



The Effect of Top-Down Reading Strategies on the Comprehension Achievement of Junior Secondary School Students in Kaduna State, Nigeria

Duru Helen Ifeoma¹ and Afolabi Chrsaitiana Bidemi¹

Students of (TESL)

¹Department of Arts and Social Science Education

Ahmadu Bello University, Zaria, Kaduna State

ifeomahelen7@gmail.com, 08037496778 and bidemiloveuall@gmail.com, 08069298980

ABSTRACT

This study investigated the effect of top-down reading strategies on the comprehension achievement of junior secondary school students in Kaduna State, Nigeria. The research was motivated by persistent poor performance in reading comprehension among Nigerian students, particularly in answering inferential and evaluative questions. The study was guided by Schema Theory and Goodman's Psycholinguistic Guessing Game Theory. The study adopted a quasi-experimental, non-equivalent control group design. A total of 80 Junior Secondary School II students participated, with 40 assigned to the experimental group and 40 to the control group. The experimental group was taught using top-down strategies such as schema activation, prediction, contextual guessing, and inference-making, while the control group received conventional teacher-centered instruction. Data were collected using the Reading Comprehension Achievement Test (RCAT) and analyzed with descriptive statistics and t-test. Findings revealed that students exposed to top-down strategies performed significantly better ($M = 51.93$, $SD = 12.89$) than those taught conventionally ($M = 13.63$, $SD = 5.77$), with $t(39) = -16.646$, $p < 0.05$. The results confirm that top-down reading strategies enhance both literal and inferential comprehension by engaging learners' prior knowledge and promoting active meaning construction. The study concludes that reliance on traditional bottom-up methods limits comprehension outcomes. It recommends that English teachers integrate top-down strategies into reading lessons, while curriculum developers and policymakers provide training and resources to support learner-centered approaches.

KEYWORDS: *Top-down reading strategy, schema theory, psycholinguistic guessing game, reading comprehension, junior secondary school, Nigeria*

1. Introduction

Reading comprehension plays a prominent role in man's lives. It is part of our everyday living that one can hardly imagine a life without it. In the age of the Internet and Information

Technologies, reading retains its importance as an essential skill for learners of any language (Alderson, 2019). Reading is central to academic success because it enables learners to acquire, process, and apply knowledge across disciplines. Research in applied linguistics emphasizes reading as an active, meaning-driven process where learners construct knowledge by integrating text with prior experience (Carrell and Eisterhold, 1983; Grabe and Stoller, 2011; Rumelhart, 1980). Adigun and Oyelude (2003) observe that the skill of reading will not only assist learners in organizing their thoughts and jotting down important facts while reading, but also equip them to comprehend the entire text. Rivers (1981) propounds that reading is the most important activity in any language class, not only as a source of information and a pleasurable activity, but also as a means of consolidating and extending one's knowledge of the language. Strevens (1977) also emphasizes the great importance of reading to the learners for two reasons: "firstly, this skill provides the learners with access to a great quantity of further experience of the language. Secondly, it presents a window to the normal means of continuing the learners' personal education by reading skill". Through reading skill, the learners would be able to develop a sufficient language base that enables them to produce the spoken or written messages which they are eager to communicate to others. In Nigeria, where English is both the language of instruction and a second language for most learners, reading comprehension plays a pivotal role in determining students' overall educational outcomes (Arua, 2019). However, research has shown that many Nigerian junior secondary students experience persistent difficulties in understanding and interpreting texts, often performing below expected levels in both internal and external examinations (Oyetunde and Muodumogu, 2020).

Comprehension involves the ability to understand the intended messages of a text. It is the understanding and interpretation of what is read. One big part of comprehension is having sufficient vocabulary or knowing the meanings of enough words (Reading Rocket, 2011). More so, reading comprehension is a way of talking about whether or not a child has understood what he has read. Brummit-Yale (2012) states that reading comprehension is an intentional, active, interactive process that occurs before, during and after a person reads a particular piece of writing. Again, reading comprehension refers to constructing the meaning of the oral or written messages. It is the level of understanding of writing, normal reading rates (around 200-220 words per minute), an acceptable level of comprehension is above 75% (Dictionary.com, 2013).

The teaching of reading comprehension in Nigerian classrooms has traditionally been dominated by teacher-centered, bottom-up methods where emphasis is placed on decoding words, pronouncing text correctly, and answering factual questions (Okebukola, 2021). Such approaches pay little attention to activating learners' prior knowledge, predicting textual meaning, or encouraging independent engagement with texts. Consequently, many students become passive recipients of information rather than active constructors of meaning.

Persistent poor performance in reading comprehension among Nigerian junior secondary school students is a source of concern to educators, policymakers, and parents. Examination reports from the West African Examinations Council (WAEC) and the National Examinations Council (NECO) consistently highlight students' inability to provide coherent answers to comprehension questions, particularly those requiring inference, evaluation, and contextual interpretation (WAEC, 2022). These outcomes suggest that conventional instructional methods are inadequate in developing higher-order comprehension skills. While international research has provided evidence on the efficacy of top-down reading strategies, there is a paucity of quasi-experimental studies that investigate their impact on Nigerian junior secondary students. Addressing this gap is essential for improving reading pedagogy and ensuring students' academic success.

This study contributes to existing scholarship by providing empirical evidence on the effectiveness of top-down reading strategies in Nigerian classrooms. It will be valuable to teachers by highlighting approaches that foster both literal and inferential comprehension. Curriculum developers and policymakers may also use the findings to design programmes that emphasize active learners' engagement. Ultimately, students will benefit by developing deeper comprehension skills that enhance both academic performance and lifelong literacy.

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1.2 Objective of the Study

- i. Investigate the effects of top-down reading strategies/strategy on the reading achievement of Junior Secondary School II students in Zaria Educational Zone, Zaria, Kaduna State.

1.3 Research Question

- i. What is the effect of top-down reading strategies/strategy on the comprehension achievement of junior secondary school students in Zaria Educational Zone?

1.4 Research Hypothesis

- i. There is no significant difference between the reading performance of students taught using top-down reading strategies/strategy compared with the control group in the study area.

2.1 Literature Review

Reading involves decoding written symbols and interpreting meaning. Scholars distinguish between literal reading (understanding surface meanings), inferential reading (drawing conclusions beyond the text), and critical reading (evaluating and questioning text) (Goodman, 1996). In Nigeria, reading is both a skill needed to pass exams and a social practice influenced by culture, language, and environment. The way of teaching reading in many Nigeria is almost the same as before. In other words, almost always, the approach adopted is the conventional method. It means that reading is done for detailed comprehension of short, difficult texts under carefully organized guidance by teachers. In fact, the short passages in the textbook contain a lot of strange words, idiomatic expressions that students are forced to look them up in the dictionary. Shih and Reynolds (2015) described a typical reading class in an ESL or EFL setting as follows. The students read new words aloud, imitating the teacher. The teacher explains the entire text, sentence by sentence, analyzing difficult grammar structures, lexical meanings, and style for the students, who listen, take notes, and answer questions. They study new words, do grammar drills, answer comprehension questions, and do textbook exercises on pronunciation, grammar, spelling, sentence-making, and translation. It can be concluded that the main goal for teachers is to make the students understand the meanings of the sentences with lexical and grammatical knowledge, to gain linguistic knowledge via various exercises in the textbooks rather than constructing meaning from the text and understanding the writer's message by the

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readers' reading comprehension strategies. From the definition of Oxford and Shearin (1994), a foreign language is a language learnt only during formal education. English in Vietnam is more likely to be taught and learnt only as a foreign language; it is not commonly used in daily life. English language teaching and learning in Nigeria has faced challenges. In many classes, the approach used in EFL classrooms is still a conventional method.

In the 1970s, the bottom-up process of reading was challenged by the top-down reading process. The argument was that phonological processing or the ability to decode letters and words are important but not sufficient for proficient reading. Thus, the top-down process proposes that reading comprehension depends almost always on the readers' prior knowledge of the topic of the text. It is believed that the reading process begins in the head of readers, who use their background knowledge to construct the meaning of the text. Mature readers perceive words as different parts of meaning instead of a set of letters and they are able to recognize words almost automatically. Unlike the bottom-up idea which focuses on decoding issues, the top-down view emphasizes using background knowledge, making inferences, interpretations and predictions, drawing conclusions, monitoring comprehension, seeking clarifications and so on, while reading. The top-down model includes skimming, scanning, activating background knowledge, predicting, thinking of the author's main idea, finding clues, contextual guessing and associating image by students which have specified this model of processing as conceptually driven (Harris, 2005; Rajabi, 2009; Smith, 1985). Again, language teachers assist emerging readers recognize what the readers brought to the information on the page by motivating them to activate their background knowledge (Goodman, 1967). Reading strategies, such as prediction, skimming, scanning, inferring, and guessing the meaning of unfamiliar words and self-monitoring are effective reading strategies, which enable EFL learners to achieve comprehension when reading successfully. Top-down processes help the learner to resolve ambiguities or to select between alternative possible interpretations of the incoming data through the use of contextual guessing.

Top-down reading strategies, rooted in schema theory (Rumelhart, 1980) and Goodman's (1967) psycholinguistic guessing game, provide a more interactive approach to comprehension. Anderson (1999), Carrell and Eisterhold (1993) pointed out that although readers persistently bring their background knowledge to their reading tasks, if their existing schema is not

appropriate to the particular text they are reading, their meaning making can fail. Therefore, it is important to prepare second language readers to have enough of the relevant background knowledge required by the text so that they can use it as a strategic device to enhance their comprehension. Again, reading experts and researchers have revealed that knowledge of text structure as one aspect of the reader's schema is important for reading comprehension. In order to comprehend a reading passage effectively, readers need to be able to identify the overall organizational pattern of ideas presented by the author. This knowledge will assist them to perceive the overall connections with the content (Anderson, 1999; Irwin, 1991).

In addition to prior knowledge as a key point, top-down model is actually a whole-language teaching approach and the strategy contains predicting, generating questions from a text, determining importance, inferring, summarizing information from a text and guessing the meaning of unfamiliar words in a comprehension text among others. These strategies encourage learners to activate prior knowledge, make predictions, infer meaning from context, and integrate textual information with background knowledge. Previous studies have demonstrated that top-down approaches improve comprehension, particularly in ESL/EFL contexts where students need support in bridging the gap between language proficiency and text interpretation (Grabe, 2009; Carrell and Eisterhold, 1983). Despite these findings, empirical evidence on their effectiveness in Nigerian junior secondary schools remains limited.

3.0 Methodology

3.1 Research Design

The study employed a quasi-experimental, non-equivalent control group design (Fraenkel and Wallen, 2009). The population comprised JSS II students in public schools in (GJSS Aminu and GJSS Gyallesu). Both groups were pre-tested and post-tested, but only the experimental group received instruction through top-down strategies. A sample of 80 students was drawn from the two schools using purposively technique. One school was assigned as the experimental group (n = 40) and the other as the control group (n = 40).

Below is the diagrammatic representation of the research design.

1st EG → O₁ → XTDPS → O₂

2nd CG → O₃ → X_o → O₄

Key:

EG = Experimental Group

CG = Control Group

XTDPS = (Top-down Processing Strategy)

X_o = (Conventional Strategy)

O₁ & O₃ = Pre-test

O₂ & O₄ = Post-test

Research Design Illustration

3.2 Population and Sample

The population comprised 80 JSS II students in Kaduna State public secondary schools. Eighty (80) students participated: 40 in the experimental group and 40 in the control group.

3.3 Instrumentation

Research instrument for this study was Reading Comprehension Achievement Test (RCAT). The researcher, with the help of her research assistant selected the comprehension passages with comprehension questions that display the same difficulty level from students' English textbooks titled "New Concept English 2 for Junior Secondary Schools (2012) and Intensive English 2 for Junior Secondary Schools". The test covered both conventional method tasks such as decoding and vocabulary development of words. Instructions in the experimental group emphasized schema activation, prediction, contextual guessing, and inference-making, while the control group was taught with conventional teacher-centered methods. This is because

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top-down reading comprehension model operates on the principle that comprehension of text starts from the higher level stages of understanding down to the text being read. The passage was prepared based on the following criteria:

- (1) it is interesting to learners;
- (2) subject matter was suitable for male and female students;
- (3) content of the passages was educative and informative and
- (4) it is also suitable to age, linguistic, readability and socio-cultural disposition of students.

The passages are:

- Bribery and corruption
- The civil service
- The old woman and the doctor

The subjects were treated with the passages mentioned above but the passage (bribery and corruption) was mainly used for the test.

3.4 Procedure

The study lasted over six weeks with non-randomised groups, teacher effects, novelty/Hawthorne effects, and group self-selection are uncontrolled. It is not stated whether the same teacher taught both conditions. Experimental group was taught using top-down strategies (schema activation, prediction, contextual guessing, inference-making) while the control group was taught with conventional teacher-centered methods.

3.5 Data Analysis

Data Analysis Descriptive statistics were used to answer the research questions, while an independent t test was used to test and analyze the hypotheses.

4.1 RESULTS

Results This section presents results and discussions of the findings based on the research questions and hypotheses stated. The experimental group and the control groups' performance scores were analyzed to answer the research questions using descriptive statistics (mean and

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standard deviation). While an independent samples t-test was used to test the hypotheses at the 0.005 level of significance.

4.2 Answering Research Questions

This presents the responses of the research questions one to three in which they were subjected to descriptive statistics-mean and standard deviation.

4.3 Research Question 1:

The table 1 below presents the outcome of students' performance in the experimental and control groups and grading of students' performance and the mean score in the experimental group (top-down group) and control group in the schools. This is to show if there is efficacy of top-down reading strategy treatment on the comprehension ability of students in the experimental and control groups.

Table1: Mean Score and Standard Deviation of Experimental Group (Top-down) and Control Group

SCHOOL	GROUP	N	MEAN	SD
GJSS AMINU	EXPERIMENTAL (Top-Down)	40	51.93	12.891
GJSS GYALLESU	CONTROL (Conventional)	40	13.63	5.772

As can be seen in this table, the subjects taught reading comprehension using top-down reading strategy had a mean score of 51.93 and a standard deviation of 12.891. Whereas, those taught reading comprehension using conventional reading method had a mean score of 13.63 and standard deviation 5.772. This shows that experimental group (top-down) performed better than the control group.

4.4 Hypothesis

Ho: There is no significance difference between the mean score performance of students taught reading comprehension using the top-down reading strategy and those taught by the conventional method.

The null hypothesis is intended to show if the mean score performance of students in the experimental group taught reading comprehension using the top-down reading strategy would differ from that of the control group. Table 2 shows the student's t-test analysis of the hypothesis.

Table 2 Paired Samples t-test Analysis of the performance of the Experimental group and Control group

GROUP	N	MEAN	SD	DF	t- VALUE	P- VALUE	DECISION
Experimental group 2	40	51.93	14.552	39	-16.646	0.0001	Reject HO
Control Group	40	13.63					

Table 2 showed a t-value of -16.646 and a corresponding p-value of 0.0001. This value is less than 0.05 hence; it is significant therefore the null hypothesis is hereby rejected. This implies that there is a significant difference between the mean score of students taught reading comprehension by top-down and those taught the same concept by the conventional method.

5.1 Discussion

The effect of top-down reading strategy on the comprehension performance of students is better than conventional method employed by the teachers of the control group. The findings confirm

that top-down strategy significantly improves comprehension achievement. This is in line with argument on the superiority of top-down reading strategies over the traditional strategy, when this strategy is employed, readers must activate their background knowledge about both the topic at hand and common writing structures (Andrews and Bond, 2009; Brown, 2007; Carrell, 1988; Eskey, 1988; Smith, 1988). This explains why Martin (1979) argues that top-down model better represents how people read. These proponents argued that when students read a passage using other reading strategies, they concentrate on word meaning and often miss comprehension because they pay more emphasis on vocabulary. They advocated that students comprehend easily when they guess while reading. Consistent with Schema Theory and Goodman's model, students actively constructed meaning by linking text with prior knowledge. Literal comprehension gains align with Carrell and Eisterhold (1983), while inferential comprehension gains echo Putra and Wahyudi (2019) and Susanti (2021). These results address the persistent problem noted in WAEC (2022) reports about Nigerian students' inability to answer inference-based comprehension questions.

5.2 Conclusion

The use of top-down reading strategy to teach reading comprehension increases students' ability to read and comprehend text effectively without any much difficulty. The study concludes that top-down reading strategy significantly enhances both literal and inferential comprehension among Nigerian junior secondary students. Over-reliance on conventional, bottom-up methods hinders students' ability to construct meaning.

5.3 Recommendations

To enhance top-down reading skill in junior secondary schools, language teachers would go beyond the school recommended texts to photocopy excerpts from magazines, newspaper, novels and journals to mention but a few to effectively teach reading comprehension using top-down reading strategies by first and foremost arousing the students' background knowledge to enable the students to be actively involved using top-down reading strategies like inference, prediction and contextual guessing.

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Trainings should be organized frequently to update teachers of English on the techniques required to teach reading comprehension using top-down reading strategies effectively. Curriculum developers should incorporate top-down approaches into English syllabi. Policymakers should support learner-centered methods in literacy instruction.

Further studies should extend this research to other levels and contexts like Effect of bottom-up, top-down and integrated reading comprehension strategies on the reading performance of senior secondary school students.

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