

**INQUIRY- BASED INSTRUCTIONAL STRATEGY ON SENIOR SECONDARY II
STUDENTS' ACHIEVEMENT IN ENGLISH LANGUAGE COMPREHENSION IN
IMO STATE**

By

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Abstract

The study investigated the effect of Inquiry based instructional strategy on senior secondary two students' achievement in English language comprehension in Obowo Local Government of Imo State. The study adopted a quasi-experimental control design, specifically the pre-test post-test non-equivalent control group design. Two research questions were posed and one hypothesis formulated to guide the study which was carried out in a Government co-education school in Obowo Local Government of Imo State. Eighty-seven (87) SS two students were used for the study. The study is a quasi-experimental study which employed pretest posttest control design and a 2x1 factorial design. Instrument used for data collection was English Language Achievement Test (ELCAT) developed by the researchers. ELCAT was validated by three experts and the reliability coefficient using Kuder Richardson (KR-20) was found to be 0.81. Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) statistics was used to test the hypothesis at 0.05 significance level. The result revealed that method was a significant factor on students' achievement in English language comprehension. Thus, it was confirmed that students taught English language comprehension using Inquiry based instructional strategy performed better than those taught using the lecture method. The result also revealed that gender was not a factor in the achievement of students in English language comprehension. It was recommended among others things that efforts should be made by curriculum experts to incorporate Inquiry based learning strategy into the teaching of English language comprehension.

Key words: Inquiry based learning instructional strategy, English language comprehension, Academic achievement,

Introduction

The importance of English language comprehension in secondary education cannot be overstated. English serves as the primary language of instruction in Nigerian schools and proficiency in the language is essential for academic success (Adediwura, 2012). Effective English language comprehension skills enable students to understand complex academic texts, communicate their ideas effectively, and excel in various subjects (Saeed et al., 2018). English language plays a crucial role in shaping a nation's identity and fostering a sense of unity among its people. It serves as a symbol of cultural heritage and national pride. Language can unite diverse communities within a nation, providing a common thread that connects individuals and helps to forge a collective identity. This is why the Federal Government in the National Policy on Education (Federal Republic of Nigeria, FRN 2014) assigns it a primary position in the education system. Multiplicity of indigenous languages and ethnic groups gave English language the pride of place in Nigeria and has made it not only a foreign linguistic medium but also the primary language of socio-political life, inter-ethnic communication, administration, and of national and international business transactions including education in Nigeria (Nwigwe & Izuagba, 2011).

Also, English Language is crucial for education and the acquisition of knowledge. It serves as a medium through which individuals learn various subjects, including Science, Mathematics, Literature and History. By developing and promoting a standardized language, a nation can ensure that her citizens have access to quality education, empowering them to contribute to the national development. Hence, English Language stands out as a compulsory subject in Nigerian schools and a compulsory subject in the final year examination of Secondary Schools (Federal Republic of Nigeria, FRN 2014).

However, teaching and learning English language comprehension in Nigerian secondary schools face several challenges. Many students struggle with understanding and interpreting

written texts, which can lead to poor performance in English and other subjects (Oluwole, 2019). These challenges may be attributed to factors such as inadequate instructional strategies, lack of resources, and limited exposure to the English language outside the classroom (Akinbode & Bada, 2017).

To address these challenges, the use of an inquiry-based instructional strategy presents a promising approach. Inquiry-based instructional strategy is a teaching and learning approach that encourages students to actively engage in the exploration and investigation of concepts, problems, or questions. This approach shifts the traditional teacher-centered model to a more student-centered and interactive learning environment. Students are encouraged to ask questions, conduct investigations, and explore solutions, fostering critical thinking, problem-solving skills, and a deeper understanding of the subject matter (Adeyemo, 2015). Inquiry-based learning is a teaching strategy that focuses on student investigation and hands-on learning. The teacher's primary role is that of a facilitator, providing guidance and support for student through the learning process (Afurobi & Izuagba, 2017).

Inquiry-based learning is the act of gaining knowledge and skills through asking for information (Lee, 2014). It is a discovering process of learning that involves students in making observations; posing questions; examining sources; gathering; analyzing; interpreting; and synthesizing data; proposing answers; explanations and predictions; communicating finding through discussions and reflection; applying findings to the real situation; and following up new questions that may arise in the process.(Wale & Bishaw, 2020). Inquiry-based learning emphasizes students' ability to critically view, question and explore various perspectives in real life situations.

In the context of English language comprehension, inquiry-based learning instructional strategy involve students posing questions about a text, conducting independent research, engaging in discussions, and collaboratively exploring language patterns and meanings. This

strategy not only enhances language comprehension but also encourages students to take an active role in their learning process.

It is important to examine performance in relation to gender based on the socio-cultural differences between boys and girls. An investigation by Nnamani and Oyibe (2016) on gender and academic achievement of secondary school students in social studies, revealed that the mean achievement score of female secondary school students was higher than the mean achievement score of male students and this showed that there was significant differences in the mean achievement score of secondary school students in social studies based on gender. Ibebuike (2018) is of the view that the type of schools (single sex or mixed, private or public) has effect on the academic performance of students.

Based on this, gender as it affects academic achievement of senior secondary school students in English language comprehension was explored when taught using inquiry-based instructional strategy.

In addition, effect is a change that would occur in students' academic achievement because of the use of inquiry-based instructional strategy by teachers in English language comprehension. Effect is a change in senior secondary schools students' interest and academic achievement which results from a treatment using a teaching method in a subject or course (Asogwa, Onu & Ifeanyieze, 2017). This study, therefore, determined the effect of inquiry-based instructional strategy on senior secondary II students' academic achievement in English language comprehension. Several studies have examined the effectiveness of inquiry-based instructional strategy on students' achievement and retention in English language comprehension, particularly in the context of secondary education. Adediwura (2012) conducted a study to investigate the effect of inquiry-based instruction on male and female students' self-efficacy and achievement in English language comprehension in Nigerian secondary schools. The findings revealed that the inquiry-based approach significantly improved students' English language comprehension skills and self-efficacy, with no significant gender differences.

Oluwole (2019) investigated the challenges of teaching and learning English language in Nigerian secondary schools and recommended the use of inquiry-based instructional strategies to address these challenges. The study highlighted the potential of inquiry-based learning to foster critical thinking, problem-solving, and collaborative skills, which are essential for effective English language comprehension. Akinbode and Bada (2017) explored the challenges faced by teachers and students in teaching and learning English language in Nigerian tertiary institutions. They suggested that the implementation of inquiry-based instructional strategies could help overcome these challenges and improve students' English language comprehension skills.

The existing studies have explored the impact of inquiry-based instruction on English language comprehension in various contexts, such as Nigerian secondary schools in general. However, there is a lack of research specifically focused on senior secondary II students in Imo State, Nigeria. This study will contribute to the understanding of the effectiveness of inquiry-based instructional strategy in this specific geographical and educational context.

The study by Adediwura (2012) found no significant gender differences in the impact of inquiry-based instruction on students' self-efficacy and achievement in English language comprehension. This current study will further investigate whether gender plays a role in the effectiveness of the inquiry-based instructional strategy on senior secondary II students' achievement in Imo State. It is on this note that the study investigated inquiry-based instructional strategy on senior secondary ii students' achievement and retention in English language comprehension in Imo state.

The following research questions were raised and answered in study:

1. What is the differential effect of Inquiry based learning instructional strategy and Lecture
 1. teaching method on senior secondary 2 students' achievement in English language comprehension?
2. What are the differences in male and female senior secondary 2 students' mean achievement scores when Inquiry based learning instructional strategy is used in English language comprehension?

Hypothesis

This null hypothesis was formulated and tested at 0.05 level of significance:

H0: There is no significant difference between the mean achievement scores of students' taught English language comprehension using Inquiry based learning instructional strategy and those taught using Traditional method of teaching.

Method

This study adopted pre-test, post-test, control group experimental design with a 2 x 2 factorial matrix to determine the effects of training in Inquiry based learning strategy and lecture method on students' academic achievement and in English language. The experimental group adopted Inquiry based learning instructional strategy and the control group used the lecture method for teaching. The population of the study comprised all the Senior secondary 2 (SS2) English language students in all the Government owned co-educational Secondary schools in Obowo L.G.A of Imo State in the 2022/2023 academic session numbering, 847 students (353 male and 494 female students) in Imo State (Imo State Secondary Education Management Board, 2023).

The SS Students of Ezinnachi secondary School was purposively sampled. Ezinnachi secondary is one of the coeducational public secondary schools in Obowo L.G.A of Imo State. The sample of the study consist of 87 students comprising 43 students assigned to the experimental groups and 44 students assigned to the control group from the same school. The class for experimental group has 24 males and 20 females (Inquiry based learning classroom) while the other class for control group has 21 males and 22 females. One instrument was used for data collection in the study. The English Language Comprehension Achievement Test (ELCAT) which consist of 25 multiple-choice questions along with two types of lesson plans: One for the experimental group using inquiry based learning instructional strategy and the other for control group using Traditional method of teaching strategy. The Pre-test Post- test achievements test items were based on the unit topics that consist of topics in English language comprehension that was taught to the students.

The face and content validity were established for the English language comprehension Achievement Test (ELCAT) Forms 1 and 11. To ensure the face validity of the Basic Science Achievement Tests (ELCAT), they were presented to two specialists in Measurement and Evaluation and General Studies from Michael Okpara University of Agriculture. The content validity of the English language comprehension Achievement Test (ELCAT) Forms 1 and 11 were ensured through the use of the test blue prints and item analysis. Thereafter, the test items generated were sent to experts in Curriculum Studies, two experts in Measurement and Evaluation and the one expert in General Studies Science education from Michael Okpara University of Agriculture, Umudike for comments and suggestions. The researchers in

collaboration with some SS English language teachers 2 developed a 25 item multiple-choice achievement test that was based on the topics to be taught on English language comprehension. 10 questions out of the 25 multiple choice questions items were of low level cognitive domain while the other 15 questions were based on high level cognitive domain. The 25 questions covered application, analysis, synthesis and evaluation levels; which are of the high level cognitive skills.

The reliability of the English Language Comprehension Achievement Test (ELCAT) was 0.81. The instrument was subjected to trial testing. The English Language Comprehension Achievement Test (ELCAT) was administered to 30 students who were not sampled for the study. The scores obtained from the trial testing were subjected to Kuder-Richardson (KR-20) formular to determine the internal consistency of the English Language Comprehension Achievement Test (ELCAT). The Kuder-Richardson (KR-20) was appropriate for determining the reliability of the English Language Comprehension Achievement Test (ELCAT) because the instrument required only one correct answer in every case. The conduct of the study took place during the normal English language lesson periods and it lasted for eight weeks. The normal time-table of the school was followed.

Table 1: Pre-test and posttest mean score and standard deviations scores of students in English language comprehension achievement test due to exposure to Inquiry based learning strategy and Lecture Method

Teaching Method	Number of Students	Types of Test				Achievement Mean Gains
		Pre-test		Post test		
		\bar{X}	S.D	\bar{X}	S.D	
IBL Method	44	18.08	4.71	39.35	6.33	21.27
Lecture Method	43	17.95	4.33	26.80	4.39	8.83

The data presented on table 1 indicated that students taught using Inquiry based learning instructional strategy had a mean achievement score of 18.08 and a standard deviation of 4.71 in the pre-test and a mean of 39.35 and a standard deviation of 6.33 in the post-test with a pre-test post-test gain of 21.27. The data also showed that students taught using the Lecture method had a mean score of 17.95 and a standard derivation of 4.33 in the pre-test and a mean score of 26.80 and a standard deviation of 4.33 in the post test,

making a pre-test posttest gain to be 8.83. The findings reveal that students English language with Inquiry based learning instructional teaching strategy had a higher mean achievement gain score than those taught with Lecture method of teaching.

H0: There is no significant difference between the mean achievement scores of students' taught English language comprehension using Inquiry based learning instructional strategy and those taught using Traditional method of teaching.

Table 3: Pre-test and post-test mean achievement score and standard deviation scores of students in English language comprehension achievement test due to teaching methods and gender.

Teaching method	Types of test	Gender			
		Male		Female	
		Student	Achievement gain	Students	Achievement mean gain
		\bar{X}	S.D	\bar{X}	\bar{X} SD

1. IBL	Pretest	24	17.08	5.31		20	17.53	4.52	
	Post-test	24	37.65	6.22	20.57	20	38.09	6.41	20.56
2. Lecture method	Pretest	21	16.67	4.28	15.15	22	17.71	4.81	
	Post-test	21	26.55	4.58	9.88	22	25.91	5.01	8.20

The data presented on the Table 3 indicated that the male students in the IBL experimental group had a mean score of 17.08 and a standard deviation of 5.31 in the pre-test while in the post-test, the male scored a mean score of 37.65 and a standard deviation of 6.22, with achievement gain score of 20.57. The result also shows that the female students in the IBL experimental group had a mean score of 17.53 and a standard deviation of 4.52 in the pre-test of IBL experimental group which is higher than that of male students in the pre-test of IBL experimental group, while the female students also had a mean score of 38.09 and a standard deviation of 6.41 in the post-test of the experimental group with achievement mean score of 20.56 which is higher than that of the male students in the post-test score of the IBL experimental group.

The data presented on Table 2 also indicate that male students had a mean score of 16.67 and a standard deviation of 4.28 in the pre-test of the control group which was lower than the pre-test of the experimental group, while in the post-test, the male students had a mean score of 26.55 and a standard deviation of 4.58, with mean achievement gain of 9.88 which was lower than the experimental group. The result also shows that the female students had a mean score of 17.71 and a standard deviation of 4.81 in the pre-test of the control group which is higher than that of the male students score in the pre-test of the control group, while the female students had a mean score of 25.91 and a standard deviation of 5.01, with mean achievement gain of 8.20 which is higher than that of the male students in the post-test of the control group. This findings shows that statistically sex is not a significant factor in academic achievement of male and female students taught English language comprehension with IBL and Lecture method though in every endeavour there is always gender perceptive.

Hypothesis

There is no significant difference the mean achievement scores of students taught English language comprehension using IBL strategy and those taught using Lecture method.

Table 3: Analysis of covariance (ANCOVA) for English language comprehension Test mean achievement scores of students when taught using IBL teaching strategy and lecture teaching method.

Sources of Variation	Type II sum of square	Df.	Mean sum of square	F.	Significance
Correlated model	5952.991 ^a	2	2976.496	139.590	.000
Intercept	3674.011	1	3674.011	163.662	.000
Pre-test	408.541	1	408.541	18.199	.000
Teaching strategy/ method	4886.773	1	4886.773	517.685	.000
Error	1728.559	84	22.449		
Total	86684.000	87			
Corrected total	7681.550				

Table 3 shows the ANCOVA analysis of the data collected from the posttest scores of students taught English language comprehension using IBL strategy and those taught using Lecture method. From the analysis, $F(1, 84) = 517.685$, $p < 0.05$. Hence, the null hypothesis was rejected. This means that there is a statistically significant difference between the mean academic achievement scores of students taught English language comprehension using Inquiry based learning strategy and lecture method of teaching. This further indicates that there was higher improvement in the academic achievement scores of the experimental group than students in the control group.

DISCUSSION

Result from Table 1. showed the effects of teaching methods on students' achievement in English language comprehension and that the mean achievement scores of the students in the experimental group were higher than that of the mean achievement scores of students in the control group. This result revealed that method was a significant factor on students' achievement in English language comprehension. Thus, it was confirmed that students taught English language comprehension using Inquiry based learning instructional strategy performed better than those taught using the lecture method. The findings of this study support the findings of previous studies (Adediwura, 2012 & Oluwole, 2019) that confirmed that the use of effective teaching strategy leads to students' improved

achievement in English language comprehension. This is because in using IBL strategy I is a discovering process of learning that involves students in making observations; posing questions; examining sources; gathering; analyzing; interpreting; and synthesizing data; proposing answers; explanations and predictions; communicating finding through discussions and reflection; applying findings to the real situation; and following up new questions that may arise in the process. These instructional procedures inherent in IBL help to reinforce learning and understanding to students.

Also, the data on Table 2 shows the effect of teaching methods and gender on students' academic achievement in English language comprehension. This findings shows that statistically sex is not a significant factor in academic achievement of male and female students taught English language comprehension with IBL and Lecture method though in every endeavour there is always gender perceptive. This result is in line with the findings of Adediwura (2012) that revealed that there is no significant difference in English language comprehension achievement between males and females students.

All so, the data on Table 3, revealed that there was a significant difference in the academic achievement means score of the students taught using IBL instructional strategy and those taught using Lecture method. The result may be because in IBL, there are instructional procedures that reinforce learning and understanding. These give students opportunities to actively participate, apply the learning, and experience learning success. This findings is in line with the result of Oluwole (2019) that IBL instructional strategy method when used in teaching English language comprehension to students, enhances their academic achievement better than lecture method of teaching through it instructional procedures.

Conclusion

This study was carried out to investigate the effect of Inquiry based learning instructional strategy on SS 2 students' academic achievement in English language comprehension in Imo State. The result of the study shows that students exposed to IBL instructional strategy had higher mean academic achievement score gain than their peers exposed to lecture method of teaching. That is to say that IBL enhances students' academic achievement.

Recommendations

Based on the findings of the study, the following were recommended by the researchers.

- 1 In-service programme should be organized by relevant authorities for senior secondary teachers on some innovative teaching methods like Inquiry based learning instructional strategy that improve students' academic achievement.
- 2 Efforts should be made by curriculum experts to incorporate Inquiry based learning instructional strategy into the teaching of English language comprehension in senior secondary school class.
- 3 There should be a review in the current instructional procedure to accommodate Inquiry based instructional strategy in senior secondary teaching syllabus. This is to increase students' academic interactivity and reduce the recurrent mass failure of students in English language comprehension.

References

- Adediwura, A. A. (2012). Effect of peer and self-assessment on male and female students' self-efficacy and achievement in Nigerian secondary school mathematics. *Gender & Behaviour*, 10(1), 4492- 4508.
- Adeyemo, A. T. (2007). Effective teaching in Nigeria: The way forward. *Journal of Educational and Social Research*, 3(2), 118-125.
- Akinbode, R. F., & Bada, E. (2017). Challenges of teaching and learning English language in Nigeria tertiary institutions. *International Journal of Humanities and Social Science Invention*, 6(9), 57- 60.
- Asogwa, V. C., Onu, M. F. & Ifeanyieze, O. F. (2017). Effect of v-map teaching strategy on senior secondary school students' interest and achievement in Fishery. *Journal of Education Studies*.
- Federal Republic of Nigeria, (2014). *National Policy on Education*, Abuja: NERDC press.
- Ibebuike, U. O . (2018). Effect of cognitive apprenticeship and reciprocal teaching methods on junior secondary school students' academic achievement in Home Economics. *PhD Dissertation*. Michael Okpara University of Agriculture, Umudike
- Izuagba, A. C., Afurobi, A. O., & Ifegbo, P. C. (2014). *Constructivism: The Pedagogy for 21st century classroom*. Owerri: Cel- Bez Publishing.Co. Ltd.

- Lee, V. R. (2012). The effectiveness of inquiry-based instruction on student learning outcomes: A review of the literature. *Journal of Educational Research*, 105(4), 283-294.
- Nnamani, S. C., & Oyibe, O. A. (2016). Gender and academic achievement of secondary school students in social studies in Abakaliki Urban of Ebonyi State. *British Journal of Education*, 4(8), 72-83.
- Nwigwe, N. V. & Izuabga, A. C. (2011). Enhancing reading comprehension through semantic mapping. *Journal of English Language Teachers Association of Nigeria*, 1(2), 121-135.
- Oluwole, D. A. (2019). The challenges of teaching and learning English language in Nigerian schools. *Journal of Educational Research and Reviews*, 7(3), 47-56.
- Saeed, K. M., & Alharbi, M. A. (2018). The effect of using an inquiry-based learning approach on Saudi EFL students' motivation and achievement. *English Language Teaching*, 11(5), 117-128.
- Wale, B. D., Bishaw, K. S (2020) Effects of using inquiry based learning on EFL students' critical thinking skills. *Asia- Pacific Journal of second and foreign language Education* 5(9) <https://doi.org/10.1186/s40862-020-00090-2>