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Research Paper

Effect of Comprehension Monitoring Strategy on Achievement of Low-Achieving Students in Reading Comprehension

Education

KEYWORDS : Comprehension Monitoring Strategy, Low Achievers, Academic Achievement.

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ABSTRACT

The study investigated the effect of comprehension monitoring strategy on achievement of low-achieving students in reading comprehension. Two research questions and two 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 is 127 low-achieving senior secondary school class 11(SS11) students from two schools in Uzo-Uwani LGA in Nsukka Education Zone of Enugu State, Nigeria. 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). These 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 male and female low-achieving students in the skills associated with comprehension monitoring strategy has a facilitative effect on their reading comprehension achievement. It was recommended among others that teachers should expose the male and female low-achieving students to well planned learning strategy instruction by explaining and demonstrating the strategies that can enable students to read, understand and also solve other academic problems.

1.1 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 is ultimately targeted at helping a reader understand text. It is defined as the level of understanding of a text (Adimora, 2010). It involves the process of understanding, decoding the writer's words and then using background knowledge to construct an approximate understanding of the writer's message. It is the process of encoding and processing information by relating information to the prior stored experiences or ideas (Block & Pressley, 2001). The need to read permeates all the school subjects. 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 be able to understand information for proper adjustment in the environment. 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 (Adimora, 2012).

Low-achieving students are those students whose achievement are consistently below average grade level, and who may have numerous aversions associated with learning. Low-achieving students are those students who consistently achieve below an expected level of performance. They need to be helped to break the cycle of failure. Assisting these students is a requisite for improved academic performance (Adimora, 2012). Adimora, further stressed that 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.

A history of low achieving students could be traced back to 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 because they set lower academic goals, lack persistence, engage in maladaptive academic behaviours and do not invest their best effort. If well guided and assisted they would do better (Deborah & Benedict, 2008). 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. Adimora (2012) 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 these students for them 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 which is evident in such subjects as English language, Mathematics, Literature in English, Physics, Chemistry, Biology, Agricultural Science, and Fine and Applied Arts. This has been a source of worry to parents, teachers, and curriculum experts, as well as local, state and federal governments.

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.

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. 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. Adimora (2012) defined academic achievement as excellence in all academic disciplines, in class as well as extracurricular activities. Academic achievement is the overall academic performance of a student in the school. It could be assessed by the use of tests and examinations.

However, the large number of low-achieving students has been a source of concern to parents, teachers, curriculum planners and the presidency. The general belief is that these low achieving students have a basic reading comprehension problem. For how can one do well in any test when one does not understand the text one is presented with? This 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.

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. Some studies carried out seem to show the efficacy of comprehension monitoring strategy in helping students understand what they learn.

Comprehension monitoring strategy is the ability of a reader to know, while reading, whether a text is making sense or not. 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" strategies to address comprehension obstacle (Adler, 2004). Adimora (2012) 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. Eze (1999) further described comprehension monitoring as a management strategy which involves the effective utilization of available resources for reading for comprehension. Comprehension monitoring strategy is an aspect of metacognition which refers to students' knowledge about their own cognitive processes and their ability to control these processes by organizing, monitoring, and modifying them.

Comprehension monitoring strategy 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. Comprehension monitoring strategy gives one the opportunity to learn and listen to one's own reading as well as monitor one's own comprehension (Vigneau, Beaucousin & Hervé, 2006). Comprehension monitoring 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. Comprehension monitoring strategy 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 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. Comprehension monitoring strategy 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. It 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 increases. 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 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. 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 the 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 Comprehension Monitoring Strategy (CMS) seems to be very efficient in enhancing and facilitating low-achieving students' comprehension of what they read. Over time, the students are given more responsibility for using the strategies until they can use them independently. Comprehension monitoring strategy 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. The influence of gender on low achieving students' achievement in reading comprehension is another area of interest to the researcher that was addressed. Gender as a psychological construct has been used to describe maleness and femaleness (Mboto & Bassey, 2004). A recent study by Goliath (2008) showed that girls were more likely to persist with reading than the boys. There have been studies in foreign countries that investigated gender differences in reading comprehension but such studies seem to be lacking here in Nigeria particularly in Uzo-Uwani LGA of Nsukka Education Zone of Enugu State, Nigeria.

Statement of the Problem

The ability to read and understand is very important for academic work and as well 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. It is possible that the inablility 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. This 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 comprehension monitoring strategy in enhancing the ability of a reader's comprehension in what is being read. Such studies

are seemingly lacking in Nigeria, and specifically in Uzo-Uwani Local Government Area of Enugu State, Nigeria. It seems, then, 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, therefore, put in a question form is: What is the effect of comprehension monitoring strategy on achievement and interest of low-achieving senior secondary school students in reading comprehension?

1.1.1 Research 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 are the post-test mean achievement scores in reading comprehension of male and female low-achieving students exposed to comprehension monitoring strategy?

1.1.2 Hypotheses

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

HO_1: There is no significant effect of comprehension monitoring strategy on the posttest mean achievement scores of low-achieving students in reading comprehension.

HO_2: There is no significant difference in the posttest mean achievement scores in reading comprehension of low-achieving male and female students exposed to comprehension monitoring strategy.

1.1.3 Method

The design of this study is quasi experimental non-randomized pretest-posttest control group design involving one experimental group and one control group. The population is four thousand eight hundred and sixty four (4864) and the sample is 127 low-achieving senior secondary school class 11(SSS11) students from two schools in Uzo-Uwani LGA in Nsukka Education Zone of Enugu State, Nigeria. The instrument used for the study is a researcher-constructed Test of Comprehension (TOC) in two forms - I and II. These 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.

Treatment Procedure

The recearchers got permission of the principal to build their research programme into the school schedule without disrupting the school programme. The researchers and four English language teachers (research assistants) trained the experimental group in the skills of comprehension monitoring strategy. The researchers in collaboration with 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 Comprehension monitoring strategy. 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 Comprehension Monitoring Strategy. 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. They also make predictions and confirm previous predictions. Other ways to check for understanding are: self-talk, paraphrasing, summarizing, and retelling.

The teachers who taught the control group used the conventional method. These were based on the selected contents for the study. Before the commencement of the actual treatments, the Test of Comprehension Form 1 was administered to the subjects in the treatment and control groups as pretest. The pretest score was used as covariate to the students' posttest scores. The English Language teachers administered the test with the researchers at the background monitoring the entire process. Efforts were made to subject all those who took the test under the same condition. The test was scored with the validated scoring guide designed for it. During the actual treatment, instructions in those English Language contents drawn from Sciences, Social Sciences and Arts were given to the treatment and control groups. The purpose was to expose the two groups to relevant experiences in the content areas in which they were tested at the end of the study. Each group was taught using the appropriate lesson plan for teaching comprehension as designed for the group.

The two English language teachers (research assistants) in the intact classes in the treatment school, taught using Comprehension Monitoring Strategy and adhered strictly to the lesson plans prepared for the purpose. The teachers (research assistants) in the control group taught the control group adhering to the conventional lesson plan.

The classes for students in the treatment group and the control group were held during their normal time on the school timetable. Each group met for 40minutes a day, once a week, for six weeks. The Test of Comprehension Form 11 was administered to the subjects in the treatment and control groups as posttest a week after treatment had stopped.

1.1.4 Result

Research Question 1: What is the effect of comprehension monitoring strategy on the posttest mean achievement scores of low-achieving students in reading comprehension?

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

Treatment gain score		Pre-RCAT	Post-RCAT	Mean
Experimental	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 in 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 comprehension monitoring strategy 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 comprehension monitoring strategy (CMS) instruction manifested enhanced achievement in reading comprehension as against their counterpart in the control group.

This effect of comprehension monitoring strategy on the posttest mean achievement scores of low-achieving students in reading comprehension was further tested using the corresponding hypothesis.

HO_1: There is no significant effect of comprehension monitoring strategy on the posttest mean achievement scores of low-achieving students in reading comprehension.

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

Source	Sum of Square	df	mean Square	f	sig	Decision at 0.05 level
Corrected model	10924.877[a]	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
Gender	35.180	1	35.180	2.687	.104	*NS
Experiment ×gender	1.376	1	1.376	.105	.746	*NS
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 in 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 comprehension monitoring strategy 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 comprehension monitoring strategy (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 are the posttest mean achievement scores in reading comprehension of male and female low-achieving students exposed to comprehension monitoring strategy?

Table 3: ***The Mean and Standard Deviation of the Students' Pretest-Posttest Scores in***
TOC by Gender.

			Pretest		Posttest		
Treatment	**Gender**	**N**	**ξ**	**SD**	**ξ**	**SD**	**Mean Gain score**
Experimental	Male	30	18.20	3.10	36.53	3.97	18.33
	Female	32	18.31	3.19	37.78	4.70	19.47
Control	Male	29	17.76	3.47	18.20	2.86	0.44
	Female	36	17.75	2.77	9.06	2.70	1.31

Results in Table 3 above indicate that the male students in the experimental group had a reading comprehension pre-test mean achievement score of 18.20 with a standard deviation of 3.10 and reading comprehension post-test mean achievement score of 36.53 with a standard deviation of 3.97. The mean gain score of male students in the experimental group was 18.33 while their counterparts in control group had a reading comprehension pre-test mean achievement score of 17.76 with a standard deviation of 3.47 and reading comprehension posttest mean achievement score of 18.20 with a standard deviation of 2.86. The mean gain score of male students in the control group was 0.44. The female students in the experimental group had a reading comprehension pretest mean achievement score of 18.31 with a standard deviation of 3.19 and reading comprehension post-test mean achievement score of 37.78 with a standard deviation of 4.70. The mean gain score for the female students in the treatment group was 19.47. Their counterparts in the control group had a reading comprehension pretest mean achievement score of 17.75 with a standard deviation of 2.77, and reading comprehension posttest mean achievement score of 19.06 with a standard deviation of 2.70. The mean gain score for students in the control group was 1.31. However, the female students in the experimental group performed better than their male counterparts. Both the male and female students in the experimental group, however, perfomed better than the male and female students in the control group.
The difference between the posttest mean achievement scores in reading comprehension of low-achieving male and female students who were exposed to comprehension monitoring strategy is further tested using the corresponding hypothesis.

HO_2: There is no significant difference in the posttest mean achievement scores in reading comprehension of low-achieving male and female students exposed to comprehension monitoring strategy.

Results presented in table 2 above reveal the F-value of 2.687 with respect to gender as main factor to be significant at .104 and thus not significant at 0.05 probability levels. There was, therefore, no significant difference in the posttest mean achievement scores of the male and female students in test of comprehension (TOC). The null hypothesis of no significant influence of gender on the mean achievement of low achieving students in reading comprehension, therefore, stands. This shows that the male and female low-achieving students benefited equally from the treatment given. Gender was not a significant factor on the reading comprehension achievement attained by the low-achieving students and the null hypothesis is, therefore, not rejected.

Discussion
- Effect of comprehension monitoring strategy on the achie ment of low-achieving students in reading comprehension.
- Effect of comprehension monitoring strategy on achieve ment in reading comprehension of male and female low-achieving students.

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

- The results of this study indicated that training in comprehension monitoring strategy 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.
- Teacher preparation institutions should incorporate comprehension monitoring strategy in the relevant areas of their curriculum units and expose both the pre-service and inservice teachers to these techniques of teaching and learning, since it has been found to be effective in enhancing the reading comprehension of the low-achieving students.
- Writers of textbooks should be encouraged to include in their study guides the relevant learning strategies that students can utilize at any particular point.
- Male and female students should be exposed equally to training in comprehension monitoring strategy since this study has revealed that the strategy significantly improves their achievement in reading comprehension.
- Government agencies and professional bodies should sponsor further research on the effectiveness of comprehension monitoring strategy in other content areas not covered by this study.

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