



Impact of Language Laboratory and Instructional Material on Students' Academic Achievement in English Language in Imo State: Moderating Impact of Mother Tongue

NWOSU Bridget Nkechi ¹

AZARA Chinyere Lilian ¹

BASSEY James Mbosowo ²

¹*Department of Educational Psychology/Guidance & Counselling, Alvan Ikoku Federal University of Education, Owerri, Imo State*

²*Department of Language Education, Imo State University, Owerri, Nigeria*

Abstract

The study investigated Impact of language laboratory and instructional materials on students' academic achievement in English language in Imo State: Moderating impact of mother tongue. The researchers posed two research questions and formulated two null hypotheses. The design of the study was quasi experimental design. The population of the study was 4033 senior secondary school students whereas the sample size of the study was 120 SS2 students. Two adopted instruments were used in data collection namely: 40 multiple objective tests extracted from a teacher made test assessment in Igbo Language which served as the pre-test scores (TMGT). The second instrument was another 40 multiple objective tests extracted from WASC (2022) senior secondary school certificate examination. The validity of the two instruments was determined by three specialists from the Faculty of Education, Alvan Ikoku Federal University of Education, Owerri Imo State. The reliability of the second instruments was determined over time being adopted instrument from West African examination Council. The teacher made test scores for the pre-test has a reliability coefficient of 0.73. The findings of the research study were that: students in the treatment group who scored higher in Igbo Language assessment test also performed excellently well in English Language achievement test. The participants in control group with low scores in Igbo Language at pretest performed poorly in English Language achievement test. Based on the findings, the researchers recommended that government should make Igbo Language compulsory in senior and junior secondary schools in Nigeria.

Keywords: Academic Achievement, English Language, Mother tongue, Students

Introduction

Language is a major cultural phenomenon in human societies and therefore an important regulator of individual consciousness and societal actions (Donald, 2016). English, the official language in Nigeria, is used extensively in the print and electronic media, in the judiciary, police, the armed forces, legislature, in commerce and in politics etc. In education, it is the medium of instruction from the primary to the tertiary levels. It is widely acclaimed that English Language is a global language, spoken by millions of people as first, second or foreign language. According to Fajoju, Ahuede and Ojugo (2022) English Language is the most widely taught, read and spoken language that the world has ever known. The spread of English Language across nations can be traced to evangelism and later colonial periods. Colonial education was motivated largely by the desire to inculcate the values of the colonial society and to train individuals for the service of the colonial state Musaazi in (Njoku, 2021). However, there seem to be very poor comprehension in English Language by students in secondary and tertiary institutions.

Adejere in Laloo (2017) lamented that the nation's huge investment in English Language appears not to be yielding any substantial dividends. The percentage of students in Nigeria that do have pass in English Language yearly at secondary and tertiary levels has been consistently low over time. The serious disquiet over poor performance was also reported by Rasheed in Naziri (2003) thus; for a very long time in our schools, students have challenges comprehending English Language as a subject. According to Adeyanju (2020) there seems to be a crushing crisis in the teaching and learning of English Language in our secondary schools. There is a widespread perception that the level of proficiency in English Language in the country has seriously declined. The above concerns have not yielded any result and examination reports are still talking about massive abysmal failures in senior secondary school examinations. It is in the culture of Nigerians to give reasons no matter how genuine an issue is (Philip, 2021). Adeyanju (2020) has attributed this massive failure of students to their attitude towards education in general. Duruji (2020) argued that the process of teaching has been lowered hence strategies of teaching English Language must be improved upon.

The problem of teaching and learning English Language in schools is multidimensional and every sector of education seems to be involved. It is suggested that teachers should give special attention to learners noting their peculiar nature (Duruji, 2020). To assist learners, the teacher may employ the strategy of personalizing and individualizing language teaching to stimulate learning. Nkwocha and Akanwa (2017) in support of teachers' role in solving the problem of transmitting knowledge vehemently stated that trained teachers are generally inadequate in number, poorly paid, often unmotivated, lowly regarded, teach in depressing circumstances which among other things lack the enabling working condition for effective performance.

Effective teaching and learning demand the support of non-teaching staff. In English Language, teachers are supported by technicians who man and maintain English Language laboratories, according to Duruji (2020) supporting technicians are completely absent in almost all the secondary schools in Owerri Municipal Council. It is expected that a trained technicians that are versed in the knowledge of language laboratory be employed in secondary schools for effective utilization of English Language laboratories. English Language laboratories usually gulp huge amount of money from the government. Without optimal functioning such investments would yield absolutely nothing (Nkwocha & Akanwa, 2017). Another strong factor that is usually ignored when reporting the decline in performance of students in English Language is the absence of instructional and modern teaching materials. According to Ene (2023), teaching facilities are very essential and where they are lacking or inadequate, the school becomes unconducive for teaching and learning to take place. The importance of instructional materials in the teaching and learning cannot be overstated. Instructional materials hold great promise to improved teaching and learning. From the views of Orie and Ibekwe (2014) inadequate time allocation for English Language in school timetable is another hindrance to proficiency in English Language by secondary school students.

A reasonable time is not allotted to teachers for effective teaching of English Language in secondary schools. Added to the problem of time allocation according to Ntagu (2021) is the insufficient use of modern teaching materials such as tape recorders, video, tape recorders and cassettes, photocopies and

computer. Power supply is also inadequate creating a conducive learning environment. Ntagu (2021) also expressed that supervisors are not enough to monitor and evaluate teaching pedagogies employed in teaching English Language in secondary schools. Reports have it that supervisors are hardly sighted in schools while head teachers hardly conduct internal supervision to assist in putting things right. On these premises there has been a general call from advocates and professionals for a solution to these problems before English Language becomes extinct by producing unskilled, unproductive and Half-baked English Language graduates. Despite providing and making adequate time, instructional materials, trained teachers and good motivation, and making English language compulsory subject for all students, the indigenous language could provide the required assistance and desired improvement both in examination performance and spoken language. According to few head teachers interviewed by the researchers, the government has increased funding of secondary schools and many schools now have quality instructional materials. The result released by West African examination council shows that performance of students is yet to improve in English language. The problem may therefore be the issue of mother tongue (Nnadozie, 2022).

The importance of indigenous language or (L2) standing as a buffer to teaching and learning of English Language cannot be overstated. How this could achieve the desired result has been a subject of debate hence, the intention of the researchers to conduct a study that examined the moderate impact of mother tongue education on the teaching and learning of English Language in secondary schools in Owerri Municipal Council. From numerous studies reviewed, no such study has been carried out on Owerri Municipal Council. Therefore, the study investigated the impact of Language laboratory and instructional materials on Students' academic achievement in English Language in Imo State: Moderating impact of mother tongue. The main purpose of the study was to determine the effects of language laboratory and instructional material on students' academic achievement in English Language in Imo State: Moderating impact of mother tongue in Owerri Education Zone I. The study sought to:

- Determine the academic achievement mean scores in English Language of senior secondary school students in treatment group at pre-test and at post-test assessment period.
- Ascertain the academic achievement mean scores of senior secondary school students in control group in English Language assessment test at post-test.

Research Questions

The following research questions guided the study:

- What is the achievement mean scores in English Language assessment test of senior secondary school students in treatment group at post-test assessment period?
- What is the achievement mean scores in English Language assessment test of senior secondary school students in control group at post-test assessment period?

Hypothesis

The following hypotheses tested at 0.05 level of significance guided this study.

- There is no significant difference in the achievement mean score of senior secondary school students in treatment group on English Language assessment test at post-test.
- There is no significant difference in the achievement mean score of senior secondary school students in control group on English Language assessment test at post-test.

Methodology

This study adopted a quasi- experimental research design; the researchers intend determine how the non-existence of Igbo Language skills may determine the performance of senior secondary school students in English Language. The population of the study was 4033 secondary school students in SSII in Owerri Education Zone II (Ngor-Okpala), Aboh Mbaise, Ahiazu and Ezinihitte Mbaise Local

Government Areas). The sample size of the study was 120 SS11 students randomly selected using purposive simple random techniques.

The pre-test instrument “A teacher made assessment test” consisting 40 multiple objective questions in Igbo Language was tested to guarantee its reliability adequacy in the present study. By administering the instrument to 50 students in five senior secondary schools in Orlu Education Zone II in two intervals and correlating the scores using Cronbach Alpha statistics; a reliability coefficient of 0.72 was determined. Thus, “A teacher made assessment test” was deemed usable in the present study. The post-test instrument which was an adopted WASC 40 multiple choice objective questions in English Language for the year 2022/2023 academic year is a standardized tool. The reliability of the instrument is determined since it was used in all the English Language speaking West African States. The validity of the two instruments was determined through three experts from Faculty of Education Department of Educational Psychology, and G/C. Alvan Ikoku Federal University of Education Owerri Imo State Nigeria.

Two groups were created by the researchers namely; treatment group and control group. Students in treatment group were 60 in number whereas those in control group were 60 also. The same instrument was used for both the pre-test and the post- test in English Language for Senior Students who scored 50 marks and above in Igbo Language were listed in treatment group whereas those who scored 0 and below in Igbo Language were listed in control group. Selection was purposive since it was based on a high and low score in Igbo Language. The two groups were post-tested using English Language 40 multiple objective questions extracted from WASC (2022/2023) senior secondary school certificate examination. Their post-test scores determined the difference in their academic achievement in English Language.

The data collected were analyzed using mean and standard deviation for the research questions and t-test of mean difference in testing the hypothesis at 0.73. The ceiling mark was 100 marks. Every correct score attracts 2.5 marks hence 40 correct scores equal 100.

Results:

Research Question 1: What is the achievement mean score in English Language assessment test of senior secondary school students in treatment group at post-test assessment period?

Table 1: Descriptive statistics analysis on the achievement mean score of senior secondary school students in treatment group at pre-test (Igbo) and post-test (English Language)

	N	Pre-test X (Igbo Lang)	Std. dev.	Post-test (English Lang)	Std. dev.
Treatment group	60	69.27	1.02	68.01	1.13

In table 1, the students were pre-tested in Igbo Language and they obtained an academic achievement scores of 69.27 as mean. Similarly, according to the figures on the table when post-tested in English Language, they obtained a mean score of 68.01. Their standard deviation score at pre-test was 1.02 and post-test was 1.13. These values project an even distribution of scores in both Igbo Language at pre-test and English Language at post-test. This table suggest that knowledge of Igbo Language (69.27) enhanced student’s proficiency in English Language.

Research Question 2: What is the achievement mean score in English Language assessment test of senior secondary school students in control group at pre-test and post-test assessment period?

Table 2: Descriptive statistics analysis on the academic achievement mean scores of senior secondary school students in control group at pre-test (Igbo) and post-test (English) assessment period

Variable	N	Pre-posttest X ⁻ (Igbo Lang)	Std. dev.	Pre- posttest (English Lang)	Std. dev,
Control group	60	46.24	1.07	50.03	0.96

In table 2, students in control group had an achievement mean score of (46.2) at pre-test in Igbo Language. Similarly, the students in control group had a standard deviation score of 1.07. At post-test, students in control group as shown on the table, obtained a mean score of 50.03 and standard deviation score of 0.96 in English Language assessment test. This result suggests that poor Igbo Language proficiency of students in control group deprived them high achievement scores in English Language. This pre-supposes that poor knowledge of mother tongue (L1) influences negatively the learning of foreign language (L2) such as English Language in this study.

Hypothesis 1: There is no significant difference in the pre-test and post-test scores in English Language of senior secondary school students in treatment group at assessment period.

Table 3: t-test analysis on the pre-test and post-test difference in scores of participants in treatment group during assessment

Variables	N	Post-test X ⁻	Std	df	LS	tcal	Tcrit	Remarks
Treatment group	60	68.01	1.09	58	0.05	19.04	1.960	Reject Ho ₁

Table 3 shows the post-test scores in English Language of participants in experimental and control group. Participants in treatment group had a mean of 68.01 and standard deviation of 1.09. Calculated 't' was found to be 19.04 and table 't' was 1.960. Since the calculated 't' is greater than the table 't' the hypothesis was rejected hence there is a significant difference in the post-test mean scores of participants in treatment and control group in English Language.

Hypothesis 2: There is no significant difference in the pre-test and post-test achievement scores of senior secondary school students in control group

Table 4: t-test analysis of senior secondary school students in control group at pre-test and post-test assessment period

Variables	N	Post-test X ⁻	Std	df	LS	tcal	Tcrit	Remarks
Control group	60	46.24	50.03	58	0.05	1.83	1.960	Reject Ho ₂

In table 4, the students in control group had pre-test achievement mean score of 46.24 and post-test mean score of 50.03, df 58 and L.S. 0.05. The calculated 't' was 2.03 whereas the table value of 't' was accepted. Therefore, there is no significant difference in the pre-test and post-test mean achievement scores of students in control group. This was so, because tcal (1.83) was less than tcrit (1.960). This

leads to the conclusion that poor knowledge of mother tongue affects negatively one's proficiency in second language (L2) in this study, English Language.

Discussion:

The result of the study revealed that participants in treatment group who scored high marks in Igbo Language at pre-test has the highest mean score in English Language at post-test assessment. This result means that participants in treatment group who had higher scores in Igbo Language at pre-test performed better than participants in control group who had low marks in Igbo Language at pre-test when assessed together at post-test. The reason for this result is that participants in treatment group would have been inspired by their proficiency in Igbo Language. This shows that mother tongue has a great impact in the performance of students in English Language. Similarly, participants in control group had low scores in Igbo Language at pre-test and equally had low scores in English Language at post-test. This shows that their low score in Igbo Language would have consequently resulted in their poor performance in English Language assessment test. The result of this study is supported by Nnadozie (2022) whose study revealed that mother tongue had a great impact in learning and teaching of English Language. The study also revealed a significant difference between the pre-test and post-test scores of participants in treatment group. However, there was no significant difference in the pre-test and post-test scores of students in control group.

Conclusion:

The findings of the present study revealed that mother tongue facilitates proficiency in English Language. Most English students see indigenous mother tongue as not important in helping them become efficient in development of vocabulary and fluency in second language. The present study and its funding are emphasizing that mother tongue is very necessary in understanding English Language among senior secondary school students in Owerri Municipal Council. Students who fluent in English show strong psychological relevance in academic pursuit.

Recommendations:

The findings of the present study necessitated the following recommendations:

- Government should promote the studying of indigenous language to enhance proficiency in English Language
- Mother tongue should be made compulsory for all students to enable the desired improvement in achievement scores of students in English Language.
- Mother tongue should be made compulsory for all students in primary and junior secondary schools to enable growth of indigenous language in Nigeria.

References

- Adeyanju, O.T. (2022). Culture and language in development. *Journal of Literature and Language Studies*, 12(1): 310-317.
- Donald, L.D. (2019). Creating sustainable families for strengthening adolescents' development. *Journal of Comparative Studies*, 3:25-40.
- Duruji, K.M. (2020). Culture and language variables, Variable Phenomena for National Integration in Nigeria. Enugu: San Press Ltd.
- Ene, I.O. (2023). Medium of instruction: a bedrock for economics reliance in Nigeria. *Unpublished conference paper presented at the 1st National Association of Academic (NAA) held at Ambrose Ali University, Ekpoma, April 10-14.*
- Fajoku, S.A., Ahuede, O. & Ojugo, A.I. (2022). Parental involvement as a correlate of academic achievement of primary school pupils in Edo State, Nigeria. *Research in Education*, 95(1), 33-43.
- Fajoku, R.C., Ahuede, V.B. & Ojugo, K. (2022). Language acquisition and second language learning: Implication for counselling. *Journal of Language Studies*, 11(1): 26-32.
- Fakeye, D.O. (2020). Indigenous language education, the teaching and learning of English Language at primary schools in Nigeria. *Journal of Nigerian Language and Culture*, 12(1): 247-256.
- Laloo, M.G. (2017). "Home Accident and Safety Precautions". *International Journal of Contemporary Applied Sciences*, 2(8), 2308-2365 www.ijcas.net 72.
- Njoku, F. (2021). Corruption: The bane of Nigerian's development. In E.C. Anowai, *Pope John Paul II Memorial Lecture Series*, 171-203 Awka: Demercury Bright Printing.
- Nnadozie, E.C. (2023). The impact of indigenous language in the learning of English Language among senior secondary school students in Owerri Education Zone I. (*Unpublished M.Ed. thesis*) *Imo State University, Owerri.*
- Ntagu, P.A. (2021). Culture and language: Veritable phenomena for national integration in Nigeria. *Journal of Nigeria Language and Culture*, 12(1): 197-204.
- Nwocha, P.C., Akanwa, U.N. (2017). Comprehensive educational guide with illustrations: for student and researchers. Owerri: *Mercy Divine Publisher.*
- Orie, J.B. and Ibekwe, I.K. (2014). Business policy and strategy: a simplified approach: Lagos: Green and Cherish Ltd.
- Philip, B. (2021). Benchmarks global trends in education. Benin City: Babya Influence Enterprises.
- Waziri, B. (2003). "The Arewa factor in the emergence of national language and its world implication for learnability". In the transformation of Northern Nigeria 1903-2003, being papers presented at the *International Conference organized by Usman Danfodio University and Arewa House A.B.U., Kaduna held at Arewa, House from 27th – 29th March, 2012.*