggestion for further studies.**

The following suggestions are made as a result of the findings emanating from this study.

1. The present research which focused on the strategies on metacognitive skills and performances in English language among senior secondary school students in Anambra State, it could be replicated in other states of the Nigerian Federation.
2. Research could investigate the effect of other intervention strategies relative to the two intervention strategies employed in enhancing metacognitive skills and performance in English language in this study.
3. Practical research at the primary school level should be carried out to define the impact of intervention programmes similar one used in this study.



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## Appendix 1

### ENGLISH LANGUAGE

**School name:**..... **Student name** .....

**Date:** .....

#### SECTION A

#### COMPREHENSION

YOU ARE ADVISED TO SPEND ABOUT 30 MINUTES ON THIS SECTION

***Read the passage below carefully and answer the questions on it.***

Mention 'tourism' to many a Nigerian before June, 1999 and the responses that greeted you was that of indifference. However, all that seems to be gradually giving way to enthusiastic feelings since the creation of a ministry to *harness* the nation's abundant tourism potentials. So from Yankari, New Bussa and Mambilla Plateau to Obudu, and Ikogosi, life appears to be glowing anew.

These hitherto under-utilized tourist attractions had in the past years suffered low patronage. But democracy and liberalization seem to be attracting a few Nigerians who already understand the meaning of tourism. Those who are yet to fully discover the recreational and commercial opportunities in tourism are beginning to explore new means of achieving fulfillment through this sector.

Already, things are beginning to take shape in these tourist attractions. Their boards and management are currently being streamlined to meet the changing needs of the sector. Although, many of the tourist centres predate the nation's independence, the Nigerian mentality of over-dependence on oil has not allowed the government and

its citizens to have a clear view of the *boundless* gift of nature, this disposition sharply contrasts with what obtains in some east and central African countries which economies largely depend on tourism.

Over the years, policy makers have shut their eyes to the economic potentials of this sector of the economy. And with the military in the saddle, it became very difficult to initiate and implement tourism policies for the benefit of the entire country. While those who advised past governments were too cowardly to tell them the truth, the citizenry primarily concerned with surviving the oppressive regimes, considered tourism and recreation luxuries they could least afford. The tourism centres suffered immense neglect therefore. Facilities laid to waste and staff were disillusioned. Now things are looking up at the centres.

But tourist attractions alone do not attract tourists, it takes the combination of tourism-friendly facilities like good roads, reliable infrastructure, and security among others to guarantee an *appreciable* influx of visitors, sometimes too, a country's disposition also matters a great deal.

This is the view of Andrew Ugboke, a Nigerian tourism practitioner resident in Cote D'ivoire. He agrees completely that a conducive atmosphere *enhances* a country's tourism potentials. According to him, this accounts for the influx of visitors to Francophone West African countries. In his view, against the current political background, this *disposition* is about the most important factor Nigerians need now to turn the tourism sub-sector around.

***Answer the following questions from the passage.***

- a. State two reasons why many Nigerians are indifferent to tourism.
- b. What step is being taken to turn tourism around in Nigeria?

- c. Before June 1999, why did tourism not develop as expected?
- d. Mention two additional steps that should be taken to attract tourists.
- e. Explain briefly in your own words what is meant by

*i. In the middle*

*ii. Are looking up*

- f. ...*luxuries they could least afford*. What grammatical name is given to the expression above? What is its function?
- g. Find a word or phrase that means the same, which can replace each of the following words as used in the passage.

*i. Harness*

*ii. Meaning*

*iii. Boundless*

*iv. Appreciable*

*v. Enhances*

*vi. disposition*

## SECTION B

**Complete each of the following questions with the most appropriate of the options lettered A-E. (Nos.1-10).**

1. Unarguably, lying is against an honest and upright man's ..... (a) attitude (b) ideals (c) intentions (d) principals (e) principles.
2. Ever since I was betrayed by my own sibling, I stopped trusting anyone as a ..... (a) colleague (b) confidant (c) friend (d) pal (e) peer.
3. The orator's speech was full of ..... To history. (a) allusions (b) digressions (c) distractions (d) diversions (e) illusions.
4. Though very skilful and strong, the wrestler was let down by his ..... as he could last just seven of the twelve rounds. (a) agility (b) persistent (c) stamina (d) tolerance (e) vigour.
5. The president demanded that all public office holders should be ..... And accountable. (a) transferable (b) translucent (c) transparent (d) transitional (e) transitory.
6. A ..... and easy going person like any neighbor should be admired if not emulated. (a) crafty (b) cunning (c) quiet (d) quit (e) quite.
7. The CD player was playing so ..... that the whole neighbourhood could hear the music clearly. (a) aloud (b) loud (c) loudly (d) noisily (e) well.
8. The animal moved ..... to catch the prey. (a) confidently (b) dangerously (c) quickly (d) smoothly (e) translated.
9. The linguist is of the view that the constitution should be ..... Into many local languages. (a) interpreted (b) transformed (c) transmitted (d) transposed (e) translated.
10. The new boss said he would ..... no act of indiscipline from his staff. (a) commune (b) condole (c) condone (d) consider (e) console.

***Choose from the options lettered 1-5, the one that is the most appropriate interpretation for each of the following statements.***

1. Our neighbor is always on the move. This means he is ..... (a) fugitive (b) a traveler (c) always on visitors (d) is hardly at home (e) is restless.
2. The bereaved man realized that the situation was not quite as bad as he had thought when all was said and done. This means when (a) everything was considered (b) he heard about other people's greater misfortune (c) he resigned himself to fate (d) he tried unsuccessfully to reverse the situation (e) sympathizers talked to him.
3. The inefficient officer's double promotion came as a bolt from the blue. This means it came as (a) a big relief (b) a big surprise (c) a welcome development (d) an incentive (e) an unfortunate trend.
4. The actress eventually came out of herself to put up a brilliant performance. This means she (a) cooperated with her colleagues (b) mastered and performed her parts well (c) obeyed instructions from her director (d) relaxed and became more confident (e) was applauded by the audience.
5. It goes without saying that not all school prefects are efficient. This means that some prefects are inefficient. (a) observed (b) obvious (c) reported (d) true (e) unfortunate.

## SECTION C

In air travel, - 1 – are the most important persons of all; their -2 – matter most. The issue of their safety can be achieved in many ways including the use of good – 3- . this entails good – 4 -, for example. The length must be safe and the – 5 – conditions good, its bird – 6 – must be superb; the runway must be free from dilapidations no undulations etc. A good or safe airport is one equipped with up-to-date and functional – 7- aids such as instrument -8 – system, very high frequency Omni directional range, non-directional beacon etc. The air -9 – control system should have state of the art VHF navigation communications and radar -10 – to enable it handle the ever increasing traffic -11 -. Effective control remains vital for overall safety of aircraft -12 – in and out of such airport. These aircrafts keep coming in different sizes, large and small. In other words, a good airport is one with capability to handle heavy traffic -13 – safety as often demonstrated by qualified -14 – who by their level of training can show in handling modern -15 -.

***Choose the appropriate answers from below to fill up section c***

Nos.	A	B	C	D	E
1	Commuters	drivers	Data recorders	Manufacturers	Passengers
2	Comfort	quantity	Reliability	Safety	Status
3	Air drivers	Air port	Air parks	Land ports	Seaports
4	Road	runway	Rail	Track	Weather
5	Aesthetic	mechanical	metaphysical	Meteorological	Monetary
6	Colour	level	management	Nature	Size
7	instructional	institutional	manufacturing	Navigational	Operational



8	Crashing	halting	Landing	Parking	Stopping
9	Commercial	motor	professional	Ship	Traffic
10	Coverage	divers	Location	managers	Power
11	Data	engine	Men	Type	Volume
12	Flying	moving	Navigating	Sailing	Terrorizing
13	Crash	congestion	Flow	Scenario	Wreckage
14	Controllers	directors	manufacturers	managers	Recorder
15	Engine	equipment	Record	Terrain	Traffic

## Appendix 2

### STATE METACOGNITIVE SKILLS INVENTORY.

School name: \_\_\_\_\_ Student name: \_\_\_\_\_

Date: \_\_\_\_\_

**Directions:** Listed below are statements about what people do when they read academic or schoolrelated materials such as textbooks or library books.

Five numbers follow each statement (1, 2, 3, 4, 5), and each number means the following:

- **1** means "I **never or almost never** do this."
- **2** means "I do this **only occasionally**."
- **3** means "I **sometimes** do this" (50% of the time).
- **4** means "I **usually** do this."
- **5** means "I **always or almost always** do this."

After reading each statement, circle the number (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are no right or wrong answers to the statements in this inventory.

S/N	SELF AWARENESS					
1	I was aware of my own thinking.	1	2	3	4	5
2	I was aware of which thinking technique to use and when to use it.	1	2	3	4	5
3	I am aware of which strategy to use and when to use it	1	2	3	4	5
4	I am aware of the need to plan my course of action.	1	2	3	4	5
5	I am aware of my ongoing thinking processes.	1	2	3	4	5
6	I am aware of my trying to understand the text questions before I attempt to solve them.	1	2	3	4	5
	<b>MONITORING</b>					
7	I attempt to discover the main ideas in the text questions.	1	2	3	4	5
8	I ask myself how the test questions relate to what I already know	1	2	3	4	5
9	I think through the meaning of the text questions before I begin to answer them.	1	2	3	4	5
10	I use multiple thinking techniques or strategies to solve the text questions.	1	2	3	4	5
11	I select and organize relevant information to solve the text questions.	1	2	3	4	5

	<b>PLANNING</b>					
12	I try to understand the goals of the text questions before I attempt to answer.	1	2	3	4	5
13	I try to determine what the text requires.	1	2	3	4	5
14	I make sure I understand just what has to be done and how to do it	1	2	3	4	5
15	I determine how to solve the text questions.	1	2	3	4	5
16	I try to understand the text questions before I attempt to solve them.	1	2	3	4	5

	<b>CONTROL</b>					
17	I check my work while I am doing it.	1	2	3	4	5
18	I correct my errors.	1	2	3	4	5
19	I almost always know how much of the test I had left to complete.	1	2	3	4	5
20	I keep track of my progress and, if necessary, I change my techniques or strategies.	1	2	3	4	5

## Appendix 3

### METACOGNITIVE AWARENESS OF READING STRATEGIES INVENTORY

School name: \_\_\_\_\_ Student name: \_\_\_\_\_

Date: \_\_\_\_\_

**Directions:** Listed below are statements about what people do when they read academic or school related materials such as textbooks or library books. Five numbers follow each statement (1, 2, 3, 4, 5), and each number means the following:

- **1** means "I **never or almost never** do this."
- **2** means "I do this **only occasionally**."
- **3** means "I **sometimes** do this" (50% of the time).
- **4** means "I **usually** do this."
- **5** means "I **always or almost always** do this."

After reading each statement, circle the number (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are no right or wrong answers to the statements in this inventory

S/N						
	<b>GLOBAL READING STRATEGIES</b>					
1	I have a purpose in mind when I read.	1	2	3	4	5
2	I think about what I know to help me understand what I read.	1	2	3	4	5
3	I preview the text to see what it's about before reading it.	1	2	3	4	5
4	I think about whether the content of the text fits my reading purpose.	1	2	3	4	5
5	I skim the text first by noting characteristics like length and organization.	1	2	3	4	5
6	I decide what to read closely and what to ignore.	1	2	3	4	5
7	I use tables, figures, and pictures in the text to increase my understanding.	1	2	3	4	5
8	I use context clues to help me better understand what I'm reading.	1	2	3	4	5

9	I use typographical aids like boldface and italics to identify key information.	1	2	3	4	5
10	I critically analyze the information presented in the text.	1	2	3	4	5
11	I critically evaluate the information presented in the text.	1	2	3	4	5
12	I check my understanding when I come across conflicting information.	1	2	3	4	5
13	I try to guess what the material is about when I read.	1	2	3	4	5
14	I check to see whether my guesses about the text are right or wrong.	1	2	3	4	5
	<b>SUPPORT-READING STRATEGIES</b>					
15	I take notes while reading to help me understand what I read.	1	2	3	4	5
16	When text becomes difficult, I read aloud to help me understand what I read.	1	2	3	4	5
17	I summarize what I read to reflect on important information in the text.	1	2	3	4	5
18	I discuss what I read with others to check my understanding.	1	2	3	4	5
19	I underline or circle information in the text to help me remember it.	1	2	3	4	5
20	I use reference material such as a dictionary to help me understand what I read.	1	2	3	4	5
21	I paraphrase (restate ideas in my own words) to better understand what I read.	1	2	3	4	5
22	I go back and forth in the text to find relationships among ideas in it.	1	2	3	4	5
23	I ask myself questions I like to have answered in the text.	1	2	3	4	5
	<b>PROBLEM-SOLVING STRATEGIES</b>					
24	I read slowly but carefully to be sure I understand what I'm reading.	1	2	3	4	5
25	I try to get back on track when I lose concentration.	1	2	3	4	5

26	I underline or circle information in the text to help me remember it.	1	2	3	4	5
27	I stop from time to time and think about what I'm reading.	1	2	3	4	5
28	I try to picture or visualize information to help me remember what I read.	1	2	3	4	5
29	When the text becomes difficult, I reread to increase my understanding.	1	2	3	4	5
30	I try to guess the meaning of unknown words or phrases.	1	2	3	4	5

Responses to this data collection will be used only for statistical purposes. The reports prepared for this study will summarize findings across the sample and will not associate responses with a specific zone or individual. We will not provide information that identifies you or your zone to anyone outside the study team, except as required by law.

## Appendix 4

### Intervention 1; Explicit Instruction Strategy Guide

Sessions	Skill	Objectives	Activities
		At the end of each session the students should be able to:	
Preparation	Self-Awareness	Identify already known strategy. Develop metacognitive awareness of the relationship between their own mental processes and effective learning.	Preview text & information, search out information relevant to reading goal, relate information to background knowledge.
Presentation	Planning	Know the usefulness, and application of strategies.	Retrospect of the last lesson, reading of text, making notes & underlining of words while reading. Applying strategies- context clues, word analysis, guessing meaning, rereading.
Practice	Monitoring	Analyze the effectiveness of	Guided and individual practice using strategies; word analysis,

		strategies and context clues, rereading, using monitor the progress reading aids-dictionary, ask of learning. self questions.
Expansion	Monitoring, planning & self awareness skills	Evaluate their success in reading texts through guided development of and individual practice, metacognitive discussions writing summaries. awareness of their learning processes
Evaluation	Self awareness, planning & monitoring	Use effective strategies, apply new text, using background information, revision, and devise their own questions/discussions, combination of exchange exercise and mark. strategies.



## Appendix 5

### Intervention 2; Reading strategies Guide

Sessions	Strategy	Objectives	Activities
		At the end of each session the students should be able to:	
Previewing	Global	Build a knowledge base necessary for dealing with content and structure of a text.	Read head notes, skimming to get overview, checking content and activating prior knowledge.
Contextualizing	Global	Read through a given text using their prior knowledge to focus attention.	Setting purpose for reading, predicting what the text is about, relating content with prior knowledge.
Questions to understand and remember	Support	Comprehend and retain information and apply to new contexts.	Making notes, using reading aids e.g dictionaries, asking questions and answering.
Reflecting on challenges to your solving	Problem	Examine their personal responses	Reading slowly, rereading, visualizing

beliefs and values

information read.

Outlining	and	Global,	Identify main ideas	Underlining, outlining,
summarizing		support &	and restate them in	annotating and
		problem	their own words	summarizing main
		solving		ideas.

**DEPARTMENT OF EDUCATIONAL FOUNDATIONS**  
**(WITH EDUCATIONAL PSYCHOLOGY)**  
**FACULTY OF EDUCATION**  
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24<sup>th</sup> January, 2011.

**TO WHOM IT MAY CONCERN**  
**LETTER OF INTRODUCTION**

This is to confirm that **ELUEMUNO, AZUKAEGO IFEOMA** with Matriculation No. **069034037** is a Ph. D student of Educational Psychology. She is conducting a research on her project " **EFFECTS OF METACOGNITIVE SKILLS AND READING STRATEGIES ON THE PERFORMANCE IN ENGLISH LANGUAGE AMONG SENIOR SECONDARY STUDENTS IN ANAMBRA STATE**".

It shall be greatly appreciated if you could give him the necessary assistance based on the information above.

Thank you.

A handwritten signature in blue ink, appearing to be "AmO", written over a horizontal line.

Prof. (Mrs.) A.M. Olusakin

