

# Influence of Sign Language in the Examination of Reading Comprehension to Students with Hearing Impairment in Senior School Certificate Examination in Nigeria

Mairo Hamid Ipadeola<sup>1,\*</sup>, Aznan Che Ahmad<sup>1</sup>, Martha Onjewu<sup>2</sup>

<sup>1</sup>Department of Special Education for Diverse Needs, School of Educational Studies, Universiti Sains Malaysia, Penang, Malaysia

<sup>2</sup>College of Administrative Studies & Social Science (CASSS), Department of Languages, Kaduna Polytechnic, Nigeria

**Abstract** Reading comprehension is a major problem facing students with hearing impairment in Nigeria. While provisions are made by National Examination Council (NECO) and West African Examination Council (WAEC) for blind students in recognition of their condition, students with hearing impairment are not given any form of aid in the Senior School Certificate Examination (SSCE) by NECO or WAEC. Meanwhile, a credit in English language is a requirement to gain admission into any Nigerian higher institutions and Reading Comprehension is a compulsory question in both SSCE and WAEC examinations. The aim of this study was to explore the impact of signing of Reading Comprehension to hearing impaired students taking the SSCE examination in order to find out the need for it by hearing impaired students while taking the SSCE. To achieve this aim the study proposed two research questions with one hypothesis and adopted a quasi-experimental design which engaged the simple random sampling technique to split the sample into two: group (A) being the control group while group (B) was the experimental group. The experimental group was exposed to three weeks practice of five passages of English Reading Comprehension using Sign Exact English (SEE). The two groups were tested before and after the intervention on the same English Reading Comprehension. The scripts were collected and marked by a certified English Language NECO/ WAEC marker, using slandered marking scheme. The scores for pre test and post test were inputted into statistic software, Statistical Package for Social Science (SPSS) version 20. The data were analyzed using paired sample t -test. The output indicate that the t value was greater than 0.05 ( $t \geq .05$ ). The study concluded that, there is no significance difference between the mean performance of hearing impaired students who sat for the Paper based and Sign based reading comprehension examinations from Government Technical School Malali –Kaduna. The implication of findings were discusses and recommendation on how to improve further studies were highlighted.

**Keywords** Hearing impaired students, Reading Comprehension, Senior School Certificate Examination, Sign Language

## 1. Introduction

Nigeria like every country of the world has the hearing impaired as part of her population. Although their exact statistics may be indeterminable, their existence is certain. The National Policy on Education (NPE) in Nigeria has among its objectives the acquisition of appropriate skills, abilities and competencies, both mental and physical, as equipment for the individual to live in and contribute to the development of society [1]. Apparently, this objective has implication for all Nigerians. Furthermore, section 1, sub section 5 of the NPE states categorically that Nigeria's philosophy of Education is based on the development of the individual into a sound and effective citizen. Other assertions

of the policy include the full integration of the individual into the community and the provision of equal access to educational opportunities for all citizens of the country at the primary, secondary and tertiary levels both inside and outside the formal school system.

Meanwhile, in Nigeria as the National Education Policy stipulates, students spend six years in secondary school, being three (3) years of Junior Secondary School (JSS) and three (3) years of Senior Secondary School (SSS). At the end of JSS, students sit for both the Basic Education Certificate Examination (BECE) organized by the National Examination Council of Nigeria (NECO) at the national level and at the State level the Resource Education Centre Examination (RECE) as prerequisites to proceed to SSS at the end of which it is mandatory to undertake and pass the West African School Certificate examination (WASCE) organized by the West African Examination Council (WAEC) or the Senior School Certificate Examination (SSCE) by the National Examination Council of Nigeria

\* Corresponding author:

hajiamairoipadeola@gmail.com (Mairo Hamid Ipadeola)

Published online at <http://journal.sapub.org/edu>

Copyright © 2017 Scientific & Academic Publishing. All Rights Reserved

(NECO) both registered for with a minimum of eight core subjects the first of which is English Language obtained from either or both of the examinations. On the whole, students leaving secondary school and applying for admission to the tertiary level including the Universities, Polytechnics, Mono-techniques and Colleges of Education must have five credit passes in relevant subjects, which again include English Language to qualify even after attaining the required cut off marks at the Unified Tertiary Matriculation Examination (UTME).

So far, every citizen of Nigeria needs to satisfy the same requirements for advancement in education from the secondary to the tertiary level, thus the need to create equal access to the educational instruction and examinations preparations at the secondary level.

## 2. Statement of the Problem

With the attainment of a credit pass in English Language being a standard requirement to gain entry into tertiary level education in Nigeria and Reading comprehension being a compulsory question, the hearing impaired may be disadvantaged in the preparation for SSCE examination in English Language because although they see and can read the questions as well as answer them during the examination, they might not have the same access to understanding the Reading Comprehension passages in the English Language examination like their hearing colleagues.

Going by the status quo, the hearing impaired are not given any special consideration in the conduct of any public or high stake examination in any way in Reading Comprehension. For instance, no provision is made for an interpreter or any shortcomings whereas; it is fact that they are also challenged like the blind for whom some provision is made in recognition of their condition.

## 3. Aim and Objectives of the Study

The aim of this study is to ascertain the need for a provision to be made by the National Examination Council of Nigeria (NECO) for the hearing impaired sitting for SSCE with the following objectives:

- To explore the impact of signing of Reading Comprehension to hearing impaired students taking the SSCE examination.
- To ascertain the disparity in the mean scores of the hearing impaired students while taking the SSCE examination in reading comprehension between the sign based and sign based approaches.

## 4. Research Questions

This paper sought answers to the following research

questions:

- Does signing translate to a higher understanding of Reading Comprehension passages to hearing impaired students?
- Could the hearing impaired score higher marks with the intervention of the signing of a Reading Comprehension passage?

## 5. Hypothesis

There is no significant mean difference in the performance of students with hearing impairment who sat for paper based and sign based examination of Reading Comprehension.

## 6. Methodology

Quasi-experimental research design was used in the study, two group pretest-treatment- posttest design whereby the entire populations of eighteen (18) students with hearing impairment (HI) were randomly assigned into two groups (A&B), Group A and B with nine (9) students each forming control group and experimental group. Meanwhile, all eighteen (18) students were given same pretest (O) and group A was given post test with treatment of paper base while group B was given treatment of sign base (X) before posttest (O).

## 7. Sample and Sampling Technique

The samples of study were drawn from Government Technical School Malali –Kaduna. The school is the only government school in Kaduna that accepts hearing impaired student into senior secondary. As inclusive school the populations of special need students are not much compared to other normal children. The universal sampling technique was used to include the entire population of Senior Secondary (SS3) students HI only of Government Technical School Malali –Kaduna, Nigeria for the 2015/2016 an intact group for the study. The sample comprised of nine students in carpentry, electrical and electronics class as experimental group and nine students in welding and building class as control group.

## 8. Instrument

Five past examination questions of NECO on Reading Comprehension randomly selected for pretest and posttest were used for the interventions. The Senior School Certificate Examination (SSCE) by the National Examination Council of Nigeria (NECO) is accredited by its certified board which guarantees the validity and reliability of the instrument.

## 9. Methods of Data Collection

Verbal consent was obtained by the principal of Government Technical School Malali –Kaduna to carry out the study. The study was carried out within the school premises. The experimental group was exposed to three weeks of practicing the five passages of English reading comprehension using Sign Exact English (SEE). The passages were signed to the students by a sign language interpreter; the intervention was one hour of three days lesson within a week for three weeks. The pretest was administered two days before the treatment began while the post test was administered one day after treatment. The pretest and posttest was for the duration of forty five (45) minutes. English Reading Comprehension passages adapted from past NECO SSCE examination questions were administered to all eighteen students in a classroom within the school premises by an invigilator. The scripts were collected and handed over to a certified NECO marker of

English Language and then the scores were collated and handed over to the researchers for analysis.

## 10. Data Analyses

**Table 1.** Demographic Variable of respondents

| Gender | Pri-lingual | Post lingual | Total | Age range |
|--------|-------------|--------------|-------|-----------|
| Male   | 2           | 8            | 10    | 23        |
| Female | 3           | 5            | 8     | 20        |
| Total  | 5           | 13           | 18    |           |

Among the eighteen students that participated in the experiment, ten (10) were male of which two (2) were pri-lingual and eight (8) were post lingual, while the female students were eight (8) with three (3) pri-lingual and five(5) post lingual hearing loss. The age ranges for male and female students were 23 and 20 respectively.

**Table 2.** Paired sample t-test

| Pair 1 test<br>scores pretest<br>– scores post | Paired difference |                       |                    |                                       | t    | df | Sig.<br>(2-tailed) |
|------------------------------------------------|-------------------|-----------------------|--------------------|---------------------------------------|------|----|--------------------|
|                                                | Mean              | Standard<br>deviation | Std. Error<br>mean | 95% confidence<br>interval difference |      |    |                    |
|                                                |                   |                       |                    | Lower upper                           |      |    |                    |
|                                                | 1.22              | 5.847                 | 1.378              | -1.685 4.130                          | .887 | 17 | .388               |

The result of the t-test indicates that the p-value ( $p \geq .05$ ) is higher than calculated t (0.887), therefore differences are not significant and the null hypothesis is accepted. The result indicate that we fail to reject the hypothesis and the study concludes that, there is no significant mean difference between the performances of hearing impaired students of Government Technical School Malali –Kaduna who sat for paper based and sign based examination of Reading Comprehension after intervention of three weeks practice with sign exact English, using American sign language.

## 11. Discussion

Reading comprehension difficulties has generally been exhibited by deaf children [2] and educators are trying various approaches to overcome both encoding and decoding difficulties. This was the first study of the influence of sign language in senior school certificate examination on reading comprehension for students with hearing impairment in Nigeria. The result of the study indicate no significant difference between hearing impaired students that sat for paper based and sign based examination of reading comprehension after three weeks intervention. [3] also carried out quasi experimental study on effects of total communication on academic performance, the result of the showed no significant difference between the mean achievement score of the treatment and control group and no significant influence of gender on the academic achievement or on the use of total communication. According to [4] quasi

experiment with deaf children in primary school in Ogun state, the result also indicate that there was no significant effect of captioned video instruction or gender difference on hearing impaired students' performance in English Language .p8. A study on association between sign language phonological awareness and word reading in deaf and hard-of-hearing children by [5] found the disparity that deaf and hard of hearing children with good sign language phonological awareness are better at reading words but measure of spoken word depend highly on individual cognitive skills p.18. Also [6] studied Comprehension of texts by deaf elementary school students in sweden, they found out that neighter the type of assitive technology, the age of child at time of fitting or activation nor the socioeconomic status or school stage could predict the presence or absence of difficulties in text comprehension. P.156.

Generally speaking sign language for most deaf children from hearing parents in Nigeria is learned from siblings at the age of six when they enter primary school. The type of sign language they learn from their peers are crude signs and teachers in these schools are not proficient in American sign language [7] to be able to prepare pupils for efficient word recognitions and ultimate linguistic comprehension for reading comprehension. Though there are evidences of several instructional approach that support reading development [8] and the development of Sign Exact English (SEE) seems to address the need to visually represent all words in their grammatical accurate ways [9]. Thus only

beneficial for deaf and head of hearing (DHH) fitted with hearing aids or DHH with very strong background in language development.

## 12. Implications of Finding

Even though the mean result of the experiment showed a slight impact of sign on reading comprehension (.33) for pretest and post test, the overall results indicate that the use of sign has no major impact for the following reasons:

- The Sign Exact English used for the treatment created a lot of distraction to students because many of them were not familiar with the new signs being that most words were finger spelled.
- The reading comprehension passages used contained ambiguous words which made the exact meanings implied in the passages difficult for students with hearing impairment to understand.
- The students were more conversant with local signs due to the lack of a sign exact language interpreter in the school.
- Also, the inconsistency of the English Reading Comprehension questions used for both pretest/ treatment/ posttest resulted to the sample members having too many new words to be learned within a short time.
- The different variation of sign language used among hearing impaired in Government Technical School Malali –Kaduna was not American Sign Language or sign exact English.

## 13. Recommendations

The following recommendations may yield a more positive result:

- Signing the Reading Comprehension passages with the local sign language which students are more familiar with rather than the sign exact language.
- Extending the duration of the duration of treatment beyond three weeks.
- Allowing a little more time for the duration of writing the test by the experimental group.
- Using local signs the hearing impaired students of Government Technical School Malali –Kaduna understand.
- The making scheme for hearing impaired should consider their deficiencies in lexis and structure of English language.

## REFERENCES

- [1] Federal Republic of Nigeria. (2004). *National Policy on Education (4th Ed.)*. Lagos: Nigerian Educational Research and Development Council Press.
- [2] Kyle, F. E., & Cain, K. (2015). A Comparison of Deaf and Hearing Children's Reading Comprehension Profiles. *Topics in Language Disorders*, 35(2), 144.
- [3] Ezema, E. O. (2013). *Effect Of Total Communication on Academic Achievement of Pupils With Hearing Impairment In Enugu State*. (Degree of Masters of Education (M.Ed) In Special Education.), Department of Educational Foundations (Special Education) University of Nigeria., Nsukka, Nigeria. Retrieved from [http://www.unn.edu.ng/publications/files/images/Ezema%20Edith%20M.ED\\_\\_0.pdf](http://www.unn.edu.ng/publications/files/images/Ezema%20Edith%20M.ED__0.pdf).
- [4] Omoniyi, T., & Oluniyi, E. A. (2014). Impact of Captioned Video Instruction on Nigerian Hearing-Impaired Pupils' Performance in English Language. *Academic Journal of Interdisciplinary Studies*, 3(6), 411.
- [5] Holmer, E., Heimann, M., & Rudner, M. (2016). Evidence of an association between sign language phonological awareness and word reading in deaf and hard-of-hearing children. *Research in developmental disabilities*, 48, 145-159. doi:10.1016/j.ridd.2015.10.008.
- [6] Barajas, C., González-Cuenca, A. M., & Carrero, F. (2016). Comprehension of texts by deaf elementary school students: The role of grammatical understanding. *Research in developmental disabilities*, 59, 8-23. doi:10.1016/j.ridd.2016.07.005.
- [7] Sibanda, P. (2015). Analysis of sign language proficiency among teachers of the deaf in primary schools in Bulawayo (Zimbabwe): Implications for learning and inclusion. *Scientific Journal of Pure and Applied Sciences*, 4(9), 157-165.
- [8] Ye, W., & Williams, C. (2014). Are We Hammering Square Pegs Into Round Holes? An Investigation of the Meta-Analyses of Reading Research With Students Who Are D/Deaf Or Hard Of Hearing And Students Who Are Hearing. *American Annals of the Deaf*, 159(4), 323-345.
- [9] Stryker, D., Nielsen, D., & Luetke, B. (2015). *Signing Exact English: Providing a Complete Model of English for Literacy Growth*. Paper presented at the Northeastern Educational Research Association. (NERA) Annual Conference, University of Connecticut, DigitalCommons@UConn.