

Effects of Cloze Instructional Approach on Senior Secondary School Students' Achievement in Igbo Language Reading Comprehension

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Abstract

This study assessed the effects of cloze instructional approach on senior secondary school students' achievement in Igbo language reading comprehension. The study utilized a quasi experimental research design of the pretest posttest non-equivalent control group design. The study was conducted in Abakaliki education zone of Ebonyi State of Nigeria. A total of eighty nine research subjects from two intact classes of senior secondary class 1 students were used for the study. The treatment group was taught Igbo language using the cloze instructional approach while the control group was taught the same topics using the conventional class discussion method. Igbo Language Reading Comprehension Test (ILRCT) was used to collect data for the study. Data were analyzed both descriptively and inferentially. Research questions were answered using the adjusted mean while the hypotheses were tested at 95% confidence level using the Analysis of Co-Variance (ANCOVA). Results reveal that the cloze instructional approach is superior to the conventional discussion approach in fostering students' achievement in Igbo language reading comprehension. It was also revealed that although the mean scores of male students taught Igbo language reading comprehension using the cloze approach is higher than those of their female counterparts in the same group, the difference is not statistically significant. In addition there is no significant interaction between method and gender on students mean achievement in Igbo language reading comprehension. This implies that the cloze instructional approach is cost effective in teaching both male and female students

Key Words: Readability, Comprehensibility, Cloze instructional approach, quasi experiment.

Introduction

“Cloze” which is pronounced like the verb “close” originated from the Gestalt theory of CLOSURE in psychology founded by Max Wertheimer et al in the 1880s (Ene, 2002). According to Max Wertheimer it depicts the natural tendency of human beings to perceive unfinished or incomplete figures as complete, implying that they fill in the gaps in broken patterns with their mental framework. According to Ene, (2002) patterns are linguistic in nature. She noted that the man credited with being the first to design the new classic test called a cloze test is Wilson Taylor in 1953. Taylor (1953) viewed a cloze unit as any single occurrence of a successful attempt to reproduce accurately a part deleted from a message by deciding from the context that remains what the missing part should be.

Igbo language generally refers to the language of a particular tribe in Nigeria – the Igbo tribe of the South Eastern Nigeria. The South Eastern Nigeria includes five States in Nigeria (Anambra State, Enugu State, Abia State, Imo State, Ebonyi State) and a substantial part of Delta State, Rivers State, and some communities in Cross Rivers State and Kogi State of Nigeria.

Language is a portmanteau word englobing the entirety of a people's way of life and this ways of life encompass dimensions that are material and non material. It includes the way a people perceive and organize themselves and how they perceive the world and people around them.

Whorf's (1989: 5) hypothesis states that "all observers are not led by the same physical evidence to the same picture of the universe, unless their language and cultural background are similar or can in some ways be calibrated". Eshiet (1991) and his colleagues did not realize that although Whorf tied perception of the physical universe to language structure he was very explicit in stressing the role of culture in overall societal development. As a means of expressing culture and practices languages maintained a prime position in Nigerian Educational system. There is great emphasis on Nigeria languages in the school system. Scholars were also encouraged to develop resources that facilitate the teaching and learning of these languages to ensure the full realization of the objectives of language instruction in Nigerian educational system.

Unfortunately, some of the resources provided for effective teaching and learning of languages in schools are deficient in a number of attributes. One of such attributes is the readability of the textbooks. Readability and comprehensibility are two sides of a coin. A reading discuss cannot be said to be understandable if it is not readable (Ene, 1998).

Ene (1998) argued that learning depends on the comprehension and retention of new information. As such any approach designed to bridge the gap in readability and achievement in Igbo Language in the Nigerian education system should take into consideration the perceptual framework of the learners.

Although Igbo language is the mother tongue and the first language of an average Igbo child, we should not lose sight of the fact that urbanization, the adoption of English Language as the official language of communication and also multiculturalisms in our schools has made it impossible for the Igbo child to develop fundamental Igbo language skills. This is true because immediately an Igbo child attains the age of three (an age when he/she begins to appreciate the main ingredients of the language) he/she is incidentally introduced to the day care services or pre-nursery school where the official means of communication automatically changes to English language. To worsen the matter, some zealous parents even starts introducing English language to their children before the age of one thereby transforming the child to an English baby and alienating them completely from Igbo language and its intricate culture. The implication of this scenario is that Igbo language becomes an alien culture to an Igbo child. Consequently the child from the cradle begins to experience difficulty in reading any material written in Igbo Language.

Readability refers to the assessment of the difficulties that readers of a certain level of skills may have in reading a piece of connected written discourse or text (Abonyi and Oluikpe 2013). It generally tends to portray the effectiveness in communication between the author of a written text and the readers. According to Dale and Chall (1988) readability is the sum total including interactions of all those elements within a given piece of printed materials that affect the success which a group of readers have with it. It is generally a function of interest, fluency and comprehensibility.

The WAEC chief examiner for Igbo language attributed the poor performance in senior school certificate examination to poor readability and comprehensibility of textual passages (WAEC, 2011, WAEC, 2012). The chief examiner also pointed out that students find it difficult to read long passages and most woefully fail questions drawn from Igbo literature books because of their inability to read and grasp the textual components of the books. In addition, there is also mass failure in simple comprehension passages that characterize Senior School Certificate Igbo Language examinations. It was further highlighted that although the examination passages were of the right level of difficulty considering the readability status, candidates' performance was generally poor.

All these are enough evidence that reading comprehension is a major problem in Igbo language education that should not be taken lightly if achievement in the subjected is expected to improve.

Even though many educators (Abonyi and Oluikpe, 2013; Ene, 1998; Bortnick and Lopardo 1976) believe that 'cloze' is also useful as a teaching technique, and improve reading comprehension, it would appear that its efficacy in Igbo language has not yet been empirically validated.

It is against this background that the researcher deems it explicitly necessary to experiment on the effects of the cloze instructional approach on secondary school students' achievement in reading comprehension.

Purpose of the study

The purpose of this study is to determine the effects of the cloze instructional procedure on the achievement of secondary school students' in reading comprehension. This study specifically:

- (1). determined the effects of the cloze instructional approach on secondary school students' achievement in Igbo Language reading comprehension;
- (2). assessed the achievement of males and females that taught Igbo Language reading comprehension with the cloze approach;
- (3). determined the interaction of method and gender on students achievement in Igbo Language reading comprehension.

Scope of the Study

This study was limited to the investigations of the effects of the cloze approach to instruction on students' mean achievement in Igbo Language reading comprehension. The study will be conducted in Ebonyi Central Education

zone of Ebonyi State of Nigeria. The choice of Ebonyi State is based on the researcher's clear understanding of the dialectical resonance the traditional Abakaliki Language vis-à-vis the conventional Igbo language. In terms of the content scope both the fixed and variable ratio cloze approach was utilized.

Research questions

The following research questions guided the study:

1. What is the effect of cloze instructional approach on students mean achievement in Igbo Language reading comprehension?
2. What is the mean reading comprehension scores of male and female students taught Igbo Language using the cloze approach?
3. What is the interaction effect of gender and instructional approach on students' mean achievement in reading comprehension?

Hypotheses

The following null hypotheses were tested at 95% confidence level.

HO₁: There is no significant difference in the mean reading comprehension scores of students taught Igbo Language reading using cloze instructional approach and those taught Igbo reading using the conventional method.

HO₂: There is no significant difference in the mean Igbo Language reading comprehension scores of male and female students taught using the cloze approach.

HO₃: The interaction effect of gender and instructional approach on students mean Igbo reading comprehension scores is not statistically significant.

Method

The design for this study is a quasi-experimental research design. The specific design the researcher utilized is a pretest posttest non-equivalent control group design. In this design there were both treatment and control groups. In this design also there is no random assignment of subjects. Intact classes were used. The design is represented thus:

$$\frac{Y^b XY^a}{Y^b \approx XY^a}$$

where Y^b = Pre-test

Y^a = Post-test

X = Treatment (Cloze instructional approach)

~X = Conventional Method (Class discussion approach)

The study was conducted in secondary schools in Abakaliki education zone of Ebonyi State of Nigeria. The researcher used coeducational school only. Two secondary schools were drawn from the coeducational secondary schools in the zone through simple random sampling. Out of the two secondary schools that were used for the study, one was assigned to the treatment group while the other was assigned to the control group through a simple toss of coin. In each school one intact class of Senior Secondary Class I students was drawn for the study so that for the two secondary schools two intact classes were used (one for the treatment group and the other for the control group). In the treatment group a total of forty-seven students (21 males and 26 females) were in the intact class while for the control group a total of forty-two students (16 males and 26 females) were used. In all, therefore, a total of eighty-nine students (37 males and 52 females) were used for the study.

Igbo Language Reading Comprehension Test was used for data collection. This test has a total of five comprehension passages that were drawn from the following Igbo Language Literature books:

- (a). Isi Akwu dara n's ala by Tony Ubesie
- (b). Uwadiogwu by N.B. Obodo
- (c). Okpa aku eri eri by Ude Odilora

The Igbo Language reading comprehension Achievement Test was validated by specialists in Igbo language and Measurement and Evaluation. During the face validation the test was scrutinized in terms of relevance, general test format, suitability and clarity. The researcher also subjected the instrument to test of reliability using both the measure of stability and inter rater reliability approach. To assess the stability of the instrument, the researcher employed the test-retest procedure. Using the Pearson's Product Moment correlation approach the Igbo Language Reading Comprehension Test yielded a stability index of 0.72 while the inter rater reliability test using the Kendal's W yielded an inter rater reliability index of 0.67.

Experimental Procedure

The researcher developed two instructional packages for this study. The first instructional package is based on the Cloze instructional approach while the second package is based on the conventional method which is merely the classroom discussion approach. The two packages were drawn from the same curriculum content. The Cloze Instructional approach was used for treatment group while the conventional package was used for the control group. At the onset of the experiment, the subjects in both the treatment and control groups were given the pre-test. After the pre-test the regular Igbo language teachers commenced the experiment in their respective schools adhering strictly to the lesson procedure that was developed from the instructional package during the pre-experimental training. The experiment was conducted during the normal school periods in accordance with the school timetable. At the end of the experiment that lasted for six weeks the posttest was administered to the subjects in the two groups. Research questions were answered using mean and standard deviation, while the hypotheses were tested at 95% confidence level using the Analysis of Co-variance (ANCOVA).

Control of Extraneous Variable

The following procedures were adopted by the researcher to ensure that extraneous variables, which may influence the internal validity of the findings, are controlled:

(i). Instructional Situation Variables

The researcher issued out instructional guides for teachers in each of the two groups in order to ensure strict adherence to the tenets of the instructional packages in each of the groups. In order to minimize errors, which may arise as a result of teacher difference, the researcher organized a pre-experimental training for the teachers that were used for the study. Separate trainings were organized for teachers in the two groups. The purpose of the training is to establish uniform instructional standard among the teachers.

(ii). Inter-group Variables

Intact classes were used for this study. This implied that initial equivalence cannot be achieved for the research subjects in the two groups. In order to control the errors that may arise as a result of the non-equivalence, the researcher employed Analysis of Co-variance for data analysis.

(iii). Subject Interaction

The researcher did not select treatment and control groups from the same school to ensure that the students in the treatment and control groups do not exchange ideas and information. This is to reduce errors arising from interaction among the research subjects in the two groups.

(iv). Testing effect

The same comprehension passages were used for pretest and posttest. In order to eliminate errors of memorization of previous passages the researcher reshuffled the comprehension passages of the posttest. In addition papers of different colours were used for the pretest and posttest.

Results

Research question 1

What is the effect of cloze instructional approach on students mean achievement in Igbo Language reading comprehension?

Data collected with the Igbo language reading comprehension passages for the treatment and control groups were used to answer this research question. Summary of data analysis is presented in Table 1.

Table 1: Mean Igbo language reading comprehension achievement scores of students taught Igbo language using the cloze instructional approach and those taught with the conventional method.

Groups	N	Adjusted Mean	Std Dev.
Treatment Group (Group Taught with cloze Approach)	47	55.96	8.75
Control Group (Group taught with conventional method).	42	41.64	8.96

Summary of data analysis presented in Table 1 reveals that the group taught Igbo Language reading comprehension using the cloze instructional approach performed better than the group that was taught the same unit using the conventional discussion approach. The group taught using the cloze approach had a mean reading comprehension score of 55.96 while those in the control group had a mean of 41.64.

Research question 2

What are the mean reading comprehension scores of male and female students taught Igbo Language using the cloze approach?

Data obtained with the Igbo language reading comprehension passages for male and females in the treatment group only was used to answer this research question. Summary of result is presented in Table 2

Table 2: Mean Igbo Language reading comprehension scores of males and females taught Igbo language using the cloze instructional Approach

Gender Categories	N	Adjusted Mean	SD
Male Students	21	57.90	7.74
Female Students	26	54.38	9.34

Result of data analysis summarized in Table 2 indicates that cloze approach yielded higher mean scores for males than females although the difference is not very pronounced. While the mean score for males is 57.90 that of their female counterparts is 54.38.

Research question 3

What is the interaction effect of gender and instructional approach on students' mean achievement in reading comprehension?

Data obtained with the Igbo language reading comprehension passages for male and females in both the treatment and control groups were used to test for interactions. Summary of result is presented in Table 3.

Table 3: Summary of interaction of gender and teaching method on students' mean achievement scores in Igbo Language reading comprehension

Gender Groups	Adjusted Mean for Treatment Group	Adjusted Mean for Conventional Method
Males	57.90	45.00
Females	54.38	39.58

As shown in Table 3 the treatment group (group taught with the cloze instructional approach) is superior to the conventional (discussion) method at the two levels of gender implying that there is no interaction between method and gender on students' achievement in Igbo language reading comprehension.

Hypotheses

The following null hypotheses will be tested at 95% confidence level.

HO₁: There will be no significant difference in the mean reading comprehension scores of students taught Igbo Language reading using cloze instructional approach and those taught Igbo reading using the conventional method.

HO₃: The interaction effect of gender and instructional approach on students mean Igbo language reading comprehension scores will not be statistically significant.

Data collected with the Igbo language reading comprehension test for the treatment and control groups were used to test hypotheses 1 and 3. Data obtained for the pre-test and post-test were used in this analysis. Summary of data analysis is shown in Table 4.

Table 4: Analysis of Co Variance for Students overall Igbo language reading comprehension achievement scores by teaching methods and by gender with interaction effect

Sources of variation	Sum of Squares	Df	Mean Squares	F _{cal}	F _{cv}
Covariates	4221.009	1	4229.009	106.039	
Main Effects	3788-942	2	1894.471	47.591	
Teaching Methods 2 – Way Interaction	3591.181	1	3591.81	90.214	3.92
Teaching Methods & Gender	4.511	1	5.511	0.113	3.92
Explained	8014.553	4	2003.334		
Residual	3343.807	84	39.807		
Total	11358.360	88	129.072		

Summary of data analysis in Table 4 indicates that for first hypothesis the calculated F-value is 90.214 while the critical value at 95% confidence level is 3.92. The decision rule is to reject the null hypotheses when the calculated value exceeds the critical value at a given probability level. Since the calculated value (90.214) is greater than the critical value (3.92) at the alpha level of 0.05 the researcher rejects the null hypothesis and concludes that there is significant difference in the mean reading comprehension scores of students taught Igbo Language reading using cloze instructional approach and those taught Igbo reading using the conventional method.

On the test of significance of interactions between methods and gender on students mean achievement in Igbo language reading comprehension, summary of result in Table 4 shows that the F.calculated value (0.113) is less than the F.critical value (3.92) at the given alpha level. The researcher, therefore, upholds the null hypothesis and concludes that the interaction effect of gender and instructional approach on students mean Igbo language reading comprehension scores is not statistically significant.

HO₂: There will be no significant difference in the mean Igbo Language reading comprehension scores of male and female students taught using the cloze approach.

Data collected with the Igbo language reading comprehension passages for males and females in the treatment group only was subjected to the Analysis of Co-variance. Summary of result is shown in Table5

Table 5: Analysis of Co Variance for Students Overall Igbo Language reading comprehension Achievement scores for treatment group only by gender

Sources of variation	Sum of squares	Df	Mean Squares	F	F _{cv}
Covariates	1994.649	1	1994.649	59.082	
Main Effects					
GENDER	41.787	1	41.787	1.238	4.08
Explained	2036.436	2	1018.218	30.160	
Residual	1485.479	44	33.761		
Total	3521.915	46	76.563		

Summary of result in Table 5 indicates that the F.calculated value is 1.238 while the F.critical value at 95% confidence level is 4.08. Since the calculated value is less than the critical value the researcher upholds the null hypothesis and concludes that there is no significant difference in the mean Igbo Language reading comprehension scores of male and female students taught using the cloze approach.

Summary of results

The results obtained from the data analysis indicate that:

- i. The cloze instructional approach is superior to the conventional discussion approach in fostering students' achievement in Igbo language reading comprehension
- ii. Although the mean scores of male students taught Igbo language reading comprehension using the cloze approach is higher than those of their female counterparts in the same group, the difference is not statistically significant.
- iii. There is no significant interaction between method and gender on students mean achievement in Igbo language reading comprehension. This implies that the cloze instructional approach is cost effective in teaching both male and female students.

Discussion

Results of data analysis presented in Tables 1 and 4 explain the effect of cloze instructional procedure on students' achievement in Igbo language reading comprehension. As shown in Table 1 students taught Igbo language reading comprehension using the cloze approach has a mean reading achievement score of 55.96 and a standard deviation of 8.75 while those taught reading using the conventional approach had a mean of 41.64 with standard deviation of 8.96. This implies that the cloze approach is more effective than the conventional approach in facilitating Igbo language reading comprehension among senior secondary school students. The test of significance of the difference further revealed that the difference between the two groups is statistically significant in favour of the cloze instructional approach. This result is consistent with Taylor's (1953) earlier argument in favour of the cloze approach. His theoretical consideration came from the concept of total language context, which was anchored on a research finding that language behaviours are dependent on total context (Ene, 2002). The findings of this study also agree with that of Osakwe (1997) and Ene (2002) who argued that concepts occur in logical relationships and are better perceived as a whole. As such it is not unusual that the cloze approach facilitates Igbo language reading comprehension more than the conventional approach. This, according to Ene (2002) is so because the ability to fill the gaps in a passage invariably depends on the ability of the learners to make genuine analysis of basic concepts in the passage so as to form a conceptual whole that determine the general comprehensibility of a passage.

On the issue of gender and cloze approach the result of data analysis indicate that there is no remarkable difference in the mean achievement scores of male and female students taught Igbo language reading comprehension using the cloze instructional approach. It is therefore apparent that the cloze approach is effective for both males and females. The test of interaction also reveals no significant interaction between method and gender on students' achievement in Igbo language reading comprehension.

The findings of this study failed to agree with Wolman (2010) and Ittelson and Cantril (2009), who earlier observed in their classical postulations on cloze that the cloze approach, going by its psychological orientation might exert differential impact on male and females. Their argument is that cloze has to do with mental disposition mechanism and since there are pronounced difference in psycho cognitive status of male and females their abilities to form wholes from discrete units may vary. This, in their own feelings, tends to suggest that that the close procedure is expected to favour one gender category more than the other. This study agrees with Ene (2002) on the issue of gender. According to Eneh (2002) the perceptual differences between male and females are very transient and does not manifest prominently at maturity.

Conclusion and Recommendations

This study has so far provided a fair account of the cloze instructional approach with respect to readability in Igbo language classrooms. Enough evidence was mustered to support the claims that cloze approach is superior to the convention instructional methods in enhancing Igbo language reading comprehension at the secondary school level. Based on these glaring evidence the researcher wishes to recommend that the cloze approach be adopted in teaching Igbo language reading comprehension at the secondary school level. In the same vein curriculum materials in Igbo language should be adjusted to suit the cloze instructional approach while the Ministries of Education should intensify efforts at retraining Igbo language teachers on the applications of the cloze procedures in the classroom.

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