

Readability of Language Textbooks Prescribed for Junior Secondary Schools and Students' Performance in Reading Comprehension in Bayelsa State, Nigeria.

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Abstract

This study, using a Descriptive Survey Design, investigated the readability of English Language Textbooks prescribed for Junior Secondary Schools and Students' performance in Reading Comprehension in Bayelsa State. The study involved a population of 1,500 Junior Secondary School Students, one English Language Textbook prescribed for Junior Secondary Schools and all the comprehension passages contained therein. The sample comprised 620 Junior Secondary Three (JS3) Students randomly drawn from Ten (10) Secondary Schools in Bayelsa State and Intensive English for Junior Secondary Schools (Books 3) written by Oluikpe, et al. Two instruments, namely the Fry Readability Graph and a Cloze Test on Reading Comprehension were used to collect data, while data were collected from the book through the application of the Fry Formula ratings converted into readability/grade level and students' performance in the Cloze Test and ranked into three categories to reflect the three levels of readability. Findings revealed that although, the prescribed English Language Textbook falls within the level of the students, yet most of the students read at frustration level. The implications of the findings were discussed and recommendations made.

Keywords: Fry Readability, Cloze Test, Descriptive Survey Design

Introduction

Reading serves a wide range of purposes in the lives of different categories of people who are literate. In school, it is the basis for learning different subjects. Whatever, the aspect of life one is considering, one discovers that the ability to read efficiently enhances individual ability to function in an effective manner. According to Ituen (1998), a reader does not approach text merely for the purpose of reading the language itself but for a purpose other than reading the words on the page. Given the importance of reading, one understands why Macauley (1982) cited in Ituen (1998) considers as very unfortunate the failure of developing countries to give reading its rightful place in schools' programmes, unlike what obtains in many developed countries.

Readability, is defined by Ziriki (2009) as reading ease, especially as it results from a writing style. It is also said to be the reading difficulty level of a textbook in relation to the class for which it is meant. The readability level of a book therefore, is one of the factors that determine the understanding of a subject by the students. Readability, according to Frank (2006), can be used as a rough estimate for placing written material in appropriate grade levels. Similarly, Uchennah (2002) in a report on Readability of Secondary School English Language Textbooks, reiterated the effect of readability on such factors as vocabulary, sentence length and sentence complexity. He advised textbook writers and publishers to use various formula that have been developed and standardized to ensure that "what is produced for learners matches the learners".

Virtually all readability formulas rely on two variables; the ratio of short to long sentences in a passage. In other words, most readability formulas operate on the assumption that short words are easier to read than long words and also that short sentences are easier to understand than long sentences. It has however, been established that when materials are familiar to students, they can read even very long complex syntactic structures. Ziriki (2009) therefore, concludes that even though readability is concerned with the problem of making a match between reader and text, an accomplished reader is likely to be bored by simple repetitive words, while an accomplished reader will soon become discouraged by texts which he/she finds too difficult to read fluently. This is likely to happen when the text is poorly printed, contains complex sentence structures, contains long words and too much material containing entirely new ideas.

This study therefore, investigated the readability of English Language Textbooks prescribed for Junior Secondary Schools and Students' Performance in Reading Comprehension in Bayelsa State.

Statement of the Problem

Matching students' reading level to appropriate reading material is a difficult problem for many teachers. This is because the principle that students read most successfully if the reading material they are given matches their reading level is easy to accept but hard to use (Bloor, 1995). The importance of reading materials, especially prescribed textbooks in the school system need not to be overemphasized. This is because textbooks are a vital instrument for teaching and learning. Gilliland (1998) referred to textbooks as the books used as standard work for the study of a particular subject.

Students' ability to read effectively is related to a number of problems. There is first, the problem of spoken English. This centres on the inability of students to communicate their ideas effectively through standard English among themselves and between them and their teachers. Secondly in more specific terms, understanding the written words presents a very serious problem to most students (Kosemani, 1994). This is because students are deficient in reading skills.

After the child's completion of the primary education, he proceeds to the secondary level (i.e. the Junior Secondary School). At this level, one would have expected that much emphasis be given to the teaching of reading, as a continuation of what was taught in the Primary schools, but this is not the case. Consequent upon the inadequate preparation children have in reading in the primary school, they become poor readers at the Junior Secondary level (Kosemani, 1994 and Uchennah, 2002). This is a result of not matching students' reading level to appropriate reading materials (prescribed textbooks).

Through empirical findings, it is discovered that the ability to understand a passage depends on its readability. The easier the language used in writing a reading text, the better the comprehension rate (Uchennah, 2002).

The central problem of this research therefore, centres on investigating readability level of the English Language Textbook prescribed for as well as determining the students' performance in Reading Comprehension. This will be achieved, using the Fry Readability Graph and Cloze Procedure.

Research Questions

In order to make the design for investigation more specific, the following questions were formulated

1. Which English Language textbook(s) is/are prescribed for the Junior Secondary Schools in Bayelsa State?
2. What is the readability level of the prescribed textbook(s), using the Fry Readability Formula?
3. What is the level of students' performance in reading Comprehension using the Cloze Procedure?

Purpose of the Study

The specific purposes of this study were to;

- i. Identify the English Language Textbook(s) prescribed for Junior Secondary School Students in Bayelsa State.
- ii. Ascertain the readability level of the prescribed textbook(s), using the Fry Readability Formula,
- iii. Determine the levels of students' performance in Reading Comprehension, using the Cloze Procedure

Significance of the Study

The researchers have mentioned the importance of matching reading materials to the reading level of students. In the light of the above, this study is significant in that teachers would be able to identify some of the strategies used in teaching the prescribed English Language Textbooks. It will also enable teachers to have a knowledge of reading interest and tastes of students. Teachers would in addition, be able to determine the readability level of Junior Secondary English Language Textbooks and identify the reading problems and skills of their students.

The study will help supervisors of schools to sensitize the strategies used by teachers in teaching reading to students. It will also help parents to have an insight into their children's reading habits and finally assist government in assessing the type of English Language textbooks available before recommending them for use, bearing in mind, the ability and interest of the target audience.

Literature Review

Literature identifies several readability formulas. For instance, Burns, Roe and Ross (2006) say when teachers have determined the students' reading levels with tests, they can obtain an approximate idea of whether a textbook is appropriate by testing it with a standard measure of readability. They also outline several widely used readability formulas among which are the Spache Readability Formula, designed for primary grade books (Spache, 1966), Fry Readability Formula (1965), SMOG Formula (1969), FOG Index Formula (1952), and Cloze Procedure (1953). Suffice it to say that not all the Reading Formula would be treated here, but for the sake of this work, only the Fry Readability Graph (1965) and Cloze Procedure shall be attempted.

Fry (1965) quoted in Burns, Roe and Ross (2006) developed his own formula which he claimed did not require the use of long vocabulary and mathematical computations. He explained that the formula known as Fry's Graph has its own advantage in that, by using a chart, the teacher can

pencil his own criteria. The procedure involves counting the number of sentences and syllables in each hundred word samples and plotting on the graph the average number of syllables per hundred words. This method was popular because it was purposely designed to save time. The attempt to save time and effort make Fry's Graph achieve wide usage because of its convenience and ease of application. The following are the directions for computing Fry's Formula;

1. Select three 100-word passages from near the beginning, middle and end of the book
2. Count the total number of sentences in each 100-word passage, estimating to the nearest tenth of a sentence. Average these three numbers i.e. add together and divide by 3
3. Count the total number of syllables in each 100-word sample and average them for the three samples
4. Plot on graph the average number of sentences per 100 words. If it falls for instance within Oxford Reader 5, one can say that the book is about the same difficulty level as Oxford Reader 5.

Burns, Roe and Ross (2006) further assert that the teacher's first step in helping children to read content material is to be aware of the difficulty of the textbook assignments they make. Teachers therefore, must adjust their expectation for each student according to that student's reading ability, so that no child is assigned work in a book on his or her frustration level- that is, the level at which the material is so difficult that it will immediately be frustrating and the student will be unable to comprehend it. This is because, trying to read from a book that is too hard for them can prevent students from learning the content. In addition, if children are forced to try to read a book at the difficulty level, they may develop negative attitudes toward the subject, the teacher and even school in general. Hence students will probably learn best from printed material that is written on their independent levels, or the levels at which they read with ease and comprehension. They can also learn from textbooks written on their instructional levels, or the levels at which they read with understanding when given sufficient help by the teacher.

One way for the teacher to estimate the suitability of a textbook for students, according to Ziriki (2009) is to construct and administer a cloze test. According to her, it was for the assessment of readability that cloze test was first used. She described it as an empirical measure which uses the performance of students upon the text being measured to obtain the readability level, adding that it is a test constructed by deleting words from a selection and requiring students to fill in the blanks. Words to be deleted (cloze items) may be at random or by a mechanical procedure (every nth) where n is usually a number 5 or above. The term "Cloze" she further asserts was used with the notion of Gestalt closure in mind referring to the psychological tendency in humans to fill in gaps in patterns. Quoting Bormuth (1968), Burns, Roe and Ross (2006) outline the Cloze Procedure as follows:

1. Select a passage of appropriately 250 consecutive words from the textbook. The passage should be one the students have not read, or tried to read before.
2. Type the passage, leaving the first sentence intact and deleting every fifth word thereafter. In place of deleted words, substitute blanks of uniform length.
3. Give students the passage and tell them to fill in the blanks. Allow them all the time they need.
4. Score the test by counting as correct only the exact words that were in the original text. Determine each student's percentage of correct answers. If a student had less than 44 percent of the answers correct, the material is probably at his or her frustration level and is therefore too difficult. Thus, the teacher should offer alternate ways of learning the material. If the student had 44 to 57 percent of the answers correct, the material is probably at that student's instructional level, and he or she will be able to learn from the text if the teacher provides careful guidance in reading by developing readiness, helping with new concepts and unfamiliar vocabulary, and providing reading purposes to aid comprehension. If however, the student has more than 57 percent of the answers correct, the material is probably at that

student's independent level, and he or she should be able to benefit from the material when reading it independently.

5. A teacher using the percentage given here must count only exact words as correct, since the percentages were derived using only exact words. Synonyms must be counted as incorrect, along with obviously wrong answers and unfilled blanks. Because all the materials in a given textbook is unlikely to be written on the same level, teachers should choose several samples for a cloze test from several places in the book in order to determine the book's suitability for a particular child.

This present study will attempt to just the workability of the aforementioned formulae.

Methodology

The Survey Design was used in this study. The survey method involved direct contact with a personality, qualities or attributes, which are relevant to a specific investigation (Hassan, 1995; Ofo, 2002).

The population consisted of the following;

- i. All the English Language textbooks recommended by the Ministry of Education, Bayelsa State, for use in the JSS 3 class.
- ii. All the reading comprehension passages found in the textbook(s) in (i) above and
- iii. 1500 students in the JSS 3 Class in Bayelsa State

Two types of sampling techniques were employed; the simple random technique was used in selecting six hundred and twenty (620) JSS 3 students from ten (10) Basic Junior Secondary Schools, while the purposeful sampling technique was adopted in choosing the *Intensive English for Junior Secondary School* (Third Edition) written by Oluikpe, Obah, Otagburuagu and Onuigbo (2008) because it was discovered to be more commonly used. Because reading comprehension passages are normally provided in the textbook to cover the three terms of the school year, one comprehension passage was selected for each of the term's section. Thus, three passages were drawn from the book (one from the beginning of the book which is usually the first term; one from the middle which must be the second term, and the third towards the end, representing the third term. Three passages were thus selected and used for both the Fry and Cloze Tests.

Two instruments were used. For the textbook, the instrument used was the text-based readability formula (Fry Readability Graph) while the instrument used for measuring comprehension was the Cloze Test. The Fry Readability Graph was developed by Edward Fry in 1965 and since then it has undergone some revision. The version used in this study is the one whose reading level has been expanded to reach Grade level 17 instead of the former one that stopped at level 12. Its calculation is as follows:

1. Randomly select three (3) sample passage and count out exactly 100 words each, beginning with the beginning of a sentence.
2. Count out the number of sentences in the hundred words, estimating length of the fraction of the last sentence to the nearest one-tenth.
3. Count the total number of syllables in the 100-word passage.
4. Enter graph with average sentence length and average number of syllables.
(Burns & Roe, 1980; 275 cited in Umoh, 1999).

The Cloze Procedure was developed by Taylor (1953) (as cited in Umoh, 1999) and involves the deletion of every 5th word from reading passage. It involves the following procedure:

1. Select a set of materials used in your classroom
2. Delete every 5th word until you have about 50 deletions. Replace the deleted words with blanks of uniform length. No word should be deleted in the first sentence.
3. Ask the students to fill each blank with the exact word that has been depleted.
4. Count the number of correct responses. Do not count spelling mistakes as wrong answers.

5. Convert the number of right responses into percentage.

Interpretation of scores

Percentage Score	Reading Levels
57% is greater	Independent
44-56%	Instructional
Below 44%	Frustration

(Roe, Stodt & Burns, 1978:354 cited in Umoh, 1999)

Cloze tests are easy to conduct and score especially where the exact word scoring is adopted as it was in this case.

The three 100-word passages were selected from about the beginning, the middle and towards the end of the book and were restricted to only prose because readability measures are never used with poems and plays. The Fry Formula was applied to them. However, the actual administration of the cloze test was done through the help of the class teachers. The students were required to supply the missing words in the test paper. To ensure that they took the test seriously, they were told that the test would form part of their Continuous Assessment for the term. The test lasted one hour, thirty minutes. The cloze procedure of every 5th word deletion was applied to three passages in the book. Each passage had an estimate of two hundred (200) words long but 25 deletions were made instead of the prescribed 50 because the use of 25 deletions to achieve maximum reliability for cloze test was being attested to by Abdoerin (1989) and Bachinan (1985) cited by Umoh (1999). The total number of cloze was 3 with 75 deletion.

The data collected from the book through the application of the Fry Formula and Cloze Procedure were prepared as follows:

- Fry Formula ratings converted into readability/grade level.
- Students' performance in the cloze test was ranked into three (3) categories to reflect the three readability levels.

Results

The results obtained are as shown below:

Research Question 1: Which English Language textbook prescribed for Junior Secondary schools in Bayelsa State is the Intensive English for Junior Secondary Schools (2008) (3rd ed.) Written by Oluikpe, Bo, Obah, T. Y., Otagburuagu, E. J. and Onuigbo, S. M.

Research Question 2: What is the readability level of the prescribed textbook, using the Fry Readability Formula?

Findings reveal that the intensive English for Junior secondary Schools book 3 (2008) written by Oluikpe et al, fall within Grade Level 9 i.e. JSS 3, when the Fry Formula was applied.

The results are as shown in table 1 below:

Reading Passage	No. of Syllables	No. of Sentences
1.100 words	150	3.7
2.100 words	130	4
3.100 words	150	4.5

$430 \div 3 = 143$ $12.2 \div 3 = 4.1$ Level = 9 (JSS 3)

Research Question 3: What is the level of students' performance in Reading Comprehension, using the Cloze Procedure?

The results of the Cloze test on reading comprehension are as shown tabulated in Table 2 below:

No. of Students	Cloze Test Percentage Scores	Reading Level	Percentage Category
120	57% or greater	Independent	Above average
44-56%	44-56%	Instructional	Average
322	Below 44%	Frustration	Below average

Summary of Findings

The findings of the study reveal the following:

1. The English Language Textbook prescribed for Junior Secondary Schools in Bayelsa State is the Intensive English for Junior Secondary Schools (2008) (3rd ed.) Written by Oluikpe, B. O., Obah, T. Y., Otagburuagu, E. J. and Onuigbo S. M.
2. The readability level of the prescribed textbook, using the fry Readability Formula is 9 (JSS 3) yet most of the students read at the frustration level.
3. The results of the Cloze test on reading comprehension reveal that 120 students read at independent level, 178 students at Instructional level while 322 read at frustration level.

Discussion of Results

This study made use of three research questions. In examining the research question which sought to find out the prescribed English language textbook for Junior Secondary Schools in Bayelsa State, it was found out that the textbook is the Intensive English for Junior Secondary Schools (Third Edition, 2008) Written by Oluikpe et al. The attempt however, to determine the readability level of the prescribed English Language Textbook using the Fry Formula revealed that although the book falls within level 9 i.e. JSS 3, most students read at frustration level. The students' performance in reading comprehension, using the Cloze Test reveals that 120 students read at the independent level, 178 at instructional level while 322 students read at frustration level.

Conclusion and Recommendations

It has been demonstrated in this study that the English Language Textbook used by the JSS (3) Class is quite difficult for the students given their low performance in the reading comprehension passages culled from the book. Since this is the case, there should be nothing surprising concerning the children's poor performance in JSS Certificate English examinations. This is because of the important role textbooks play in the education of a child.

Based on the findings of this research, the following recommendations are hereby made with the hope that the situation may be improved:

1. Teachers using this book should, in the meantime, adopt some other measures of bringing the language of the books within the level of understanding of their students.
2. Since the book is seen to be difficult, the writers/publishers should revise them bearing in mind word difficulty and sentence complexity.
3. Since English is a second language in Nigeria which needs proper teaching and learning, books meant for its instruction in Nigerian Secondary Schools should be written at independent level. This is because our students' grasp of English does not yet have a firm base.
4. The Ministry of Education, Bayelsa State should revise the Book List they recommend for schools by dropping those books that are very difficult from the list. This notwithstanding, the presumed difficult books may be re-adopted after the necessary revisions must have been carried out.

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