

## Application of Comprehension Monitoring Strategy for Achievement and Interest of Low- Achievers in Reading Comprehension

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### Abstract

The study investigated the comprehension monitoring strategy for enhancing achievement and interest of low achieving senior secondary class two students in reading comprehension in Enugu State Nigeria. Two research questions and two null hypotheses guided the study. The design of the study was a quasi-experimental non-randomized pretest-posttest control group design involving one experimental group and one control group. The sample consists of 127 low achieving senior secondary school class two students from two schools in Uzo-uwani LGA in Nsukka education zone of Enugu State. Two instruments used for the study were a researcher-constructed "Test of Comprehension (TOC) in two forms– I and II and a Reading Comprehension Interest Scale (RCIS). The instruments were validated by experts and used for data collection. Mean and standard deviation were used to answer the research questions while analysis of covariance was used to test the hypotheses. Major findings of the study reveal that exposing low-achieving students to skills in comprehension monitoring strategy has facilitates reading comprehension achievement and interest. Based on these findings, conclusions were drawn and it was recommended among others that teachers should make effort to expose the low-achieving students to well planned learning strategy instruction by explaining and demonstrating the learning strategies that can enable students to read, understand and also solve other academic problems.

Keywords: Comprehension, Interest, Low-achievers and Achievement.

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## 1. Introduction

The ability to read and comprehend is very crucial in the life of every learner. It helps to ensure a successful academic achievement. Reading has been explained as a complex cognitive process of identifying and decoding symbols. Comprehension is the understanding and interpretation of what is read. Without comprehension reading would be empty and meaningless (Cornelissen, Kringelbach, Ellis, Whitney, Holiday & Hansen, 2009).

Reading comprehension has an ultimate target of helping a reader understand text. Reading comprehension is defined as the level of understanding of a text. It is a process of understanding, decoding the writer's words and then using background knowledge to construct an approximate understanding of the writer's message. Reading comprehension is the process of encoding and processing information by relating information to the prior stored experiences or ideas. It is an effort to understand a text being read (Block & Pressley, 2001). The need to read permeates all the school subjects in the arts, sciences and social sciences. In the context of this study, reading comprehension is the process of constructing meaning more effectively and efficiently from text and helping a reader identify and understand text. Students who have trouble learning to decode and recognize words often have difficulty with reading comprehension (Reading Study Group, 2002).

For low-achieving students, therefore, reading for comprehension is not just for pleasure, but to gain the ability to understand information for proper adjustment in the environment (Onuigbo, 2008). Students who struggle with decoding rarely have a chance to interact with more difficult text and often tend to dislike reading. As a result, these students do not have sufficient opportunities to develop the language skills and strategies necessary for becoming proficient readers and sometimes they are labeled low-achieving students (Klingner & Vaughn, 1999).

Low-achieving students are those students whose achievement are consistently below average grade level, and who may have numerous aversions associated with learning (Montague, 1998). Nye (2002) described low-achieving students as those students who consistently achieve below an expected level of performance. Low achieving students need to be helped to break the cycle of failure. Assisting these students is a requisite for improved academic performance (Moore, Bean, Birdyshaw, & Rycik, 1999). Low achievement could be influenced not only by genetic factors but could be due to carelessness of the students; peer group influence; other environmental factors such as poor teaching methods or strategies and relationship with teachers and parents (Obioma & Ohuche, 1985).

A large part of low achievement among students in schools could result from behaviour pattern that learners develop through consistent failure. It is not surprising, therefore, that some students especially those who have experienced a continuing history of failure, lack confidence in their ability to succeed. Low-achieving students often fail probably, because they set lower academic goals, lack persistence, engage in maladaptive academic behaviours and do not invest their best effort. Deborah & Benedict (2008) suggested that they could do better if well guided and assisted. Low-achieving students, therefore, need assistance in regaining self-confidence in their academic abilities and in developing strategies for coping with failure and persisting with problem solving effort when they experience difficulties. Katims (1997) reports that low-achieving students usually manifest inability to read, understand, and answer questions correctly. In that case, Katims further explained that students who have wrong understanding usually provide wrong answers. Khayyer (1986) pointed out that many students come into the classroom without the requisite knowledge, skills, and dispositions to read the materials placed before them competently. Many of their teachers also lack appropriate knowledge and skills, and are not resilient enough to motivate and encourage these students in order to break the cycle of failure. In this study, low-achieving students are those students who have consistently failed below average grade level of 50%. They can neither read properly nor demonstrate satisfactory understanding of texts appropriate for their grade level.

Reports of students' massive failure from West African Examinations Council (WAEC), National Examinations Council (NECO) external examiners is a pointer to the fact that there is possibly a vast number of low- achieving students in Nigerian secondary schools. This has been a source of worry to parents, teachers, and curriculum experts, as well as local, state and federal governments. The dwindling fortunes of the nation's education sector as reflected by the increasing evidence of low

achievers in Nigerian schools in most external examinations set by WAEC started as far back as 1977 when there was a report on a case of examination mass failure (Ayo, 2010).

Reports by WAEC and NECO Chief Examiners (2011) revealed low achieving students in many subjects such as: English language, Mathematics, Literature in English, Physics, Chemistry, Biology, Agricultural Science, and Fine and Applied Arts. In November 2011 GCE examinations, only 11.6% of the 423,518 candidates got the requisite credit grades in five subjects including English Language and Mathematics. The West African Examinations Council results of 2007 revealed that only 356,981 candidates representing 25.99% of the 1,373,000 entries got the requisite basic qualification grades of five credits and above, including English language and Mathematics (WAEC Chief Examiner's report, 2011).

In 2012, the analyses done by the examination bodies revealed that most schools had poor results. In its analysis of the performance of 1,184,907 candidates who wrote the examinations, NECO recorded just 126,500 candidates with five Alphas or credit scores in subjects including English Language and Mathematics - the acceptable basic requirement for admission into tertiary institutions. NECO Registrar also announced 32,423 cases of examination malpractice with Enugu, Akwalbom, and Rivers states of Nigeria as the leading culprits. A breakdown of NECO result of year 2012 showed that only 14.45% passed from Enugu State (NECO Chief Examiner's report, 2012).

In 2013, the Registrar of NECO reported that there was mass failure. The details of the result showed that only 10.68% of the candidates passed with credit in English and Mathematics while only 24.47% passed with at least five credits and above. The Presidency ordered an investigation into the mass failure of students in the year 2013 School Certificate Examinations (Erasmus, 2010). Ali (2009) revealed that the Minister of State for Education, expressed sadness in the recent mass poor achievement of students in the public examinations conducted by National Examination Council (NECO), West African Examination Council (WAEC), and pledged to work hard to reverse the trend (WAEC Chief Examiner's Report, 2014) (WAEC Chief Examiner's Report, 2014).

The phenomenon of mass failure has been a recurring national problem over the past decade. This has affected many students, parents, schools and the society at large. The issue of academic achievement of students at all levels of education in Nigeria especially at secondary school level is very crucial and has been addressed from different dimensions by researchers. Asikhia (2010) for instance, pointed out that the large number of low-achieving students in schools can be attributed to students' low retention, parental factors, association with wrong peers, poor achievement motivation, lack of teacher's use of verbal reinforcement strategy and the likes. Asikhia (2010) further stressed that the attitude of some teachers to their job is reflected in their poor attendance to lessons, lateness to school, poor method of teaching and unsavory comments about students' performance which could be detrimental to students' academic achievement.

Academic achievement has also been approached from the students' factors; the students' peers; their family; the school which includes school climate; and teaching strategies. This is probably because one of the most important goals of school is ensuring a successful academic achievement.

Achievement could be explained as accomplishing whatever goals one set for oneself. It is the attainment of standard of excellence. Achievement therefore, requires that the students make personal effort and get committed towards succeeding in their school work (Authors, 2010). Grobe & Bishop (2001) perceive academic achievement as something one does or achieves at school, college or university, in class, in a laboratory and fieldwork, excluding sports or music. Academic achievement is an excellence in all academic disciplines, in class as well as extracurricular activities. It includes excellence in behaviour, confidence, communication skills, punctuality, assertiveness, arts, culture and the like. Academic achievement is the overall academic performance of a student in the school. It could be assessed by the use of tests and examinations. In this study, academic achievement describes the students' academic work. It is measured with term and annual results at the end of school session. However, the large number of low-achieving students has been a source of worry to parents, teachers, curriculum planners and the federal government. The general belief is that these low achieving students have a basic reading comprehension problem. For how can one do well in any test without a good understanding of the text being presented with?

This assumption has led to the organization of several workshops, seminars and conferences with the purpose of addressing the issue of reading comprehension in secondary schools especially among the low-achieving students. There have been some remediation efforts recommending a number of teaching strategies that can possibly enhance low achieving students' comprehension of their reading materials. This is quite unlike the conventional teaching method that views the teacher as being the controller of the learning environment; where power and responsibility are held by the teacher as the teacher plays the role of instructor in the belief that it is the teacher that causes learning to occur; and where the focus is on teaching not learning (Robert, 2009).

Much of the recent research, however, on academic achievement centers on the right strategies or skills that can possibly make the students aware of their strengths and weaknesses and therefore apply the appropriate strategy that can result in gaining new knowledge and improved learning outcomes. For instance, Adler (2004) opined that there are some strategies that appear to have scientific basis for improving reading comprehension such as: cooperative learning, use of graphic and semantic organizers, question answering, question generation story telling and summarization. Recent studies by National Reading Panel (NRP,2003) pointed out that a good number of strategies have been recommended for teaching in order to enhance students' comprehension of what they read. The National Reading Panel identified some strategies such as summarizing, asking questions, answering questions, graphic organizers and cooperative learning. The above recommended reading comprehension strategies seem to be helpful for students' comprehension, but from the recent WAEC and NECO external examiners' reports, there is still evidence of large number of low-achieving students in secondary schools. Some researchers seem to reveal the efficacy of comprehension monitoring strategy in helping students understand what they learn.

Comprehension monitoring strategy (CMS) is the ability of a reader to ascertain while reading, whether a text is making sense or not making sense. It involves the awareness that the purpose of reading is to derive meaning. It is the continual realization that a text is or is not making sense and the ability to employ "fix-up" or enhancement strategies to address comprehension obstacle (Adler, 2004). Eze (1999) observed that comprehension monitoring is a strategy that requires the learner to establish learning goals for an instructional unit or activity; to assess the degree to which these goals are being met; and if necessary, to modify the strategies being used to achieve the goals. It is an executive function, essential for competent reading which directs reader's cognitive process while striving to make sense of incoming information.

CMS enables a reader to decide whether a particular type of strategy is appropriately utilized in order to take strategic actions if any comprehension breakdown occurs. CMS gives one the opportunity to learn and listen to one's own reading as well as monitor one's own comprehension. Instruction in comprehension monitoring during reading helps readers manage their inner speech as they read. Self-listening and self-monitoring of one's own understanding during reading promote more careful reading and better comprehension (Vigneau, Beaucousin & Hervé, 2006). The above researchers further explained that when one is reading a particularly challenging text, or when one is having problems comprehending a text, there is more awareness of an effort to monitor comprehension. When one becomes aware of the need to monitor comprehension while reading a text, and purposefully select strategies to help understand that text, the efforts are metacognitive.

In this present study, CMS is a learner oriented strategy that helps students become purposeful, active readers who are in control of their own reading and can understand what they read. CMS is a teaching-learning strategy, a conscious plan, set of steps that good readers apply to make sense of text. It is the ability of learners to be aware of their understanding of what they read; their awareness that they do not understand what they read; and their ability to apply the right strategy to help them improve their reading comprehension. CMS is a behaviour undertaken by learners to plan, implement, and evaluate their own learning. It is the learner's dispositions to identify where the difficulty occurs, what the difficulty is, restate the difficult sentence or passage in their own words and look back and forth through the text for information that might help them resolve the problem. It helps to facilitate reading for comprehension. It involves the use of error detection paradigm and students' ability to detect inconsistencies and be able to apply appropriate strategies in resolving the comprehension problems.

CMS was identified by Gunning (1996) as seemingly suitable for low-achieving students as it has every propensity of allowing readers to be aware that they do not understand what they read. CMS involves awareness that the purpose of reading is to derive meaning. When low-achieving students are able to monitor themselves and check their own understanding of the text, reading comprehension will increase. Some other recommended reading comprehension strategies have been applied to improve the reading achievement of students especially the low-achievers. Regrettably, the problem still persists. The comprehension monitoring strategy to be applied by the researcher in this study is the Big Seven Robust Reading Skill by Alexander & Jetton (2000) for low achieving students. The Big Seven Robust Reading Skill involves such elements as:

- **Planning and Monitoring:** This is metacognitive in nature and centers on readers' awareness and control of their comprehension. Learners are taught planning skills that help them to preview texts, set a purpose for reading, and make predictions.
- **Determining Importance:** This is the ability to identify essential ideas and information - how to summarize texts, and note the personal relevance of ideas and information.
- **Asking Questions:** This is the ability to check one's understanding, query the author about his or her writing, and detect relationships among ideas and information within a text.
- **Making Inferences:** This involves using prior knowledge to link parts of texts that authors did not link explicitly.
- **Making Connections:** This requires taking what has been learned from one's own life experiences, from other texts, as well as from cultural and global matters to deepen understandings of what the author presents. It is equally known as Reading Beyond the Line.
- **Synthesizing:** This entails figuring out how what one is reading and learning fits together in a way not thought of before and putting ideas from multiple sources together.
- **Visualizing:** This means forming sensory and emotional images of textual contents. This is the strategy of recognizing that one is having an emotional response while reading and then identifying what the author did to invoke a response (Alexander & Jetton, 2000).

Pressley (2006) pointed out that CMS seems to be very efficient in enhancing and facilitating low-achieving students' comprehension of a text being read. Over time, the students are given more responsibility for using the strategies until they can use them independently. CMS is associated with the idea of Information Processing Theory that is based on the idea that humans process the information they receive, rather than merely responding to stimuli. Self-regulated learning and learning strategy theory emphasize the role of self-observation and self-evaluation in learning. This theory explains the student's acquisition of techniques or routines that enables them to learn to solve problems and complete tasks independently. Gunning in his own theory emphasizes an interaction between the reader's own knowledge and the text which results in understanding of what is being read. The theory that brings in interest as another important factor is the Self-determination theory of motivation and interest. This refers to peoples' inherent tendencies and their psychological needs which motivate people to make choices devoid of external influences and interference. Kathleens (2012), for instance, asserts that if one is more interested in the topic of material read, one's reading comprehension of that topic will be improved.

Elliot, Kratochwill, Littlefield & Travers (2000) looked at interest as an enduring characteristic expressed by a relationship between a person and a particular activity or object. It is an excitement of feeling, whether pleasant or unpleasant, accompanying special attention to some object. It is a sense of concern and curiosity about someone and something. Interest is the feeling of wanting to give attention to something or of wanting to be involved with and to discover more about something. Students who are interested in a task are more likely to use effective learning strategies such as, elaboration of ideas, which in turn increases cognitive engagement and promotes understanding (Wade, Buxton & Kelly, 1999).

Research suggests that interest in cognitive strategies is related to engagement in cognitive tasks (Eccles & Wigfield, 2004). Belloni & Jongsma (2000) emphasized that most reading authorities are quick to point out that interest is an important factor that should be considered while instructing the readers. For instance, the well intentioned practice of many librarians of prohibiting students from

selecting books that are too hard for them implies that interest is a major factor in reading comprehension. In the present study, interest refers to students' disposition to be involved in using reading strategy because they have been made to understand how effective it is in promoting reading comprehension. Interest involves an enjoyment and willingness to become engaged in a cognitive activity. It is an emotionally oriented behaviour trait, which determines students' zeal and enthusiasm in tackling educational programmes or other activities. However, the large number of low achieving students in Nigeria, and particularly Nsukka education zone of Enugu State of Nigeria is quite enormous and demands urgent research attention, this therefore calls for an urgent need to investigate the effect of CMS and gender on achievement and interest of low-achieving students in reading comprehension in Nsukka Education Zone, Enugu State, Nigeria. These problems sensitized the researcher to embark on this study.

## **2. Statement of the Problem**

The ability to read is very imperative for academic success. Furthermore, the ability to read and understand is one of the major determinants of students' success or failure. A good reader has a better opportunity for greater achievement. It is possible that the prevailing problem in Nigeria, especially in Nigerian secondary schools is that the number of low-achieving students is on the high-side. This is evident in students' internal and external examination reports. The large number of low-achieving students has been attributed to some factors such as students' inability to comprehend what is being read, teachers' poor method of teaching for comprehension among others. It is possible that the inability to read and understand is a very important factor that has swelled the number of low achieving students. It is also suggested that this could account for low-achieving students' reason for failing consistently in their internal and external examinations. The consistent mass failure has been a source of worry to parents, teachers, curriculum experts and assessors, especially the teachers, and curriculum experts.

Some studies have revealed the efficacy of CMS in enhancing the ability of a reader's comprehension and interest in what is being read. But such studies are lacking in Nigeria, specifically in Uzo-Uwani Local Government Area of Enugu State. It seems Nigeria and particularly Uzo-Uwani LGAs not yet aware that CMS could enhance the low achieving students' achievement and interest in reading comprehension. It seems, that the low-achieving students in Nsukka Education Zone are being denied of a good reading comprehension strategy which could improve their reading comprehension and possibly help them improve their academic achievement and interest in their school subjects. The problem of this study is; What is the effect of CMS on achievement and interest of low-achieving senior secondary school class two students in reading comprehension?

## **3. Purpose of the Study**

The major purpose of this study is to investigate the role of comprehension monitoring strategy in enhancing the achievement and interest of low achieving Senior Secondary School Class Two Students in reading comprehension. Specifically, the study will determine:

1. Effect of comprehension monitoring strategy on the pretest-posttest mean achievement scores of low-achieving students in reading comprehension.
2. Effect of comprehension monitoring strategy on the pretest-posttest mean interest scores of low-achieving students in reading comprehension.

This study has some theoretical significance for the theory of information processing approach since it addresses the maturity of the children's brain which leads to advancement in their ability to process and respond to the information they receive through their senses. The intellectual work that could be done through Planning and Monitoring, Determining Importance, Asking Questions, Making Inferences, Making Connections, Synthesizing and Visualizing would enable the new knowledge to be transmitted and stored permanently in the long-term memory. The information perceived from external stimuli is encoded and stored in long-term memory system or mental recesses for future use. The study has significance for the theory of self-regulated learning and learning strategy theory as it observes the role of self-observation and self-evaluation and uses these to encourage the students to acquire the techniques that permit them to learn to solve problems and complete tasks

independently. The study is also useful in the improvement of teaching-learning instructions that require reading for comprehension which will ultimately improve students' performance in internal and external examinations such as the School Certificate Examinations.

For the low-achieving students and their teachers, this study will reveal the efficacy of National Reading Panel Big Seven Robust Reading Skills employed in comprehension monitoring strategy for teaching and learning. This will possibly result in an improvement in low-achieving students' achievement and interest in reading comprehension.

#### **4. Research Questions**

The study will find answers to these questions:

1. What is the effect of comprehension monitoring strategy on the posttest mean achievement scores of low-achieving students in reading comprehension?
2. What is the effect of comprehension monitoring strategy on the posttest mean interest scores of low-achieving students in reading comprehension?

#### **5. Hypotheses**

The following two null hypotheses formulated to guide the study were tested at 0.05 probability levels:

HO<sub>1</sub>: There is no significant effect of comprehension monitoring strategy on the posttest mean achievement scores of low-achieving students in reading comprehension.

HO<sub>2</sub>: Comprehension monitoring strategy has no significant effect on the posttest mean interest scores of low-achieving students in reading comprehension.

#### **6. Method**

The design of this study is quasi-experimental study as there was no random assignment of subjects. The specific design for this study is pretest-posttest non-equivalent control group design, with the experimental group adopting a CMS and the control group using the conventional method. Intact classes were used in the study in order not to disrupt the normal classroom arrangement since the study lasted for a period of eight weeks.

The study was carried out in Uzo-Uwani local government area of Nsukka Education Zone of Enugu State, Nigeria. Uzo-Uwani local Government area has fourteen (14) secondary schools(Planning, Research and Statistics unit, Post Primary School Management Board (PPSMB), (Zonal Office Nsukka-2010).The area was purposefully chosen because of the evidence of alarmingly large number of her students whose achievement was poor in West African School Certificate Examinations, National Examination Council (School Records, 2014).

The population of this study comprised all the identified 2013/2014 senior secondary class two (SSII) low-achieving students numbering four thousand eight hundred and sixty four (4864) in Nsukka Education zone of Enugu State. A preliminary survey was conducted in the schools used for the study to identify the low-achieving students from the study area by assessing their previous term and annual results. The choice of senior secondary class two (SSII) students was first, because these students were neither adjusting to senior secondary syllabus as the SSS I students nor preparing for external examination as the SSS III students. Second, it is assumed that the students have attained the formal operational stage of cognitive development, a stage when students can be taught all kinds of thinking which are abstract, formal, and logical.

The sample size for the study comprised all one hundred and twenty seven (127) identified low-achievingSSII students. Multi-stage sampling technique was employed to draw the sample for the study. Firstly, out of the three local government areas in Nsukka Education Zone, namely Nsukka local government Area, Igbo-etiti local government Area and Uzo-Uwani local government Area.The researcher purposively sampled Uzo-Uwani local government area. Purposive sampling technique was adopted to select two co-educational schools with the highest number of low-achieving

students. The low achieving students used were identified based on their previous record in their school subjects. All the students that have consistently scored below 50percent in their school subjects were identified as low achievers.

In each of the schools sampled, two intact classes were purposively selected, making a total of four intact classes. It was purposive because in each school, two intact SS11classes with the highest number of low achieving students were used for the study. The sampled schools were randomly assigned as either the experimental group or the control group. One school was, therefore, the experimental group and the other school, the control group. Low-achieving and other students were used in the study so as not to sensitize the low-achieving students. At the end of the study, data collected on only the low achieving students were used.

## **7. Instruments for Data Collection**

Two research instruments were developed for use in collecting the data for the study. The instruments are:

- i. Test of Comprehension (TOC) Forms I and II
- ii. Reading Comprehension Interest Scale (RCIS).

## **8. Development of the Instruments for the Study**

Test of Comprehension (TOC) Form I was developed by the researcher with the help of some qualified English language teachers in Senior Secondary Schools, and other experts in English language, Economics, Biology, Agricultural science, Government and History. These subjects were chosen because they are the subject areas in which students have been observed to have poor performance. The interview and the preliminary studies conducted with students also revealed that the students find these subjects difficult because of the volume of reading involved in the subjects. The comprehension passages used were those that had not been taught to the students prior to the time of the research.

To develop the instrument, a test blue print was designed and used as a guide for the construction of the test. The guiding principles for developing the test blue print were first, the emphasis on each aspect of the content in the curriculum, and second, the number of periods it can take a qualified English language teacher to cover a particular unit. In addition to the above considerations, the objectives of the contents taught were also considered. These objectives also guided the number of topics selected for each of the units and the levels of questions generated. The textbook used was Intensive English for Senior Secondary Schools, approved for SSII students. An internal consistency reliability estimate of 0.82 was obtained for TOC form 1 and 0.89 for TOC 11 which were established using the test retest procedure.

## **Development of Instructional Programmes**

### **The lesson plans**

The researcher prepared two sets of lesson plans. One set was for the group that would receive training in comprehension monitoring strategy and the second set for the control/conventional group. For each lesson topic, a conventional lesson plan was prepared by the researcher with the help of experts in English Language Education. Thereafter, the researcher prepared the CMS lesson plan version for the group that would receive training in comprehension monitoring strategy with the help of experts in Educational Psychology. Each lesson plan was designed for use in teaching for a period of 40minutes.

### **Validation of the Conventional Lesson Plans**

The initial drafts of the conventional lesson plans were face-validated by three experienced secondary school English Language teachers. Two experts each in English language Education,



Science and Social Science education from University of Nigeria Nsukka also helped in the face validation of the lesson plans.

### **Trial Testing**

The face-validated versions of the lesson plans were subjected to field trials using qualified English language teachers from other Secondary Schools, not in the same area of study for the present study. The field trials were done to assure the researcher that the lesson plans would be readily usable during the main study. The field trials also helped to ensure that the lesson plans were designed towards achieving the stated objectives of each lesson. Useful feedbacks from the trial testing of the lesson plans were used in shaping the CMS lesson plan to the present form.

A pre-treatment training programme was developed in order to teach the students use of comprehension monitoring strategy programme before the commencement of the main study to ensure students' active participation in the learning process.

### **Comprehension Monitoring Strategy Lesson Plan**

This lesson plan was developed by the researcher with the help of experts in Educational Psychology for the purpose of training the subjects in the skills for effective use of CMS in reading comprehension during class learning interaction. In developing the programme, the researcher identified and stated, in behavioural terms, the objectives to be achieved, identified and stated the activities of the teachers and students and the techniques to be adopted. The comprehension monitoring training programme was designed to last for four weeks, with a session lasting for 40minutes. There weretwo sessions for each week.

The comprehension monitoring training programme was developed from information acquired through review of relevant literature. This instructional programme was developed by the researcher with the help of experts in Educational Psychology. The purpose was to instruct the subjects in the effective use of comprehension monitoring strategy skills for comprehension of texts read. To develop the instructional programme, the researcher identified and stated the behavioural objectives to be achieved, the activities of the instructors (teachers), the subjects (students) and the evaluation techniques to be utilized.

### **Procedure for Training the Research Assistants**

The researchers trained only two research assistants out of the four that were used for the study. Those trained were those that trained the students in the experimental group in the use of CMS. These assistants were graduate English language teachers in secondary schools. They were chosen because they were teachers already familiar with the students and can easily understand the subject area. The research assistants were trained in the use of the skills in the strategy using the instructional programme. The research assistants were given copies of the instructional programme to study. The researchers scheduled days and times to meet with the research assistants. On such days, the researchers discussed the programme extensively with the research assistants, such as the steps involved in using each skill, and how to implement the programme in independent reading. The research assistants were allowed to ask questions where they needed clarification. In the last three contacts, the research assistants were asked to demonstrate the use of each of the skills in order to ensure they have a thorough understanding of the strategy and the skills involved. They also did a practical demonstration of the training strategies by actually using some few students who were not even in the area of study. The essence of the conference for the mock sessions was to enable the teachers acquire the competencies for presenting the experimental conditions, thereby establishing a common instructional standard among the instructors. Corrections were made where necessary and at the end of their rehearsal, they showed good mastery of the strategy and the skills as they followed systematically what was written in the instructional programme.

### **Treatment Procedure**

Before the commencement of the training, the researchers sought the co-operation of the principals of the schools involved to enable them build their research programme into the school schedule without disrupting the school programme. The researchers did this by explaining the purpose of the study and the benefits that could be derived if properly conducted. This helped them to obtain the co-operation of the principals of the schools throughout the period of the study. The principals later introduced the researchers to the English Language teachers who served as the research assistants. The researchers took time to familiarize themselves with all the teachers used for the study but discussed, at length, with the two English language teachers used to train the experimental group in the skills of comprehension monitoring strategy (CMS). The objectives were to ensure that those regular English Language teachers who served as research assistants acquired the necessary competencies for implementing the programme.

The researchers were not directly involved in the execution of the treatment programmes but used the four regular English teachers in the four intact classes of the two schools assigned experimental and control schools. Two weeks before the commencement of the training, the English Language teachers for the experimental group used the prepared pretreatment training programme to teach the students in that experimental group the skills involved in the use of CMS. These skills include: Plan and monitor, determine importance, ask questions, make inferences, make connections, synthesize and visualize. Both those in the experimental and control groups were taught the selected passages in their normal class setting. By this time, those in the experimental group had received instruction in those skills involved in CMS. In finding the answers, or solving the essay type questions, the students in the experimental group were also given clear explanation by the teachers on the steps to be used in trying to answer the questions such as identifying the problem, finding the answer, trying to solve the problem and evaluating the answer obtained. All these were done through taking these students through the following methods such as:

i. Reread –This implies re-reading a sentence, a paragraph, or selectively going back to an earlier part of the text to resolve a misunderstanding.

ii. Adjust Reading Rate - If the reader notices that the material is easy and familiar and “clicking” along, reading rate can be increased. Conversely, when the reader is noticing comprehension problems, the reading rate needs to be slowed down.

iii. Reflect on, or Revisit the Purpose for Reading -When students are reading lengthy passages, they sometimes lose their focus. When this happens, it is helpful to think about the purpose for reading which can enable one to proffer a desirable solution to the existing problem.

iv. Access or Re-access Graphic Support -Content texts, such as science or social studies usually contain considerable graphic support. This support consists of pictures, drawings, charts, tables, and diagrams. The teacher models how using graphic support will not only increase comprehension, but may expedite, rather than slow down the reading.

v. Periodically Check for Understanding -The readers were taught to be reflexive, to pause in their reading and reflect on the ongoing development of meaning. They consider what is happening in the story or try to make connections to new content. They also make predictions and confirm previous predictions. Other ways to check for understanding are: self-talk, paraphrasing, summarizing, and retelling.

The results of the study are presented in line with the research questions and hypotheses that guided the study.

### **Research Question One**

What is the effect of comprehension monitoring strategy on the pretest-posttest mean achievement scores of low-achieving students in reading comprehension?

**Table 1: Mean Scores and Standard Deviation on Reading Comprehension Achievement Test.**

Treatment		Pre-RCAT	Post-RCAT	Mean gain score
Experiment	Mean	18.26	37.17	18.92
	N	62	62	
	Std. Deviation	3.12	4.37	
Control	Mean	17.75	18.68	00.93
	N	65	65	
	Std. Deviation	3.08	2.78	

Data presented on Table 1 above indicate the pretest and posttest mean scores of low-achieving students in the treatment and control groups as well as mean gain scores of the groups. The low-achieving students exposed to CMS instruction had a pretest mean achievement score of 18.26 with a standard deviation of 3.12 and posttest mean achievement score of 37.17 and standard deviation of 4.37 in reading comprehension. The pretest-posttest mean reading comprehension achievement gain score is 18.92. The low-achieving students in the control group had a pretest mean achievement score of 17.75 and standard deviation of 3.08 and posttest mean achievement score of 18.68 with a standard deviation of 2.78. The pretest posttest mean gain score is 0.93. The difference in the mean gain scores for the two groups which favours the treatment groups indicated that low-achieving students who were exposed to CMS instruction manifested enhanced achievement in reading comprehension as against their counterpart in the control group. This effect of CMS on the posttest mean achievement scores of low-achieving students in reading comprehension was further tested using the corresponding hypothesis.

**HO<sub>1</sub>:** There is no significant effect of comprehension monitoring strategy on the pretest-posttest mean achievement scores of low-achieving students in reading comprehension.

**Table 2: Summary of the 2 way analysis of covariance (ANCOVA) on the Low Achieving students' test of comprehension (TOC)**

Source	Sum of squares	df	MMean square	f	Sig.	Decision at 0.05 level
Corrected Model	10924.877 <sup>a</sup>	4	2731.219	208.602	.000	
Intercept	3378.911	1	3378.911	258.070	.000	
Pretest	28.239	1	28.239	2.157	.145	
Treatment	10841.600	1	10841.600	828.047	.000	*S
Error	1597.344	122	13.093			
Total	110029.220	127				
Corrected Total	12522.220	126				

a R Square = .872 (adjusted R Squared = .868)

\*S = Significant at 0.05 level

\*NS = Not Significant at 0.05 level

The data presented on Table 2 above showed that treatment as main factor had a significant effect on the low-achieving students' achievement in reading comprehension. This is because the F-value of 828.047 was significant at .000 and also significant at 0.05 level of significance. The hypothesis of no significant difference in the reading comprehension achievement of low-achieving students exposed to CMS and conventional reading strategy was, therefore, rejected. The adjusted R Squared of 0.872 further suggested that 87% of total variance on the dependent measure was contributed by treatment using CMS. This evidence showed that instruction in CMS was effective in enhancing the achievement of low-achieving students in reading comprehension as compared to those in control group that were not exposed to CMS.

## Research Question Two

What is the effect of comprehension monitoring strategy on the pretest-posttest mean interest scores of low-achieving students in reading comprehension?

**Table 3: Pretest and Posttest Mean Interest Scores and Standard Deviation of low Achieving Students in Reading Comprehension**

Treatment		Preinterest	Postinterest	Mean gain Score
Experiment	Mean	50.71	72.39	21.68
	N	62	62	
	Std . Deviation	7.41	5.70	
Control	Mean	49.43	50.23	0.08
	N	65	65	
	Std. Deviation	6.16	5.89	

Data presented on Table 3 indicate that the low-achieving students exposed to CMS had a pretest mean interest score of 50.71 in reading comprehension with a standard deviation of 7.41 and a post-test mean interest score of 72.39 in reading comprehension with a standard deviation of 5.70. Their pretest-posttest mean interest gain score in reading comprehension is 21.68. The control group had a pretest mean interest score of 49.43 in reading comprehension with a standard deviation of 6.16 and a posttest mean interest score of 50.23 with standard deviation of 5.89. Their pretest-posttest mean interest gain score in reading comprehension is 0.08. This indicates that those that were exposed to CMS had more interest in reading comprehension than their counterparts that were not exposed to CMS. This effect of comprehension monitoring strategy on the posttest mean interest scores of low achieving students in reading comprehension is further tested using the corresponding hypothesis.

HO<sub>3</sub>: Comprehension monitoring strategy has no significant effect on the posttest mean interest scores of low-achieving students in reading comprehension.

**Table 4: Summary of the 2-way analysis of covariance (ANCOVA) on the low-achieving students' posttest scores on reading comprehension interest scale.**

Source	Sum of squares	Df	mean square	f	Sig.	Decision at 0.05 level
Corrected Model	15936.636 <sup>a</sup>	1	10883.221	345.133	.000	*S
Intercept	10883.221	1	189.529	6.010	.000	*S
Pretest	189.529	1	15723.477	498.629	.016	*S
Treatment	15723.477	122	31.533		.000	*S
Error	3847.080	127				
Total	493083.000	126				
Corrected Total	19783.717					

a. R Squared= .806 (adjusted R Squared =.799).

Results shown on Table 4 above indicate that treatment as a main factor has a significant effect on low-achieving students' interest in reading comprehension. This is because the F-value of 498.629 with respect to treatment as main effect is shown to be significant at .000 and also significant at 0.05 probability level. This therefore, shows that at 0.05 levels, the F-value of 498.629 is significant. The result indicates that training in comprehension monitoring strategy enhanced low-achieving students' posttest mean interest score in reading comprehension as compared to that of the control group that was not exposed to treatment. Hence, the null hypothesis of no significant effect of comprehension monitoring strategy on low-achieving students' posttest mean interest scores in reading comprehension is therefore rejected.

## **9. Discussion of Results**

### **Comprehension monitoring strategy on the achievement of low-achieving students in reading comprehension:**

The result of the study indicates that the application of CMS has a significant effect on the reading comprehension achievement and interest of low-achieving students in reading comprehension. The group that were exposed to CMS performed significantly better than the group that used the conventional reading strategy in their reading comprehension achievement. The finding of this study is in line with the findings of Pressley (2006) which pointed out that CMS seems to be efficient in facilitating students' comprehension of what they read, and that it makes them perform better than their counterparts that are not exposed to it. Beck, Perfetti & McKeown (1982) also found that the use of CMS in reading enhances the reading comprehension of those that have been exposed to it much more than that of those not exposed to it. The findings of this study suggest that when low-achieving students are able to monitor what they read and check their own understanding of the text, their reading comprehension will improve.

As students monitor their own reading, they learn to check their own responses and become aware of errors or answers that do not fit. Instruction in CMS skills could have permitted the low achieving students to gain control of their learning activities and, therefore, to be able to learn the processes in reading comprehension.

### **Effect of comprehension monitoring strategy on the interest of low achieving students in reading comprehension:**

The results of this study show that instruction in comprehension monitoring strategy enhanced the interest of the low-achieving students. The study further reveals that the students in the treatment group who received instruction in CMS using planning and monitoring, determining importance, asking questions, making inferences, making connections, synthesizing and visualizing skills, had significantly higher reading comprehension interest than those in the control group. The findings of this study is in line with the study of Pressley (2006) which found that CMS seems to be very efficient in enhancing and facilitating low-achieving students' interest and comprehension of what they read. The exposure to comprehension monitoring strategy which makes the readers become self-directed and independent learners who are aware that the purpose of reading is to derive meaning and who can monitor themselves and check their own understanding of the text could have been the reason for the higher interest demonstrated by those in the treatment group. The finding of this study is also in line with the findings of George (2006) who found that students developed more competence in subjects that they are interested in. Thus the interest students showed in an activity and area of knowledge predicts how much they would attend to it and how well they process, comprehend and remember it.

Conclusively, Instruction in CMS skills helped to boost achievement and interest of low-achieving students in reading comprehension. There was a significant difference in reading comprehension mean achievement scores of the treatment and control groups which was in favour of the treatment group.

## **Recommendations**

Based on the findings of this study, the following recommendations were made with the view that the work will be published and circulated.

As the results of this study indicated that training in CMS is effective in enhancing low-achieving students' achievement in reading comprehension, teachers should take time to expose the low-achieving students to well planned learning strategy instruction.

Federal and State Ministries of Education and relevant professional associations interested in the problems of learning in schools should organize seminars/workshops and conferences on the importance of CMS as a spur to students' learning and comprehension of what they learn.

Writers of textbooks should be encouraged to include in their study guides the relevant learning strategies that students can utilize at any particular point. This will help the students to carefully manage their effort and focus their attention on their learning task.

Government agencies and professional bodies should sponsor further research on the effectiveness of CMS in other content areas not covered by this study.

Summarily, the study sought to explore the effect of training in CMS on achievement and interest in reading comprehension of senior secondary school students. This desire was motivated by the need to determine whether training in CMS will enhance low achieving students' achievement and interest in reading comprehension considering the observed poor performance of students in almost all school subjects, especially in arts, social sciences and sciences due to the volume of materials to be read.

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