



Effects of Metacognitive Based Instruction on NCE Students' Achievement in Reading Comprehension Skills in Nasarawa State College of Education, Akwanga

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Abstract. The aim of the study was to investigate the effects of metacognitive based instruction on NCE Two students' achievement in reading comprehension skills. To achieve this, true experimental research design was employed, specifically, the pretest posttest design. The population for the study consisted of all NCE Two students from the Schools of Arts, and Sciences, Nasarawa State College of Education, Akwanga. A sample of sixty (60) students was used for the study. The sampling technique used was proportionate to size sampling technique and random assignment was used in dividing the students into experimental and control groups. The instrument used for data collection was developed by the researchers and tagged 'Main-idea- Identification Skill Test' (MIST). The instrument was validated by two experts – one in English Education in Nasarawa State College of Education, Akwanga and the other from the Research and Statistics Unit of the Department of Educational Foundations, University of Jos.

To ascertain reliability, the instrument was administered on a sample that was not used for the main study. The reliability of the instrument was sought and it was found to be 0.82. Mean and standard deviation were used to answer the research question while t-test for related sample was used to test the hypothesis. Findings from the study show that the performance of students in the experimental group improved significantly after exposure to metacognitive based instruction. The study recommended that teachers of English courses should adopt metacognitive based instructional strategies in teaching reading comprehension skills so as to improve students' performance in the subject.

Keywords: Metacognitive based instructions, NCE students' achievement and Reading comprehension skills

1. Introduction

English language has the status of official language of educational and academic instruction in Nigerian tertiary institutions. It is offered in every Nigerian tertiary institution and goes by several course titles such as Basic English, Communication Skills, Use of English, The Study of English Language, among others. English language connects Nigeria with many other nations of the world and makes the world a global community of speakers covering several geographical zones, ethnic nationalities and racial groupings. Also, English language helps Nigeria share in the intellectual discoveries and aspirations of other nations (Azuike, 2001).

As the language of academic instruction in Nigerian tertiary institutions, books and other materials for tertiary education are written in English language. This however, excludes courses like foreign languages and Nigerian languages whose course materials are written in those specific languages. For students of tertiary institutions to perform well in school and be better fit to function in society as educated individuals after leaving school, they need to be able to read textual materials written in English with sufficient comprehension. Emphasis during a typical reading activity should therefore be on acquiring both basic and advanced reading comprehension skills. These skills include ability to read, interpret and comprehend what is read at the literal, inferential and critical levels, getting main ideas, and using the main idea(s) to summarize a given text.

At the literal level of comprehension, no interpretation is required by the reader to locate or connect information from the passage as all the information needed to gain

understanding are clearly stated in the text or “on the lines”. Critical comprehension, on its part, sums up the reading and requires the reader to pass judgment on the text read. Critical understanding is however not always derived from the text; it is often 'beyond the lines'. This means searching for the answer in the reader's own reservoir of background knowledge (Jatau, 2017).

Comprehension is the active process of understanding reading which involves meaning construction by using clues in the text and relating them to the reader's existing background. Reading comprehension instruction must therefore include showing students how to apply or use comprehension skills in reading real texts that may not have anything to do with classroom work. Determining or identifying the main idea(s) in reading passages is central to making sense of the reading process and moving towards insight. Main ideas in a given text can be identified or found by distinguishing between the most important and least important information. A student is therefore expected to read a given text, carefully understand it and then based on the understanding, extract or pick out very important information and convey such in clear and correct language using his own words (Enighe, 2010). These activities demand that students have personal determination and motivation to enable them see reading as an acquired skill, a skill to secure, grow and sharpen their understanding of both academic and non-academic matters. To achieve this, every attempt to read must begin with purpose setting. Where this is not done, readers will have difficulties extracting meaning from print (Oyetunde, 1997). This is especially so as tertiary education is the level at which

students do a lot of independent reading from a wide

variety of resource materials as they prepare to become professionals in their chosen fields of endeavour.

Part of the instructional expectations from colleges of education is to teach NCE students to competently use the English language for communication purposes and to function effectively while in training as well as after schooling. Tinuoye (1991) agrees with this position as he says that the aim of the use of English course in tertiary institutions is both immediate and deferred. Gambo (2014) further observes that in all tertiary institutions where the Use of English course is offered, the aim is to improve the performance of students and develop in them insights into the devices by which English operates in its various uses. This is to ensure that deviant features in students' inter language will not be left to consolidate and fossilize to the level of marring their academic work and career in later life. This calls for better methods of instruction one of which is metacognitive based strategy.

Metacognitive-based strategy to reading instruction is essentially activity-based and learner-centered. It is an intentional, interactive and carefully planned technique by which learners monitor or manage their reading. It is the hope of the authors that this strategy to teaching reading will make reading more gainful for tertiary students for as Bright and McGregor (1981), Maisamari (1999), Enighe (2010) noted, the English language as presently taught in tertiary schools, has done little or nothing in taking

care of the inadequacies of English language teaching for studies and professional competence, neither has it really exposed students to "how to read". Nwocha (2008:10) affirms this by saying "the inability of students in tertiary institutions to read with understanding, books written in their fields of study portrays that they were not taught English as a tool language. English was rather taught as a general subject..." This possibly is why students read "for no obvious reason" (Enighe, 2017).

2. Statement of Problem

The inability of tertiary institutions students to read and adequately comprehend textual contents of educational materials they are expected to read is the crux of this work. The experiences of these authors, who themselves teach in tertiary institutions, interact with students on a daily basis, read and grade students' tests and examinations, show that tertiary institutions students have varying levels of difficulty in identifying main idea(s) from specific passages read.

The problem is more critical as many language teachers fail to correctly use reading comprehension techniques and strategies, largely due to their own lack of sufficient experience and knowledge of such strategies. As such, many of the reading comprehension lessons taught to students in Nigerian tertiary institutions hardly equip students to attain sufficient understanding of the reading process and the basic cognitive requirements for optimal reading comprehension, especially in the area of identifying main idea(s). Identification of main ideas from texts does not just happen by itself or simply by

pronouncing words and providing meanings to words in the text. Ability to identify main ideas happens only when readers are able to fully

comprehend the meaning conveyed by the writer, forming relationships with information read and information already known and then applying these information to real life situations. As long as students in tertiary institutions are not exposed to intentional reading skills (which hinges on metacognition), they will continue to experience considerable difficulty in mastering reading comprehension skills which are required for satisfactory academic success (Jatau, 2017).

3. Aim and Objective of the Study

The aim of this study was to determine the effects of metacognitive-based instruction on NCE students' achievement in reading comprehension skills. The specific objective was to determine the extent to which metacognitive-based instructional strategy would improve NCE 2 students' ability to identify main ideas in specific comprehension passages or texts.

4. Research Question

What is the performance mean score of NCE 2 students in reading comprehension before and after exposure to metacognitive based instructional strategy?

5. Hypothesis

There is no significant difference in the post test mean scores of students in the experimental and control groups in their

ability to identify main ideas from reading comprehension passages.

6. Theoretical Framework

The study was guided by the metacognitive theory propounded by Block (1992) and modified as constructivism in McTavish (2008). The metacognitive theoretical view point holds that there is no more debate on whether reading is a bottom-up, language based process or a top-down knowledge based process. The theory continues that it is also no more problematic to accept the influence of background knowledge on both L1 and L2 readers. Research has gone further to show the control readers' exercise on their ability to understand a text. Block (1992) referred to this control as metacognition which involves thinking about what one is doing while reading.

The principal benefit of the metacognitive theory is that its strategies of planning, previewing, monitoring, evaluating, revising, and guessing can improve instruction and learning. According to Block (1992), teachers can use metacognitive strategies to help students develop a plan before reading. Through grouping, modality and practice, the teacher can guide students to make guesses about the text topic, text organization, preview the text and study the illustrations in the passage to achieve comprehension. By practicing and applying metacognitive strategies, students will likely become good readers, capable of having deeper understanding of textual information they come across. Students could also reflect on the strategies they used to determine whether their plans for reading worked or whether they should try something else next time.

7. Research Design

They could carry the understanding they got from a particular text to a higher level of comprehension, and this would equip them with life skills and prepare them for other real life situations outside the school setting.

Metacognitive theory has relevance to this study as students can use the metacognitive skills of self-questioning, visualizing, informing, predicting, and synthesizing to examine their thinking processes and extract information from what they read. Metacognitive skills can also equip learners with the ability to evaluate, realize and judge their own level of reading comprehension. Students can also use the skills of metacognition to know when, where and how to construct textual meanings which serve to further enhance learning.

The design used for the study was true-experimental research design specifically the pretest – post-test design. The population for the study was all NCE 2 students from the thirteen departments in the Schools of Arts, and Sciences in the College of Education Akwanga, Nasarawa State, Nigeria. The total population of NCE 2 students in the Schools of Arts, and Sciences in the institution in the 2014/2015 academic session was eight hundred and ninety six (896).

A total of 60 students selected from seven (7) departments constituted the sample. Table 1 shows the number of departments used for the study and the number of students used for the study in each department.

Table 1: Departments Used for the Study and Number of Students in the Departments

S/NO	SELECTED DEPARTMENT	NUMBER OF STUDENTS
1	CRS	10
2	IRS	02
3	Social Studies	06
4	Mathematics	14
5	Physics	12
6	Integrated Science	04
7	Biology	12
	Total	60

Proportionate to size sampling technique was used both for the selection of the seven departments in the Schools of Arts, and Sciences and also for the selection of students from the selected departments who formed the unit of analysis. Random assignment technique was used in assigning students to experimental and control groups labeled A and B respectively.

The instrument used for data collection was developed by the researchers and named Main-idea Identification Skill Test (MIST) which comprised three reading comprehension passages. The passages tested the reading comprehension skills of the subjects with reference to ability to recognize and identify main idea(s).

To score the instrument, there were three passages. The first had 15 items and two marks were allocated to each correct answer, giving a total of 30. The second passage equally had 15 items and two marks were allocated for each correct answer, totaling 30. The third had 20 items and two marks were allocated for each correct answer, totaling 40. There were 30 participants in the experimental group and 30 in the control group. Pre-test was administered by the researchers before assigning students to experimental and control groups. Treatment was administered to the experimental group only for seven weeks of four hours a week, totaling 28 hours. The treatment was the teaching of comprehension skills (with emphasis on ability to identify main ideas) using the metacognitive based instructional strategy. No treatment was given to the control group but they were taught comprehension using another strategy used by the teachers in the school. Post-test was administered after the treatment. The research question was answered using the mean and standard deviation while the hypothesis was tested at 0.05 level of significance using t-test for related sample.

8. Results

Research Question: What is the performance mean score of NCE 2 students in reading comprehension before and after exposure to metacognitive based instructional strategy?

Table 2: Mean and Standard Deviation Scores of Students' Ability to Identify Main Ideas from Comprehension Passages

Group	N	$\bar{X}$	SD
Control Pre	30	18.27	6.22
Post	30	20.11	6.78
Exp. Pre	30	18.26	6.23
Post	30	22.33	5.22

The result in Table Two shows that the pretest mean scores of the experimental and control groups was 18.27 and 18.26 with a standard deviation of 6.22 and 6.23 respectively, while the mean and standard deviation of the posttest in both the experimental and control groups was 22.33 and 20.11 with a standard deviation of 5.22 and 6.78. This shows that the experimental group achieved higher than the control group

Hypothesis: There is no significant difference in the post-test mean scores of students in the experimental and control groups in their ability to identify main ideas from reading comprehension passages.

Table 3: t-test Analysis of Post-Test Mean Scores of The Experimental and Control Group's Ability to Identify Main Ideas from Comprehension Passages

Group	N	$\bar{X}$	SD	X	DF	t-cal	t-crit	P-05
Experimental	30	24.53	6.28	0.53	58	4.130	2.002	Sig.
Control	30	18.47	5.03					

The results of the analysis in Table 3 show that the calculated t-test value of 4.130 is higher than the t-critical of 2.002. This therefore shows that the null hypothesis was rejected hence there is a significant difference in the achievement mean score between the experimental and control groups in favour of the experimental group.

9. Discussion

The result of the analysis in Table Two reveals that the performance mean score of the experimental group was higher than that of the control group. This shows that students who were exposed to metacognitive instruction performed better than those that were not exposed. This finding is in agreement with Oyetunde's (2013) findings that metacognitive instruction strategy has the potential of improving students' performance in identification of main ideas.

The result of the analysis in table 3 reveals that the calculated t-test value of 4.130 was higher than the critical t-test value of 2.002 at $P < 0.05$. Thus the hypothesis that there is no significant difference in post test mean scores of experimental and control groups' ability to identify main ideas is rejected meaning students taught using metacognitive strategy performed better than those taught without the metacognitive strategy. This is in agreement with Oyetunde & Muodumogu's (1999) and Oyetunde's (2013) assertion that to identify main ideas in specific reading comprehension passages, the teacher has to use a good strategy and the students need to devote more time toward the study.

10. Conclusion

The implication of this study is that the use of metacognitive-based instructional strategy holds great prospects in empowering students to become better readers. However, teachers need to fully understand the nature of the reading process to be able to teach it effectively. This improved methodology will likely improve reading for specific purposes in language classrooms and in particular, the specific purpose of identifying main ideas.

11. Recommendations

Based on the strength of the findings of this study, the researchers hereby make the following recommendations:

- That teachers of English in colleges of education (and by extension other tertiary institutions), should adopt the metacognitive-based instructional strategy to teaching reading comprehension. This would be an improvement on the current strategy of teaching reading comprehension.
- That English language teachers should devote more instructional time to the teaching of how to identify main ideas using the metacognitive-based instructional strategy.

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