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A CLOZE TEST ASSESSMENT OF NIGERIAN STUDENTS' READING
ABILITY, TEXT READABILITY, AND AN ASSESSMENT OF
INSTRUCTIONAL METHODOLOGY WITH IMPLICATIONS
FOR INSTRUCTIONAL DECISION-MAKING

presented by

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has been accepted towards fulfillment
of the requirements for

PhD degree in Curriculum

A handwritten signature in cursive script, appearing to read "Norman D. Anderson".
Major professor

Date June 14, 1977

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ABILITY, TEXT READABILITY, AND AN ASSESSMENT OF
INSTRUCTIONAL METHODOLOGY WITH IMPLICATIONS
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By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction

1977

4-1015631

ABSTRACT

A CLOZE TEST ASSESSMENT OF NIGERIAN STUDENTS' READING ABILITY, TEXT READABILITY, AND AN ASSESSMENT OF INSTRUCTIONAL METHODOLOGY WITH IMPLICATIONS FOR INSTRUCTIONAL DECISION-MAKING

By

Norman D. Anderson

Many educators recognize that the matching of instructional materials to the reading ability of students is crucial to their successful academic performance. This need is especially felt in a multi-lingual nation such as Nigeria where educational opportunities are now being extended to the masses.

The purpose of this study was to investigate this problem by measuring the readability of four textbooks with Cloze procedure testing. Nigerian students enrolled in five Assemblies of God ministerial training schools participated in the study in the spring of 1977. Each of 371 students took four tests, one on each textbook. Cloze scores were compared with an established range of multiple-choice criterion scores found in the research literature. The following levels of study were identified: frustration, instructional, and independent-study levels. The study also attempted to assess what teachers did to match instructional materials to the reading ability of their students and to determine what instructional strategies teachers used to

Conclusive statistical evidence of test validity was not established, but sufficient statistical grounds and evident scoring trends, by book and school, permitted some meaningful generalizations about the Cloze testing.

The International Correspondence Institute's independent study textbook was matched to a majority of the students for study on the instructional level. A small percentage of students' scores were in the independent-study level.

Faculty members in the schools used informal methods to determine readability of materials. Format considerations were primary in their choice of instructional materials. About one-half of the faculty used word lists and gave explanations of assignments to help students study and read more effectively.

The following recommendations were made: (1) utilization by teachers of Cloze testing for entrance and placement examinations and for assessment of readability of materials students are expected to read and study, (2) Cloze testing of books before adoption by the schools, (3) dissemination of useful instructional strategies for improving the teaching of reading, (4) a review of readability criteria of International Correspondence Institute's diploma level curriculum, and (5) development of sets of Cloze tests for other levels of ICI's curriculum and utilization of the findings to match materials to students' reading ability.

help their students better understand what they read and study.

The following research questions were proposed and answers sought by Cloze testing and a faculty and student questionnaire.

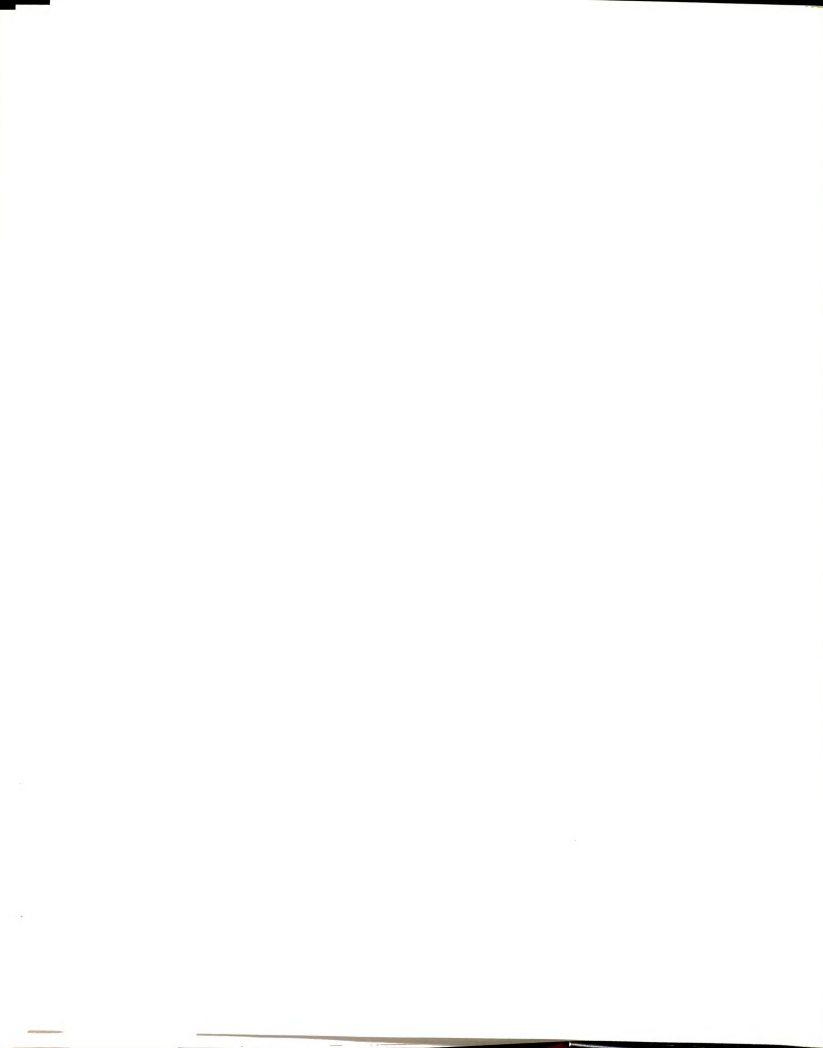
1. According to the Nigerian students' Cloze scores, are the four textbooks matched to the students' reading ability?

2. Is there a significant difference between Cloze scores of the four books tested when statistical controls are applied to the following: the school, the passage, and the deletion pattern?

3. To what extent is the International Correspondence Institute's independent-study textbook, Galatians and Romans, matched, in terms of readability, to the reading ability of the students who took the Cloze tests?

4. What instructional strategies do the teaching staffs of the Nigerian schools use to help their students better understand what they read and study?

The findings of the Cloze procedure testing seem to indicate that books two and four were the best matched to the students' reading ability. However, one third of these students' scores were in the frustration level of study. Book one and three were the least matched to students' reading ability.



DEDICATION

To my wife and family
for their understanding and continual help

ACKNOWLEDGEMENTS

Throughout the preparation of this dissertation every member of the guidance committee has added new dimensions to my personal and professional growth by their contributions and assistance in bringing this study to a conclusion. Dr. Ted Ward has been a continual inspiration and help as friend, teacher, advisor, and committee chairman.

This dissertation could not have been written without the cooperation of Morris Williams, Assemblies of God Field Secretary for Africa and the faculties and students of the five Nigerian schools where this investigation took place.

My wife, Judith, the leadership and staff of International Correspondence Institute of Brussels, Belgium, and friends from Wheaton, Illinois, were especially helpful in many aspects of thesis preparation, scoring of the Cloze tests, and final preparation of the manuscript.

To these teachers, mentors, and friends, many of whom worked long hours with me, my sincere appreciation and thanks is extended.

TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF FIGURES.....	vi
 CHAPTER I. THE PROBLEM AND ITS SETTING	 1
Purpose of the Study	2
Rationale for the Research	2
Background and Significance of the Problem	5
Research Questions	7
The Limits of the Study	8
The Subjects of the Study	9
Definitions of Terms and Abbreviations	10
Summary	13
Overview of the Study	15
 CHAPTER II. A REVIEW OF THE RELATED RESEARCH	 16
The Reading Problems of Nigerian Students as Learners of English as a Second Language ...	16
The Cultural Context of Testing	20
Research Related to the Cloze Procedure and to Readability	21
The Cloze Procedure	22
Studies with Cloze in ESL	23
Stubbs and Tucker (1973)	24
Bowen (1972)	26
Oller (1972)	26
The Cloze Procedure and Direct Testing	28
Concurrent Validity of the Cloze Procedure..	30
The Scoring and Criterion Problem	31
Bormuth (1967)	33
Bormuth (1968)	34
Rankin and Culhane (1969)	36
Anderson and Hunt (1972)	38
The Cloze Test — Deletion Patterns	41
Cloze Test Format	42
Readability Formulas	43
Faculty Questionnaire on Reading and Instructional Strategies	45
Summary	46

CHAPTER III. PROCEDURES AND SOURCES OF DATA	49
The Basic Method of Research	49
Schools and Subjects	50
Faculty and Students	52
Selection of Texts	52
Cloze Test Preparation	55
Deletion Pattern	56
Cloze Test Format	57
The Student Questionnaire	57
The Practice Cloze Exercise	58
The Cloze Testing	59
Scoring the Cloze Tests	60
Examples of Acceptable-Word	
Replacements	61
The Faculty Questionnaire	63
The Readability Measures	64
The Fry Readability Graph	64
The McLaughlin SMOG Readability	
Formula	64
Treatment of the Data	65
The Cloze Test Scores	65
Additional Data	66
Summary	66
CHAPTER IV. PRESENTATION AND ANALYSIS OF THE DATA ...	68
Validation of the Cloze Tests in Africa	69
Results from Testing the Instrument	70
Book 1	71
Book 2	71
Book 3	71
Book 4	73
The Student Questionnaire	77
Results of the Cloze Testing	79
The Levels of Study Graph	80
The Schools	80
Western Bible Institute - School One ..	80
Eastern Bible Institute - School Two ..	82
Mid-West Bible Institute - School Three	84
Central Bible Institute - School Four..	84
Central Bible College - School Five ...	84
<u>Galatians and Romans Independent</u>	
Study Textbook	88
Readability Measures	91

Faculty Questionnaire — Interview	92
Comparison of Results	99
Book 1	99
Book 2	99
Book 3	100
Book 4	100
Summary	101
 CHAPTER V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS. 104	
Summary of the Study	104
The Problem	105
The Schools and Subjects	106
Methods for Gathering the Data	107
Conclusions	108
Research Question One	108
Research Question Two	110
Research Question Three	111
Research Question Four	112
Recommendations and Implications of the Study ...	114
Implications of the Study for the	
Nigerian Schools	114
International Correspondence Institute	
and Diploma Program Courses	115
Suggestions for Further Research	117
 APPENDICES	119
 BIBLIOGRAPHY	158

LIST OF FIGURES

	Page
Figure 1. Levels of Study Graph	40
Figure 2. Book 2, <u>Declare His Righteousness</u> - Range of Cloze Test Scores: Central Tendency and Dispersion	74
Figure 3. Book 4, <u>Galatians and Romans</u> - Range of Cloze Test Scores: Central Tendency and Dispersion	75
Figure 4. School 1 - Range of Cloze Test Scores: Central Tendency and Dispersion	81
Figure 5. School 2 - Range of Cloze Test Scores: Central Tendency and Dispersion	83
Figure 6. School 3 - Range of Cloze Test Scores: Central Tendency and Dispersion	85
Figure 7. School 4 - Range of Cloze Test Scores: Central Tendency and Dispersion	86
Figure 8. School 5 - Range of Cloze Test Scores: Central Tendency and Dispersion	87

LIST OF TABLES

	Page
Table 1. Equivalent Cloze and Multiple-Choice Percentage Scores for Bormuth and Rankin and Culhane	37
Table 2. Comparable Multiple-Choice and Cloze Test Criteria	39
Table 3. Selection of Passages	55
Table 4. Cloze Test Code Numbering	56
Table 5. Examples of Acceptable-Word Scoring for Cloze Tests	62
Table 6. Tests Between Books by Deletion Pattern	70
Table 7. Analysis of Variance of Book, School and Deletion	72
Table 8. A Summary of Cloze Scores by Mean and Standard Deviation for Schools and Books..	76
Table 9. Range of Ages	77
Table 10. Galatians and Romans - Mean and Standard Deviation Results of Cloze Testing	89
Table 11. Galatians and Romans: A Summary of Numbers of Students by Year and Levels of Study..	90
Table 12. The Fry and SMOG Readability Measures ...	92
Table 13. Summary of Faculty Questionnaire on Reading and Instructional Strategies	93

LIST OF APPENDICES

Appendix A.	A Comparison of the U.S. and Nigerian Educational Systems	120
Appendix B.	Student Questionnaire	122
Appendix C.	Practice Cloze Exercise	124
Appendix D.	Sample Cloze Testing	126
Appendix E.	Faculty Questionnaire	135
Appendix F.	Readability Measures	138
Appendix G.	Sample Cloze Test Format "Apologetics".	143
Appendix H.	Student Characteristics	145
Appendix I.	Additional Data Cloze Procedure Scoring	150
Appendix J.	Cases Dropped From Sample	156

CHAPTER I

THE PROBLEM AND ITS SETTING

The problems of language learning and linguistically different learners are a preoccupation of many nations, including Nigeria. In fact, today this largest of African nations has embarked on a national program of compulsory primary education through which children are being assembled to study in every imaginable kind of place, including shady spots under trees. They are learning their ABC's in what, to them, is essentially a foreign language, English.

As awareness needs to be created of the potential value of a relatively new way to assess reading and reading materials for these and other learners of English in Nigeria. And the utilization of this new method of testing reading ability and evaluating the readability of instructional materials, called the "Cloze procedure", could prove a definite help to those who take advantage of it.

In this chapter there is an attempt to outline some of Nigeria's English language problems with a special emphasis on reading. The rationale for this investigation and the English language needs in the schools where this study took place are also treated.

Purpose of the Study

The purpose of the study was to (1) determine the readability of four textbooks utilizing Cloze procedure by comparing students' Cloze scores with an established range of Cloze criterion scores, (2) assess what the teachers do in the schools tested to match instructional materials to their students' reading ability, and (3) also determine what instructional strategies teachers in the Nigerian schools use to help their students better understand what they read and study. (The students who took the Cloze tests attend four Assemblies of God ministerial training schools in Nigeria, West Africa.*)

Rationale for the Research

An assessment of the English language problems in Nigeria, West Africa was sponsored by the Ford Foundation in

*The Umuahia school has college and institute levels which are treated separately, thus resulting in five groups from the four schools.

early 1965 and included the cooperation of many foreign agencies as well as the Nigerian Ministry of Education. The specific goal of the survey team was to clarify and coordinate ELT (English Language Teaching) in Nigeria (Jacobs, 1966).

The survey team made comparisons of the data acquired by the ELT survey team with the data available (pp. 41-47). The summary of their findings included a discussion of general language performance, spoken English, vocabulary, and, what is of greatest interest for this study, a compilation of fairly extensive information about Nigerian students' reading. The following general appraisal was made in the report:

Subject to the limitations imposed on our generalizations by data that are less complete and extensive than would be desirable, and which point out the need for a more thorough research . . . we can conclude that (a) data tend to support the contention made by many Nigerians that the quality of English in Nigeria suffers when compared with the English language skills of other English speaking peoples (Jacobs, p. 41).

The conclusions of the survey suggested that reading comprehension of functional English by Primary 6 pupils was generally poor throughout all regions of Nigeria. The survey also cites a comparison of reading speeds among Nigerian, U. S., English, and Ugandan college students (p. 47). The Nigerian students were last in the comparison.

They read ten words per minute less than Ugandan students and seventy-seven words per minute less than English or U.S. students studied. Yet to read at a moderate speed and comprehend what has been read is essential not only for the school pupil at all levels but also for the adult working and living in an English-Language environment. (See Appendix A for a comparison of the U. S. and Nigerian educational systems.)

Moris Williams, Assemblies of God Field Secretary for Africa, expressed his hope that the International Correspondence Institute's diploma program curriculum projections for writing and publishing of the independent-study textbooks for Nigeria, as well as for other parts of English-speaking Africa, would be accelerated to help meet the growing educational demand of Africans. Further, Dr. George Flattey, President of the International Correspondence Institute, Brussels, Belgium, confirmed the rationale for this reading study, citing the National Home Study Council Accrediting Commission report of November 3, 1976, Section II, page 3 (personal communication and letter, December, 1976):

Findings - Generally speaking, the school's materials are excellent. The school is using reading tests and has made a decision to maintain reading levels fairly high.

Recommendations - Since many of ICI students will be studying courses with English as their second language they (ICI personnel) may



discover in time that a portion of their students are having reading difficulties. The area of reading levels should be kept under constant survey. (Writer's italics.)

At the present time the International Correspondence Institute has published fourteen study guides or independent-study textbooks. One-half of the eighty-five college level degree courses are in manuscript form, and more than 1,050 students from fifty-eight nations are enrolled in the school.

This study is also related to the one-and-one-half-year long research sponsored by the International Correspondence Institute and carried on by Paul Pomerville (Pomerville, 1976). The title of this master's thesis is: An Audience Profile Model of the Third World for the Development of an Intercultural Curriculum of Self-Instructional Texts.

The analysis component of the International Audience Profile Model (Pomerville, 1976, p. 17, Figure 3) indicates the need to "determine educational readiness factors" for students. This present study is a contribution to ICI's objective in meeting its students' educational needs.

Background and Significance of the Problem

One of the problems confronted by teachers and curricular workers is how to tell if a particular piece of

writing will be readable for a specific group of readers. A solution to this problem is important because educators consider that student success in school, to a very great extent, depends on being able to read effectively.

The significance of the present study is fourfold.

It contributes to the following:

1. Increasing information about the reading ability of African students in Nigeria through the utilization of an instrument (Cloze test procedure) which teachers can use themselves, for various purposes;
2. Making available to teachers and curricular workers information that will help them evaluate the readability of textbooks and other printed materials so as to better match reading materials with students;
3. Providing teachers of the groups studied with a better understanding of the reading ability of their students; and
4. Providing information for those who want to investigate in their schools issues with which this study deals.

Research Questions

The following research questions were developed to facilitate the investigation:

1. According to the Nigerian students' Cloze scores, are the four textbooks matched to the students' reading ability?
2. Is there a significant difference between the Cloze scores of the four books tested when statistical controls are applied to the following: the school, passage, and the deletion pattern?
3. To what extent is the International Correspondence Institute's independent-study textbook, Galatians and Romans, matched, in terms of readability, to the reading ability of the students who took the Cloze tests?
4. What instructional strategies do the teaching staffs of the Nigerian schools use to help their students better understand what they read and study?

As an additional dimension to the study, data such as grade point average, age, number of languages spoken, and experience with correspondence study were reported and related, where possible, to the students' mean average Cloze. This information is not directly dealt with in answering the research questions above. However, the information

about the student population tested does provide insights that contribute to a better understanding of the students who took the Cloze tests.*

The Limits of the Study

The findings of the study are to be considered within the limits of the subjects, measurement instruments, materials, and procedures used in the investigation. The Cloze test procedure utilized was the seven-word-deletion pattern and the exact-word-plus-acceptable-word replacement scoring method. The study is also limited to the readability levels of the textbooks in relation to the Cloze scores and the following comparative levels designated: frustration, instructional, and independent study.

*Though the principal purpose of the study was not to examine methodological issues of Cloze scoring such as the relationship between exact-word-replacement versus exact-word-plus-acceptable-word replacement scoring, these scores are listed in Appendix I for the purpose of future study and consideration by those interested.

The Subjects of the Study

The population of the research included the students enrolled in the four Assemblies of God ministerial training institutes and in Central Bible College during the Spring of 1977 in Nigeria, West Africa.

School

1. Western Nigeria Bible Institute, Iperu, Ogun State
2. Eastern Nigeria Bible Institute, Ogoja, Cross River State
3. Mid-West Nigeria Bible Institute, Uromi, Bendel State
4. Central Bible Institute, Umuahia, Imo State
5. Central Bible College, Umuahia, Imo State

The students in the five Nigerian Assemblies of God ministerial training schools come from a cross-section of people in Nigeria. The students tested speak thirty-seven languages or dialects as their mother tongues. In addition to this, they come from and study in four different regions of Nigeria: the Western, Mid-West, and Eastern regions and southern Iboland. At least 80% of the students are already functioning in leadership roles in the more than 1,400 congregations of the denomination.*

*Ralph Cimino, chairman of the Board of Theological Education of West African Assemblies of God Schools, and his wife, who formerly directed the English language program at Central Bible College and Central Bible Institute in Umuahia, commented on the general lack of English-language skills, including reading, exhibited by the students in these schools (personal communication, Alexandria, Virginia, January 12, 1977).

Definitions of Terms and Abbreviations

ESL: English as a Second Language

ICI: International Correspondence Institute, Brussels, Belgium. ICI serves as a curriculum development and leadership training center for a worldwide network of correspondence and extension schools for students of the Assemblies of God and other churches and institutions.

Reading: The meaningful interpretation of printed or written symbols involving the ability to discriminate among the shapes and sounds of the symbols and to attach meaning to those symbols (Duffy and Sherman, 1973).

Reading Ability: The ability to read printed materials with understanding. This includes the ability to grasp the main idea, recognize details and support used by a writer, draw inferences, make judgments, and organize and synthesize the written material well enough to write essays or pass examinations over printed materials.

Reading Level: The graded reading level assigned to written materials based on the results of applying devices such as the SMOG readability formula and the Fry readability graph to that material.

Readability: The idea of understandableness of prose materials. The concept implicit in the readability index of a text is the average amount of reading ability needed to understand the text. Readability is the sum total (including

the interactions) of all those elements within a given piece of printed material that affect the success a group of readers has with it (Chall, 1958).

Readability Formula: "A methods of measurement intended as a predictive device to estimate the probable success a reader will have in reading and understanding a piece of writing" (Klare, 1963).

Instructional Methodologies for Reading and Readability: The techniques and methods used by teachers of the Nigerian schools studied that assist students' understanding of the printed materials or handouts in their classes and that help students understand the major concepts of their courses.

Curricular Decision-Making: The deliberate choices made by teachers or other designers of curriculum that, when implemented, help provide the means for students to fulfill the objectives or intents of the instructional materials they study (Taba, p. 12, 13).

Cloze Procedure: Consists of the mutilation of a passage of prose by deleting every nth word, usually fifth to seventh word, or parts of speech. The deleted words are substituted by blanks of standard or equal length to the word deleted.

Cloze Criterion Score: Indicates the performance level of a student on a Cloze test. The "accepted" or criterion level of comprehension for a multiple-choice

reading test is usually considered to be 75% correct item response. The comparable Cloze test score used in this study was 46% correct item response. Traditionally, the 75% multiple-choice score has been an accepted criterion for the "instructional level," i.e., the level at which instructional material is suitable for student supervised instruction.

Levels of Study: As described in the research literature, these include: (1) Frustration level - reading material not matched or suitable to a student's reading ability; (2) Instructional level - reading material suitable for teacher-assisted instruction, materials matched to a student's reading abilities; (3) Independent-study level - reading materials suitable for a student to study alone or voluntarily.

Fry Readability Graph: A graph developed by Edward Fry which includes the aspects of common formula variations of syllables per 100 words and words per sentence. Fry's graph has been validated both for primary and secondary school levels of reading material (Fry, 1968).

SMOG Grading Readability Formula: A formula developed by G. Harry McLaughlin, a psycholinguist, and based on the McCall-Crabbs Test Lessons (1961 revision). It uses a 100% comprehension level (comparable to the independent-study level of curricular materials) rather than the 50% to 75% comprehension readability criterion of most other formulas.

Summary

1. English language learning problems of Nigerians, including reading, are compounded by the fact that Nigerians are linguistically different learners (They speak many different languages). However, the Nigerian government is committed to educating its people in English, which is the language of instruction and the official language of the nation.

2. The study has the potentiality of contributing to an understanding by Nigerian teachers of the use of the Cloze procedure for testing students' reading ability and the readability of textual materials used in the schools where they teach.

3. The International Correspondence Institute (ICI) is committed to meeting the educational needs of its students, and this research can make available to ICI's leadership information as to what extent the textbook Galatians and Romans, written, in part, for the subjects tested, is actually matched to their reading ability.

4. For the teaching staffs who were interviewed and who participated in the administration of the Cloze exercises, this study can help create in them a greater awareness of the importance of matching reading materials to the reading ability of the students they teach. The study can also provide them with information that will

enable them to apply the Cloze procedure in schools where they serve.

5. The study should determine if, in reality, the textbooks tested by the Cloze procedure are matched to the reading ability of the students who took the tests.

6. The study is limited in its findings by the following: the subjects, the measurement instruments, and the material and procedures used in the investigation.

Overview of the Study

Chapter II contains a critical review of the research literature in relation to the reading problems of Nigerian students as learners of English as a second language, to the Cloze procedure, and to readability in general. Research regarding studies with the Cloze procedure carried out with students whose second language is English is also discussed, and a description of other instruments used in gathering the data is provided.

Chapter III centers on the procedures and the sources of data and includes a description of the basic method of research and a rationale for the selection of schools, subjects, and textbooks used in the study. Detailed information is also provided regarding the Cloze test preparation and administration, and descriptions are given of the faculty survey questionnaire and of the readability measures included in the appendix of the study.

Chapter IV presents the findings of the study and is followed by Chapter V which gives an interpretation of the findings, a summary of the investigation, and recommendations for further study and research.

CHAPTER II

A REVIEW OF THE RELATED RESEARCH

This chapter contains a critical review of the research related to the reading problems of Nigerian students as learners of English as a second language, the procedures for collecting the data, and the instruments used in the study.

The Reading Problems of Nigerian Students as Learners of English as a Second Language

If there were as much failure in the secondary schools of the world in the teaching of mathematics, history, or science, as there is in the teaching of living foreign languages, education as a whole might be said to have broken down (Gateby, 1950).

Is this true of a country such as Nigeria, where English, though not the mother tongue of the masses, is the official language? A simple answer cannot be given to this question because of the complexity of the language environment in Nigeria. However, the information seems to indicate that Nigerians face many obstacles in the learning and mastery of English, their official language.

English Language Teaching in Nigeria, the report authored by Jacobs in 1966, deals at length with this subject.

Among the nations using English as a second language few are using it more broadly than Nigeria. In this forerunner among African nations English is a "second language" only in the sense that it is not learned as a native language. In respect to the role it serves it is the national language of Nigeria — the language of government, the language of business and commerce, the language of internal communications among Nigerians of differing language backgrounds (more than 200 different languages are spoken in Nigeria) and, of course, the language of international communications (Jacobs, 1966, pp. 1,2).

However, the problems associated with the teaching and learning of English as a second language are complex and many. In the report by Jacobs referred to above "one of the most commonly encountered problems cited by teachers and educators ... was the reading problem" (p. 47). Indeed, the results of the reading comprehension test administered under the auspices of the Ford-sponsored survey team (1,623 tests were scored) in five areas of Nigeria (North, East, Mid-West, and Lagos) revealed that

...if the students tested are among the better Nigerian students and if the reading materials are typical of those they will encounter in school and everyday life, the Primary 6 student can understand only slightly more than 1/3 of the material that he may be expected to read if he goes on to secondary school or that he will need to read even if he goes no further in school (Jacobs, 1966, p. 50).

Thus, though the mastery of English language skills, especially reading, is vitally important for Nigerians,

actual competency is extremely low.

Bambose surveys this problem from a linguistic perspective (1967) and cites the multilingual context of Nigerian life to explain some, if not most, of the students' problems with English. Dakin elaborates the point that European languages are the mother tongue of only a small minority of Africans, but they are used as a second language by millions. In this context, both French and English have become the "lingua franca" of large parts of Africa. Thus, in the midst of indigenous language complexity, as in Nigeria, English has firmly established itself as a national language (Dakin, et al., p. 68).

Variations of this same multilingual problem in Nigeria, where English has such prominence as the official language, is expressed by many scholars and can be summarized as follows:

English as a second language and as the official language of Nigeria is here to stay. Nigerians need much help to develop language competencies in English for modern living and development. Reading is an important part of these English language skills. Concentrated effort must be made to improve these competencies in English language use (Carroll, Thompson Elliott, Afolayan, Dakin, and Bambose).

Yvonne Chapman-Taylor of the University of Ibadan Reading Centre reports on the use of the Cooperative English tests of ETS (Educational Testing Service), Princeton, New Jersey. She states that according to the Australian adaptation and norms set for students of the University of

West Australia: 136 Nigerian students were tested. Australians scored 72% on the comprehension section of the exam while Nigerians scored 50% (in Jacobs, p. 94). However, in 1961 McKillop and Yoloze, (in Jacobs, 1961) conducted a study with ninety-two Nigerian students using a vocabulary test and a comprehension and speed test devised by the Institute of Psychological Research, Teachers College, Columbia University. Nigerians scored just as well on the vocabulary test as a group of U.S. students whose mother tongue was English but who had a comparable educational background. On the comprehension and speed test however, Nigerians scored much lower than U.S. students: 57% for Nigerians as compared with 69% for U.S. students.

When the mean speed scores were compared the difficulties of Nigerian students showed up more clearly, the Nigerian score being approximately half that of the American students (Jacobs, p. 94).

Chapman-Taylor goes on to analyze the main difficulty of Nigerian students in English as follows:

With students whose mother tongue is English there is usually a high correlation between the level of vocabulary and intelligence, and between vocabulary and comprehension. In an analysis of her test results McKillop found a near zero correlation between the former pair and a very low correlation between the latter pair. It is obvious that tests designed for American students do not measure the same things in our students (Nigerians) as they do in American students. The findings would seem to support my contention, too, that when our students learn words they associate them with a much more narrow range of meanings and therefore are less able to use them and think about them in

varied contexts (Chapman-Taylor in Jacobs, 1966, p. 95).

This tends to strengthen Elliott's thesis that the traditional grammar and translation approach to the teaching and learning of English and the tendency to emphasize the importance of the "printed word" are relatively common (1952). Perhaps this is one of the reasons for the large gap in comprehension scores of Nigerians in relation to those of similar U.S. and Australian students. Nigerians recognize and know words in isolation but have difficulty in arriving at an author's actual meaning in interpreting given passages (Chapman-Taylor, in Jacobs, p. 96).

The Cultural Context of Testing

Obtaining a culturally suitable as well as valid and reliable instrument for this study was a major problem. Purves, editor of Research in the Teaching of English and director of the National Council of Teachers of English (NCTE) Task Force on Measurement and Evaluation, summarizes recent documentation regarding the topic.

Standardized multiple-choice tests in English and reading run grave risk of being unfair to cultural and linguistic minorities — particularly as test results are used to compare the achievement of these minorities to majorities or total groups of students (English Journal, March 75, p. 7).

Because of standardized procedures, many standardized tests may be inappropriate for the low socio-economic and minority groups ... (Newkirk, English Journal, March 75, p. 51).

There is sufficient justification to reject standardized testing for this study in favor of the Cloze procedure. The use of the Cloze procedure seems to be, at the present moment, the best alternative available for solving some of the problems associated with standardized testing, especially with speakers of English as a second language. In fact, when care is taken to choose appropriate culturally contextual material for the Cloze testing, more accurate results should be obtained than with standardized testing.

Research Related to the Cloze Procedure and to Readability

Dale and Chall summarized the art of readability measurement in 1949. They wrote:

On the problem of comprehensibility, we have made some strides. The numerous readability formulas help give a rough approximation of the difficulty of a piece of material. Some of these are very easy to apply — and consist of mechanical counting of words, syllables, length of sentence, prepositional phrases, etc. But because they are mechanical, they are usually taken as infallible. . . The important factors of conceptual difficulty, organization of the

material or the logic, semantic variations in words, etc. have been widely discussed in the literature on readability but have not been incorporated in any formulas.

To date there is no composite method that can be used to measure all aspects of readability. We must consider separately the aspects of format and organization, content, expressional elements; and then make a judgment as to the suitability of a particular book for a particular group.

Some day, though, we may be able to say that a given piece of material is readable for a particular group of readers and have this statement encompass all the possible factors that contribute to its readability. At this present time, however, we can say only that it is readable on the basis of such and such a criterion taking such and such factors into consideration.

(Dale and Chall, p. 25, 1949)

Four years later a method was presented in the professional literature that seemed to answer many, if not most, of the criterion specified by Dale and Chall in 1949. However, it was not a readability formula but a procedure called the Cloze test.

The Cloze Procedure

The Cloze procedure was developed by Wilson L. Taylor in 1953 while he was a graduate student at the University of Illinois, Urbana. He called the procedure "Cloze" from the word "close", which, according to Gestalt psychology, is

related to the human tendency to complete a familiar but not-quite-finished pattern — to "see" a broken circle as a whole one, for example, by mentally closing up gaps. The Cloze procedure consists of the mutilation of a passage of prose by deleting the n^{th} word, usually fifth or seventh, or parts of speech. The deleted words are substituted by blanks of standard length or of equal length to the word deleted.

Studies with Cloze in ESL

Since the introduction of the term "Cloze procedure" into the professional literature and presentation of it as a new tool for measuring readability (Taylor, 1953), research has greatly increased and continues enthusiastically today (Oller, 1975). The ERIC microfilm collection alone, since 1960, has accumulated more than 300 titles on the subject and some of the titles are extensive bibliographies (Myers, 1976). Still, language teachers, including those teaching English as a second or foreign language, along with bilingual educators consider the Cloze technique to be underexploited even though it offers to English teachers around the world, including professional educators and researchers a tool for understanding better the phenomenon of reading and what to do to help people read better (McLeod, 1974; Oller, Bowen, 1972; Bowen, 1969;

Mason, 1971).

The use of the Cloze procedure in English has led to an exploration of its application and use in other languages. Oller has suggested that the "foundation of all language skills is the capacity to anticipate elements in sequence" (Oller and Conrad, 1971). If this is the case, and in spite of the problems still associated with the application of Cloze technique to English as a second language, Oller considers that the procedure will play "an increasingly important role not only in the measurement of second-language proficiency, but also in experimental explorations into the mysteries of the human mind itself" (Oller, 1972a).

It is important to note that studies utilizing the Cloze procedure to measure the reading ability of learners of English as a second language (ESL) have shown the practicality of the method, but they have also indicated some problem areas that need further research (Darnell, 1968; Bowen, 1969; Kaplan and Jones, 1970; Oller and Inal, 1971).

Stubbs and Tucker (1973)

As an integral part of their English entrance examination, Stubbs and Tucker administered a Cloze test to 155 native speakers of Arabic (University of Beirut, 1973). Their concern in the study was to collect information

regarding the validity of the Cloze as an English-proficiency measure for an Arabic speaking population and to examine the relationship which exists between scoring the tests for exact-word replacement and for contextually-appropriate responses.

They checked the validity of the Cloze test against the external criterion: The English Entrance Examination of the American University of Beirut and found a significant positive correlation ($r=.71$, $p .01$) between the Cloze-exact and the Cloze-acceptable scoring method and the total entrance scores ($r=.76$, $p .01$). In relation to the exact versus acceptable scoring procedure they stated:

The average number of correct answers for the cloze-exact scoring was 15.64 with 22.06 correct with the cloze-acceptable scoring. This indicates that when exact scoring was used candidates were able to cloze successfully about 31 percent of the total blanks and about 44 percent of the total blanks when acceptable scoring was employed. . . . the two scoring methods - exact and contextually-acceptable - yielded a very high correlation ($r=.09$, $p .01$) which indicated that, other factors being equal, a cloze test scored for exact replacement could be used quite easily by a non-native teacher of English. This would eliminate the time consuming problem of evaluating acceptable responses or of having to find a native speaker to check the results (Stubbs and Tucker, 1974).

Bowen (1972)

Bowen reports on work done at UCLA recently by Oller and his students. The underlying assumption that has guided their work is that

... communication through language demands the employment of a highly integrated set of skills and that general proficiency can be more accurately and efficiently assessed by a test that requires the simultaneous application of various component skills rather than a test, however long and complex, that tests these skills one at a time.

He further states:

On the strength of promising results of the experimental work done we are now using for our language placement examination (required of all entering foreign students for whom English is not a native language) a pattern of dictation, cloze tests, and composition rather than the more cumbersome TOEFL-like test of individual skills, (aural comprehension, reading, grammar, spelling, etc.) which we formerly employed (Bowen, 1972, p. 356-357).

Oller (1972)

Research has repeatedly shown that the best and most convenient way to score Cloze tests for those whose mother-tongue is English is just to count the number of exact words replaced in context (Taylor, 1953; Rankin, 1967; Rudell, 1964; Bormuth, 1965). Even the Stubbs and Tucker research conducted with native speakers of Arabic showed the advantage of Cloze test scoring of only exact-word replacement. Though native speakers tend to get slightly higher scores when acceptable synonyms are counted as correct, the extra effort involved is so great that the

added work is not considered worthwhile (Oller, 1972a, p. 151). Nonetheless, Oller points out that

Researchers who have experimented with the Cloze method as a measure of second-language proficiency have often preferred scoring systems that give credit for contextually acceptable responses. Some have gone so far as to give partial credit for responses which, though clearly incorrect, indicate some measure of comprehension. Darnell (1968) scored responses on given items on the basis of native-speaker responses for those same items. Bowen (1969) weighed responses according to their degree of correctness, subjectively determined. Oller and Inal (1971) counted any contextually acceptable response as correct.

In a study at UCLA with 398 foreign students representing fifty-five languages, Oller used five scoring methods and found that the best of the methods investigated was the acceptable-word scoring method (which included the exact-word replacement as acceptable) in terms of item discrimination and validating correlations, regardless of the level of difficulty of the test (1972a, p. 157). The acceptable-word scoring method was validated with the UCLA English as a Second Language Placement Examination (ESLPE).

The rationale developed by Oller for this type of scoring is as follows:

Since it has been clearly established that allowing contextually acceptable responses in addition to exact-word-fill-ins makes little difference with native speakers, why should we expect things to be different when non-natives are tested? One is that the exact-word scoring criterion may create a Cloze test that is simply too difficult

for non-natives even though it may not be for natives. Also, there is something unsettling about requiring a non-native speaker to guess the exact word in order to receive full credit for an answer (Oller, p. 152).

The Cloze Procedure and Direct Testing

The Cloze procedure presents itself as a viable solution to the measurement of a student's ability to read certain instructional materials because, unlike multiple-choice tests, it asks no questions but involves the student directly with the testing material itself.

Most multiple-choice questions are written by teachers with little ability or time to construct test questions that can meet criteria for even loose standards of replicability. Since Cloze tests can be constructed by simple, objective, mechanical deletion of words, some researchers (Bormuth, 1967a, 1968d; Rankin and Culhane, 1969; and Anderson and Hunt, 1972) consider the Cloze procedure a realistic alternative to multiple-choice testing. Also, as indicated below, multiple-choice testing criteria for the measurement of passage performance for testing reading have high potential for being inaccurate, while with the Cloze procedure, it is claimed, the advantage of direct testing is obtained (Boyce, 1974).

The basic difference between a Cloze reading

comprehension test and multiple-choice tests for reading seems to be in the method or mechanism each test uses to elicit responses from examinees (Bormuth, 1966, pp. 82-83; Klare, et al., 1972, pp. 82-86). In a Cloze test examinees fill in words in a passage as they read the passage, while in a multiple-choice test examinees read a passage and then answer multiple-choice questions about the passage. This essential and critical difference is the main reason Bormuth and Coleman maintain that Cloze tests should be more widely used for assessing reading ability as well as readability of instructional materials. Their reasoning is as follows:

1. Cloze tests measure reading comprehension better than do multiple-choice tests (Bormuth, 1969a; Miller and Coleman, 1967) and, as a result,

2. Cloze tests generate more valid and reliable readability formulas than multiple-choice tests can generate (Bormuth, 1969a; Coleman, 1971).

Other advantages of the Cloze cited by researchers are the following:

1. Cloze measures the difficulty of a passage and not the difficulty of questions about that passage. In a multiple-choice test, questions may be easier or more difficult for an examinee to understand than the passage itself. It may thus fail to sample passage content adequately.

2. The Cloze test measures what the reader actually brings to the test situation in relation to content understanding of a given passage. In a multiple-choice test, on the other hand, questions posed after reading a passage make it difficult to determine how much an examinee already knew about the content of a passage before reading it or how much he learned from the passage while reading it.

3. The Cloze test measures the difficulty of every word, phrase or sentence in a passage (that is, if all of the words are deleted in the various Cloze test forms of the passage). In a multiple-choice test, however, questions cannot be as precise in measuring intra-sentence meanings and relationships (Bormuth, 1967, pp. 840-841; Coleman, 1968, p. 317; 1971, p. 157).

Concurrent Validity of the Cloze Procedure

Research dealing with concurrent validity has largely considered the nature of the relationship between the Cloze procedure and standardized testing. Taylor established that correlations of $r=.76$ existed on a Cloze test and a comprehension test made from the same material. (Taylor, 1956, p. 45), while Bormuth reported correlations of $r=.73$ to $r=.84$ between Cloze test scores and multiple-choice test scores made on comprehension over the same material (Bormuth, 1968b, p. 431). In yet another study correlations of $r=.92$ were found between Cloze readability scores and

the difficulty of the same passage measured by multiple-choice tests (Bormuth, 1968a). It can be seen from these few citations and from previous discussion that the Cloze procedure offers many advantages in that it can be used both in the testing of students' reading ability and in the assessment of readability of textual material.

The Scoring and Criterion Problem

In the application of the Cloze procedure to the learning of English as a second language (ESL), many questions remain unanswered. And these problems or questions are not limited to learners of English as a second language, but include problems related to native speakers of English as well. The most dealt with questions involve scoring. Thus, research still continues on how to indicate a correct grade equivalent score as well as a Cloze criterion score that reflects an acceptable performance at a given grade level on a Cloze test (Walter, p. 23).

Related to the scoring problem of Cloze tests is the level-of-difficulty question, and its "respective contribution to the effectiveness of Cloze tests as measures of ESL (English as a Second Language) proficiency" (Oller, 1972a). Boyce (1974) deals with the problem of the lack of a frame of reference "by which scores on a Cloze test might be interpreted" (p. 24). In the scoring of reading tests on instructional materials to determine their

suitability for a given population, three classifications are to be found in the research literature (Walter, 1974, p. 23; Boyce, 1974, pp. 6-9). They are the

1. Independent study level,
2. Instructional level, and the
3. Frustration level.

The independent study level is usually considered to be that level of difficulty at which a student with a given reading ability would be capable of independent or "solo" study of prose material with no assistance. This level of study would mean that a student would score at least 90% on a valid and reliable multiple-choice test of comprehension over given materials (Kilgallon, 1942; Betts, 1946). Independent study material, then, would be suitable for a student's voluntary study if the student in question were able to score 90% on a test of comprehension over the material.

On the instructional level material is said or considered to be matched to the student's reading ability if he can answer correctly at least 75% of the questions on a multiple-choice test. As far back as 1917 Thorndike suggested these criteria (Thorndike, 1917, pp. 323-332), and in 1946 Betts adopted the 75% comprehension level and included it as a scoring criterion for the Informal Reading Inventory (IRI). Harris also adopted the use of this standard (1962), as did Bond and Tinker (1967).

Bormuth (1967a)

Bormuth questioned the adoption of the 75% criterion for classifying a student's reading ability as being on the instructional level. He wrote after a review of the literature that the problem lies in the fact that neither Thorndike nor anyone else known to him had given either logical or empirical reasons why these standards should be accepted. Bormuth felt that this problem was too serious to be left unattended, and in 1967 he conducted the following study. A fifty item Cloze test and a thirty-one item multiple-choice test were made over nine passages. The multiple-choice tests each contained items considered appropriate. They also tried out the items with seventy-three children and discarded those items that were negatively correlated with the total.

The passages numbered about 275 words and had a Dale-Chall readability grade level of from 4.5 to 6.5. The tests were given under untimed conditions to 100 students in grades 4 and 5. The Cloze form was administered first, while the multiple-choice form was given three days later.

Two sets of scores were formed for each individual by summing the scores over all of the nine Cloze and multiple-choice tests. A scatter plot indicated linearity. Then the product-moment correlation was calculated and the data inserted into a regression equation to calculate the

most probable multiple-choice score related with each of the several Cloze scores.

The results point out that if the conventional passage performance is accepted, a passage on which a pupil receives a Cloze score of 38% is suitable to be used in his instruction — a Cloze score of 38% compares to a multiple-choice score of 75% over the same material. Also, a 50% Cloze score is equivalent to 90% on a multiple-choice test. If corrected for guessing, a multiple-choice score of between 43% and 52% would result.

Bormuth (1968d)

Bormuth did a follow-up study in 1968 to determine a set of criterion scores comparable to scores on oral reading tests. Paragraphs from the four forms of the Gray Oral Reading Tests (1963) were used. Each form contains thirteen paragraphs in graded sequence which range from very easy pre-primer difficulty level to a difficulty level sufficient to challenge capable high-school pupils. Some of the paragraphs were augmented and revised to obtain a more reliable measure of how well students comprehended each paragraph. Language transformation was used in constructing the items (Chomsky, 1957)... .

Two versions of a Cloze test were made from each passage by utilizing different deletion patterns. From grades 4 - 6 in a single school, the subjects were randomly

selected. At each grade level two of the four paragraphs were randomly assigned to each subject who took them as Cloze tests. The accompanying two paragraphs were taken by each pupil as an oral reading test.

In order to find the Cloze score comparable to the 75% criterion, the most difficult paragraph level on which a subject scored a comprehension level of 75% was determined and the subject's Cloze score on that level was recorded. The level of paragraph difficulty having the score nearest to 75% was used when no comprehension score of exactly 75% was found. Then the Cloze scores were averaged across subjects to obtain the comparable score.

The results showed Cloze scores of 44% and 57% to be comparable to the criterion scores of 75% and 90%, respectively. These scores can be compared with the scores of 38% and 50% of Bormuth's 1967 study. According to Bormuth, the seven point spread between the independent level in his two studies can be explained by a ceiling effect in the multiple-choice scores in the earlier study which probably suppressed the multiple-choice scores at the upper end of the range, thus resulting in an artificially low comparable Cloze score. The difference could also be partly explained by the difference in methods in obtaining equivalence.

Thus, when a student's Cloze scores fall between 38% and 55% (combining the results of the 1967 and 1968 studies), it indicates that the reading materials are at a level of difficulty thought to be suitable for the instructional level — teacher assisted instruction. Logically, then, a student's score at 57% or above ranks the instructional material at his independent level of study (Bormuth, 1968d).

Rankin and Culhane (1969)

In a 1969 study Rankin and Culhane replicated, in its main features, Bormuth's 1967 study. Though some differences can be found in the two studies regarding procedures used, the two studies are comparable in the more significant aspects. The main difference is that Rankin and Culhane used only fifth grade children.

In a consideration of the range of 50% to 100% multiple-choice scores, the Cloze comparable scores of Bormuth reveal a range from 19 to 57 (39 points); while Rankin and Culhane's show a range from 10 to 74 (65 points). The average differences lie in the scores comparable to multiple-choice scores of 85 and above (see Table 1). According to Boyce, however, "the difference column with its increasing differences at the extremes of the range exhibits all the manifestations of the typical regression effect, and this is a more likely explanation of the differences."

(Boyce, 1974, p. 28). In the Rankin and Culhane study a Cloze score of 41% is seen to be comparable to the 75% multiple-choice criterion.

TABLE 1

Equivalent Cloze and Multiple-Choice
Percentage Scores for Bormuth (1967,
1968) and Rankin and Culhane (1969)

Multiple-Choice Scores	Bormuth 1967a	Bormuth 1968d	Rankin & Culhane 1969	Difference
50	19		10	+9
55	23		15	+8
60	27		22	+5
65	31		28	+3
70	35		35	0
75	38*	44	41*	+3
80	42		48	-6
85	46		54	-8
90	50#	57	61#	-11
95	53		67	-14
100	57		74	-17

*Instructional reading level = 38 to 61

#Independent or voluntary reading level 61 or above

Rankin and Culhane conclude:

In view of these findings it is now possible for teachers to interpret Cloze test scores with some degree of confidence by using specific percentage scores as criteria of acceptable performance (1969, pp. 193-198).

Using the 44% criteria (sic) (i.e., 75% multiple-choice comprehension score), it is clear that there is a fairly close correspondence between results of the formulae employed to check the criteria and in using the 58% criterion. . . . We can evaluate the Independent Reading Level by using the Cloze procedure (Rankin, 1969, p. 6).

Anderson and Hunt (1972)

Research to determine comparable Cloze and multiple-choice scores was also conducted by Anderson and Hunt with school children in Papua, New Guinea who had learned English as a second language. They used Bormuth's approach but with some modifications. First, they gave no information as to the length of the passages they used except that they were short. Unlike Bormuth (1967) and Rankin and Culhane (1969) who both utilized thirty-one item multiple-choice tests on each passage, Anderson and Hunt used ninety items to test the nine passages. Nor is any information provided to indicate if they validated the multiple-choice items. While Bormuth and Rankin and Culhane had used a deletion pattern of every fifth word, Anderson and Hunt used a deletion pattern of every eighth word.

Anderson and Hunt found comparable Cloze scores of 44% for the 75% multiple-choice score and 53% for the 90% multiple-choice criterion score. They concluded that the agreement between their scores and the scores from research conducted in such diverse situations (U.S.A. to Papua, New Guinea) was remarkably close. If the differences in educational systems are considered, their results take on more significance. They conclude by stating that, although both the criteria derived by Bormuth and Rankin and

Culhane and their research will not necessarily be applicable in all future multiple-choice comprehension test situations, the results should encourage primary school teachers to use Cloze tests and the criterion test score correspondence of multiple-choice tests to determine the appropriateness of reading material for their pupils. The comparable scores of the four studies reviewed and their relationship to multiple-choice scores is presented in Table 2 below and in Figure 1 following.

TABLE 2

Comparable Multiple-Choice and Cloze Test Criteria

Multiple-Choice Criteria	Bormuth 1967a	Bormuth 1968d	Rankin & Culhane 1969	Anderson & Hunt 1972
75%	38%	44%	41%	44%
90%	50%	57%	61%	53%

Thus, it appears that there is considerable justification in the research literature to assume that a Cloze test score from 38% to 63% is comparable to a multiple-choice reading test score of 75% to 90%, i.e., the instructional level — teacher assisted instruction. The range of scores above 63% would indicate that reading material would be at the independent study level — suitable for a student's voluntary study or reading.

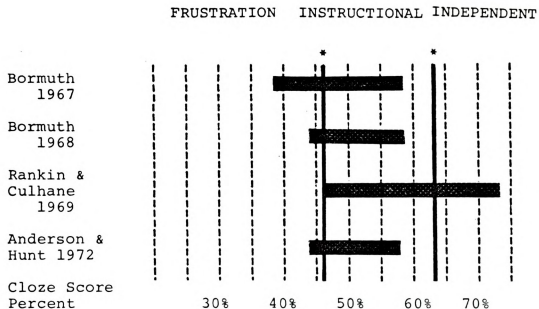


Figure 1. A Comparison of Research on the Cloze Test Scoring and Criterion Problem: Levels of Study Graph
(Based on Boyce, 1974)

*46% to 63% are the accepted range of Cloze scores for the instructional level of study

Cloze scores of 46% and 63% are comparable to multiple-choice scores of 75% and 90%

The Cloze Test — Deletion Patterns

In the research literature various deletion patterns for Cloze tests are reported, the most common of which are random and nth word deletion (i.e., fifth through tenth). For textual materials containing highly factual information, Culhane advocates a deletion pattern of every tenth word, although a count as low as every fifth word can be used with narrative material.

MacGinitie (1961) found that because of the contextual constraints in English prose paragraphs, the difficulty of word replacement decreases rapidly beginning with the fifth word deletion pattern. In a five to ten word deletion pattern the context has relatively little effect on the choice of the deletion pattern used in relation to the difficulty of word replacement. Other researchers have reached the same conclusions (Johnson, 1969; Anderson, 1969).

Boyce claims that in most published investigations no reason is given for the choice of every fifth, sixth, seventh, etc. word deletion (1974); rather, it seems to be an arbitrary choice. In this study the seventh word deletion pattern was chosen based on other studies where this pattern was used (Oller, 1972a; Anderson and Hunt, 1972; Boyce, 1974). However, Boyce also comments that more research needs to be done to determine "what are the most effective deletion systems according to the age of the person doing the exercise . . . and type of content" (p. 14).

Cloze Test Format

At least four variations of Cloze test exercises are described and have been used by researchers. They can be briefly outlined as follows:

1. The Cloze passage is typed out and every n^{th} word deleted. The deleted words are replaced with blank spaces of standard length, usually of from ten to fifteen type-written spaces (Bormuth, 1975, p. 66).

2. Paper is glued over an original or photocopied prose passage leaving blanks the same length as the deleted word. The blank spaces are numbered by hand and the student is expected to write out his answers in the spaces left in the passage. The text is then photocopied or reproduced in some other way (Anderson, 1971).

3. An alternate method to the one immediately above is to photocopy the original and blank out the words with white opaque correction fluid. The blanks are numbered and, at the right margin of the paper, numbered spaces are provided for the student to write out the word replacements he thinks appropriate (see Appendix G, Apologetics Sample Cloze Test).

4. The text is typed out and the deleted words are replaced by a blank of equal length to the number of letters of the word deleted or of standard length. The space is then numbered and on the right hand margin of

the text, numbered blank spaces are provided for the student to write out the word replacement.

While Bormuth maintains that no word length cues should be provided by leaving spaces of the same length as the words deleted, Anderson maintains that whatever cues the material gives should be used.

Readability Formulas

There exists a large amount of information and research on readability and the application of readability formulas. For example, Klare reports on 482 different types of formulas (1963). Readability formula accuracy to determine grade level has increased up to 75% in recent years (Bormuth, 1968c) and, as noted above, the Cloze procedure itself has opened up many new avenues for the possibility of even more accurate measurements of readability.

Probably the first easy-to-use formula was the version published by Irving Lorge in 1939, and the most notable formulas following Lorge were the Flesch formulas of 1943 and 1948. In the same year as the latter Flesch formula, the Dale and Chall formula was published which, as Klare (1974-75) suggests, was the most accurate readability formula to 1960 (p. 70).



In 1965 Fry proposed a "Readability Graph" for a simpler calculation of the reading difficulty of text as related to grade level, a graph which has been validated both on the secondary and primary level (Klare, 1974-75). "Fry used the common formula variables of syllables per 100 words and words per sentence ..." (p. 77). Fry states that the results of his graph correlate highly with the Dale-Chall, the SRA, Flesch and Spache formulas (Fry, 1968, p. 577).

The SMOG Readability Formula was developed by McLaughlin, a psycholinguist, based on the 1961 revision of the McCall-Crabbs Test Lessons. Following is an abbreviation of his formula.

$$\text{SMOG Grade} = 3 + \text{square root of polysyllabic word count in thirty sentences}$$

Predictions from this formula correlated at approximately .70 with the results from the McCall-Crabbs test results. Gunning was the first to apply a count of polysyllabic words to readability and called his formula "FOG" count in reference to the fog conditions of London, his home city.

It is important to note here that McLaughlin validated his formula against the McCall-Crabbs passages, but used the 100% comprehension criterion rather than the 50% or 75% criterion employed by others. For this reason his formula provides scores about two grades higher (less readable) than the Dale-Chall formula.

Faculty Questionnaire on Reading
and Instructional Strategies

A singular lack of research relating instructional strategy to reading ability or readability of textual materials is noted by Elaine Cherney in her doctoral thesis dealing with the subject of readability (Michigan State University, 1975, p. 18). Indeed, little information about readability measures has reached teachers and has been incorporated into their curricular decision-making. Yet starting with the selection of textual materials assigned for student reading up to teaching strategies used in the classroom or incorporated into teacher-written materials, readability considerations should be of primary importance.

In her conclusions Cherney reports that faculty at Michigan State University did "modify their instructional strategies" to some degree to help compensate for the reading ability of the students enrolled in two remedial freshman courses in the fall term of 1972.

She also found the following:

1. None of the instructors of the classes applied readability formulas in the selection of texts nor were they cognizant of formal concepts of readability.
2. The instructional staff applied informal standards for text selection. The English staffs were more successful at this than the staffs of the Natural Science course.

3. The cost of texts was a prime consideration in textbook selection for all instructors in the investigation (pp. 94, 95).

The faculty questionnaire used in this study was compiled using the factors presented in the book, Know Your Reader, by George S. Klare and Bryon Buck, and adapted for this study with the help of Ralph Cimino, principal of one of the Nigerian schools where this study was conducted (see Appendix E).

Summary

The review of the literature seems to support the following conclusions:

1. Concentrated effort is needed to help Nigerians to develop and improve their English language skills, including reading.
2. Because of the difficulty of reading test construction and validation and the problems associated with standardized testing in the multicultural and multilingual environment, the Cloze procedure needs to be used to verify its actual practicality for measuring reading ability.
3. Various methods have been used to score Cloze for ESL learners. Though logical justification is given for one method over another (exact-word replacement scoring versus exact plus acceptable-word replacement scoring),

research is not entirely clear on which method should be used in which situation and with whom.

4. The Cloze procedure offers classroom teachers the advantages of reading test construction that are difficult to obtain in teacher-made multiple-choice reading tests.

5. Cloze tests highly correlate with other testing instruments for reading but offer the advantage of testing students' reading ability in relation to the readability of curricular materials they actually study.

6. Research suggests a range of Cloze scores comparable to multiple-choice reading scores by which students' reading ability and text readability can be classified. The following levels have been identified: frustration, instructional, and independent-study or voluntary reading levels.

7. Conventional or traditional readability measures such as the Fry graph and the SMOG formula are convenient and easy to utilize. Further, they offer the advantage of taking a rapid measure of readability of published materials. They are limited, however, in their use to actually match specific reading materials to specific groups of students on a conceptual basis or in relation to the logical organization of materials.

8. Very little research exists that assesses to what extent teachers utilize readability measures for

instructional materials or to what extent they have incorporated this information into their curriculum decision-making.

9. A fifth-to-tenth-word deletion pattern seems best suited to Cloze testing. More study needs to be conducted experimentally to determine what are the most effective deletion systems according to the age of the person doing the exercise and according to the type of content.

CHAPTER III

PROCEDURES AND SOURCES OF DATA

The nature of this investigation, to a great extent, determined the decisions to be made and the steps to be taken in the carrying out of the research. An account of these decisions, the procedures, and the sources of the data are outlined in this chapter. The following topics are discussed and explained in the pages following:

(1) The Basic Method of Research, (2) Selection of the Schools and Subjects, (3) Selection of the Texts, (4) Cloze Test Preparation, (5) Test Administration, (6) The Faculty Questionnaire, (7) The Fry and SMOG Readability Measures, (8) Treatment of the Data, (9) Summary.

The Basic Method of Research

Since the purpose of this study was to (1) investigate the readability of textual materials by relating the Cloze

test scores of the Nigerian students to established study norms, i.e., instructional and independent levels, and (2) to assess what the teachers of the Nigerian students do to match instructional materials to their students' reading ability, as well as (3) to determine what instructional strategies these teachers use to help their students better understand what they read and study, a descriptive methodology of research was used.

The basic purpose of descriptive research is to describe the status of a given field. Thus, descriptive research attempts to describe existing situations and conditions. The data in descriptive research is treated from a "central tendency" point of view. Variability and the degree of interrelationships between variables of the data are also treated in descriptive research (Leedy, 1974, p. 114).

Schools and Subjects

Though previous to the Nigerian civil war, the Assemblies of God church sponsored numerous primary and secondary schools, today the church only sponsors training schools for its ministry. At the General Council of the Assemblies of God held in Old Umuahia, Imo State, on March 29-31, 1977, General Superintendent G. O. Oyakhilome reported that over 260 new congregations had been started

during the previous year. Many of these churches were started by student pastors who attended or who now attend the ministerial training schools where this study was conducted. In fact, the functional aspect of these schools becomes evident from an analysis of the replies given on the Student Questionnaire administered during the study. Of the 353 respondents to the questionnaire, 279 are now student pastors, twenty-eight fill other types of leadership roles, and twenty-eight have no formal responsibility in the work of the church at the present time.

Besides the four institute level schools, at Old Umuahia one college level school is maintained. A cutoff point is established for students taking the placement examination which determines whether they enter the institute or college. However, students maintaining a given grade point average can move up to the college from the institute.

The language of instruction in these five schools is English. Although these students speak thirty-seven different dialects and languages as their mother tongues, they are forbidden to speak any other language than English while on school campuses.

The schools where the Cloze reading tests were administered are listed in Chapter I along with their locations.



Faculty and Students

At the time the Cloze tests were given, twenty-six faculty members served in the Nigerian Assembly of God schools. These teachers either received most or all of their teacher preparation in the United States or in Nigeria itself. However, a number of the Nigerians had taken further studies at and graduated from the West Africa Advanced School of Theology at Lome, Togo.

The Cloze tests were administered to 371 subjects, sixteen females and 355 males. Their average age was twenty-six years and ranged from a low of fifteen years to a high of sixty years.

Incomplete data were obtained on nineteen of the subjects who were unable to complete one or more of the Cloze tests. One student questionnaire is missing, making a total of twenty students with incomplete data. The data from these twenty subjects are placed in Appendix J.

Selection of the Texts

Part of the rationale for using the Cloze procedure for assessing readability of instructional materials along with student reading ability is because text materials students actually use or are familiar with can be tested with Cloze by teachers themselves as well as by researchers.

Miller considers such textual materials to be on a student's experiential reading level (1974, p. 221).

The textbooks selected for the study constituted curricular materials that were either part of the curriculum or were on the same reading level as textual materials they were studying. The selected textbooks are listed below and a short explanation is given for their choice.

1. Pearlman, Myer, Knowing the Doctrines of the Bible, Volume 3, Assembly of God Press, Accra, 128 pp.
2. Williams, Morris, Declare His Righteousness, Springfield, Missouri, 1975, 125 pp.
3. Perkins, W. A., The Freedom Geographies of Nigeria, Book II, Edinburgh, McDougalls Educational Co., Ltd., 1961, 118 pp.
4. Pomerville, Paul, Galatians and Romans, International Correspondence Institute, Brussels, Belgium, 1976, 264 pp.

The first text listed above was published in three volumes by the Assembly of God Press in Accra, Ghana. Volume 3 was used for this investigation, and it was to be studied by the third-year class during the second semester of 1977. Volumes 1 and 2 were previously studied by these two classes. Because these three volumes are not studied by the first-year classes of the institute level schools, the Cloze test scores for the Pearlman book for the first year are not included in the study. The second and third-year classes in all five schools had not as yet studied the third volume used in the Cloze testing.



The second textbook had been adopted by the Board of Theological Education of West Africa Assemblies of God Bible Schools. This book had not been in use in the schools, so none of the students had any previous knowledge of its contents.

The textbook, The Freedom Geographies of Nigeria,* was obtained from the library of Michigan State University's Center for African Studies. It was included in the study because of its content, i.e., West African Geography. Also, it had a slightly lower grade level than the other three books used in the study according to the Fry graph and SMOG readability formula: between seventh and eighth grade. The other textbooks used in the study and measured by the same readability formulas, ranged from grade seven through twelve.

Galatians and Romans, an independent study textbook by Paul Pomerville is produced by International Correspondence Institute, Brussels, Belgium and is intended for

*It was discovered that the text itself is somewhat out of date. The "A" passage contains a description of the former West African state Dahomey. It is now called Benin. Also, the capital of Benin (Dahomey) was transferred from Porto-Novo to Cotonou. In the "B" passage, Zaire is identified as "Congo" and the names of the cities of Leopoldville and Elizabethville are used instead of the current names of Kinshasa and Lubumbashi. However, in only two instances did students contradict the text and supply the correct name of the present capital of Benin.

widespread use in Africa and other English-speaking areas. This independent-study textbook is part of the College Division diploma program curriculum of ICI and was the first published from a total of 44 courses now in editing stages or yet to be written. Therefore, the findings of this research in relation to the readability of this textbook are critically important to ICI for the evaluation of its course writing and publishing program.

Cloze Test Preparation

Two passages from each textbook were randomly selected utilizing a table of random numbers for the specific page to be used for the Cloze test. The selections are indicated in Table 3.

TABLE 3
Selection of Passages

<u>Book</u>	<u>Passage "A"</u>	<u>Passage "B"</u>
1. Pearlman	pp. 42, 43	pp. 89 - 90
2. Williams	p. 39	p. 74
3. Perkins	pp. 42, 43	pp. 86 - 88
4. Pomerville	p. 32	p. 93

The seventh deletion pattern was used as has been discussed in the chapter on Review of the Related Research. One or more lines in each selection were left intact (See Appendix D) to provide an initial introduction to the passage. Successive seventh word deletions were then performed after the first word was deleted. Two passages were selected from each of the four books making a total of eight passages. Seven Cloze test forms, each based on a different word deletion, were developed, fifty-six Cloze tests in all.

TABLE 4
Cloze Test Code Numbering

<u>Book</u>	<u>Passage</u>	<u>Deletion</u>
1. Pearlman	A	1 through 7
	B	1 through 7
2. Williams	A	1 through 7
	B	1 through 7
3. Perkins	A	1 through 7
	B	1 through 7
4. Pomerville	A	1 through 7
	B	1 through 7

A stratified randomization of the tests for administration was planned. This means that each student took the same deletion pattern for each of the four textbooks. For example, student eight did the "B" passage, deletion number 4. His test paper was numbered: 1Bd4, 2Bd4, 3Bd4, and 4Bd4.

Subject seventeen took Cloze passage "A" deletion pattern 7. Her test paper was numbered: 1Ad7, 2Ad7, 3Ad7, and 4Ad7. Thus, each subject was given the same numbered deletion pattern from each of the four texts.

Cloze Test Format

The tests were typed on 8½ x 14½ inch paper; a standard length blank of twelve typewriter spaces replaced the deleted words. The blanks were numbered on the right-hand margin of the test (see Appendix D).

In each school the principal and teachers were briefed regarding the administration of the tests, and they examined the student questionnaire, the practice Cloze exercise, and several of the actual Cloze tests. The faculty questionnaire was also given to them and a time for the interview was set.

The Student Questionnaire

In each school an assembly was held just preceding the Cloze testing at which time the purpose of the testing was explained. The practice Cloze exercise was photocopied on the reverse side of the Student Questionnaire so that upon receiving the questionnaire the student immediately had both in hand. During the general assembly orientation was given as how to fill out the questionnaire and mention was also

made of the practice Cloze exercise. Then, the students were dismissed to their classrooms. The only exception occurred at the Mid-West Bible College in Ewu where the assembly-hall doubles for a classroom. There the students received their orientation and also worked the Cloze tests in the assembly-hall classroom.

One half hour was taken to fill in the Student Questionnaire. Circulating among the students, the teachers answered questions and verified information supplied by the students (see Sample Student Questionnaire, Appendix B).

The Practice Cloze Exercise

At Western Bible Institute, Central Bible Institute and College, and Eastern Bible Institute, the students dispersed to separate classrooms after the general assembly. (Students at Mid-West Institute worked in the assembly-hall classroom.) The teachers in these schools then supervised the completion of the practice Cloze exercise. The writer of this paper moved from class to class in three of these schools to answer questions that arose. Most of the students quickly understood the idea of the test and within an allotted fifteen minutes finished the practice exercise and exchanged their completed practice exercise and Student Questionnaire for the Cloze tests. However, those students who had not finished filling out the Student Questionnaire

The Cloze Testing

Each student received either an "A" passage or "B" passage Cloze test, deletion 1 through 7. Except for Western Bible Institute, the "A" and "B" passages were evenly distributed within grades. At Western the first year worked mostly "B" passages, while grades two and three did the "A" passages. In the other schools the passages were more randomly distributed among grades. During the testing the author moved from class to class to verify and collect the questionnaires. When data were missing, the teacher went to the student to obtain the information lacking on the questionnaire.

At each school the testing was untimed. It began about 9:30 a.m. in each school. A break was given after about one hour of testing or about two hours or more after the beginning of the general assembly and orientation, filling out of the questionnaire, doing the practice Cloze exercise, and starting the actual testing. After the break the students returned to finish the tests and worked, as necessary, until noon. With the exception of a few students who started late, the tests were then collected.

Scoring the Cloze Tests

As had previously been determined, the tests were scored both for exact-word replacement and for acceptable word replacements. The following steps were carried out:

1. An answer key for each of the fifty-six Cloze tests was prepared on 8 x 5 index cards.
2. Each test was first scored for its exact-word replacement. The number of exact-word replacements was noted at the top of each test.
3. The tests were scored a second time for the acceptable or contextually correct word replacement.
4. To double check on the exact-word replacement score and to facilitate checking the acceptable-word replacements, individual templates (see - through answer keys) were made and a double check was done on both the exact and acceptable-word replacement scores.

Criteria for the Acceptable-Word Replacement Scoring

The following criteria for scoring the acceptable-word replacement were adopted. These criteria were based on the similar procedure outlined and followed by Oller (1972a) and Stubbs and Tucker (1974).

1. Any non-grammatical form was excluded though the meaning might be exact.
2. Any blank which contained two words was excluded if only one word was correct. Occasionally, a two-word replacement contained the exact word. In this case, credit was given for a two word semantically correct word replacement.
3. Pronoun replacement for nouns were considered acceptable if contextually and grammatically correct.
4. Synonyms and contextually correct words were also accepted.
5. Misspelled words were counted as acceptable if they approximated the correct spelling.

Examples of Acceptable-Word Replacements

In Table 5 are examples of exact-word and parallel acceptable-word replacements as they appeared on the Cloze tests done by the Nigerian students. Each word replacement was coded according to the book passage, deletion number and the number of the word deleted found in the margin of each Cloze test (see Appendix D, Sample Cloze Tests).

TABLE 5

Examples of Acceptable-Word Scoring for Cloze Tests*

Cloze Test Code	Number of Word Replaced	Exact Word Replacement	Acceptable Word Replaced
1Ad7	47	thought	studies
1Ad7	11	utterance	speech
2Ad3	12	Jesus	He
2Ad3	47	done	committed
3Ad5	43	town	place
3Ad5	15	groups	parts
4Ad1	21	something	quite
4Ad1	8	mission	ministry
1Bd7	15	described	termed
1Bd7	44	at	in
2Bd1	7	benefits	blessings
2Bd1	31	with	to
3Bd4	6	electricity	it
3Bd4	31	think	see
4Bd6	23	the	his
4Bd6	17	See	Read

*See Appendix D, Sample Cloze Tests

The Faculty Questionnaire

Twenty-four teachers filled out the faculty questionnaire and were also interviewed. This was done in order to find out (1) to what extent the teachers of the students tested were aware of readability measures they could use in their instructional decision-making and classroom teaching, especially the application of Cloze procedure, and (2) what instructional strategies teachers were using to help their students read better.

Though the questionnaire and interview were similar in that they attempted to elicit feelings and beliefs, they also differed in that the interview provided flexibility, and the questionnaire, economy. The questionnaire made certain that each respondent received the same questions stated in the same way and made possible the gathering of information for specific ends. On the other hand, the interview allowed for some latitude in finding out additional information (Sax, 1968, pp. 214-218). Twenty-four questionnaires were returned, and the findings tabulated. Most of the interviews were recorded on cassette tape.

The questionnaire was photocopied on two-sides of 8½ x 14½ paper stock. Categories covered in the questionnaire were (1) types of printed materials used, (2) the types of supplementary instructional material used, (3) the criteria for textbook selection, and (4) instructional methodologies.

The Readability Measures

The traditional readability graph and formula were utilized to serve as a point of reference for the Cloze measures. The findings of the readability measures are contained in Appendix F.

The Fry Readability Graph

The Fry Readability Graph was applied as follows:

1. A sample of three 100-word passages from the beginning, middle, and end of each text was taken. Proper nouns were omitted.
2. The total number of sentences in each 100-word passage was counted and an average of the three numbers made.
3. The total number of syllables in each 100-word passage was counted. The total number of syllables was averaged.
4. The average number of sentences per 100 words and the average number of syllables per 100 words was plotted on the Fry graph and the approximate readability level was indicated.

The McLaughlin SMOG Readability Formula

The McLaughlin SMOG Readability Formula was applied as follows:

1. A sampling of ten consecutive sentences from the beginning, middle, and end of each of the texts was taken. (The sampling for the SMOG and Fry was taken from the same portions of the texts.)
2. The number of words in each sampling with three or more syllables was recorded and totaled.

3. The square root of the nearest perfect square of the total was recorded.
4. The number three was added to the square root producing the approximate readability level. This approximates the reading level necessary for a person to fully understand the written material.

Treatment of the Data

With the assistance of the Office of Research Consultation (ORC) at the College of Education, Erickson Hall, Michigan State University, and with the help of a programmer at the Computer Center also at Michigan State University, the data were punched into IBM computer cards from an eighty-column coding sheet (seventy-six columns were utilized). Northwestern University's Statistical Package for the Social Sciences (SPSS) was utilized in writing a program for the analysis of the data.

The Cloze Test Scores

The Cloze tests were scored for each student and the total scores of all students for each school, including all books tested, were plotted on a graph. The scores were plotted according to their central tendency (mean) and dispersion (standard deviation). However, the Cloze scores of books two and four were each plotted on a graph for all schools. An analysis of variance was done to try to

determine similarities or differences that might exist between schools in relation to the four books and deletion patterns of each passage.

Additional Data

The grade point averages and entrance examination scores of participating students were correlated with the Cloze scores utilizing the Pearson product moment correlation formula. Standard deviations were calculated for each book.

Simple relationships of some student characteristics with the Cloze scoring were also computed. These included 1) age and Cloze scores, 2) experience with correspondence study, 3) number of languages spoken, and 4) total years in school. The results of these findings are reported in Appendix I.

Summary

1. A descriptive method of research was utilized in the investigation.
2. The subjects selected for the study were students in the four Assemblies of God ministerial training institutes located throughout Nigeria, West Africa (five schools).
3. The textbooks selected were from those either

used in the school, adopted for use, or considered to be on the same level as the reading ability of the students tested.

4. A seventh-word deletion Cloze test pattern was used along with a format of typed and photocopied text that replaced deleted words with a standard length underlined blank numbered in the righthand margin of the test paper.

5. The tests were administered with the help of the faculties of the schools where the testing took place.

6. The Cloze tests were scored by the exact-plus-acceptable word scoring procedure. The author of this study personally verified all test scores.

7. Each faculty member of each school filled out a questionnaire regarding instructional procedures used to assist their students in reading.

8. The Fry and SMOG readability measures were calculated for each passage.

9. The data were processed by computer at Michigan State University according to total Cloze scores on each book, and the interaction of scores with school, passage, and deletion pattern. Student characteristics and Cloze scores were compared where possible.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

In this chapter the data are presented according to guidelines delineated in the research questions posed in Chapter I. In the first section of the chapter the findings of the statistical analyses of the interactions between school, Cloze passages, and deletion patterns are given. In the second major section the results of the Cloze tests are presented along with a discussion of the findings relative to the independent-study textbook, Galatians and Romans. A brief mention is also made of the readability measures that were applied to the textbooks used in the study. The faculty-interview findings are then reported, followed by a comparison of the findings of the investigation.

Validation of the Cloze Tests in Africa

The validity of the Cloze procedure as a testing instrument for reading and readability has repeatedly been established in relation to standardized reading tests. This fact was treated in Chapter II of this thesis. However, when the question of designing this study came up in the initial preparation, one essential factor remained to be accounted for by an analysis of the data after the tests were given. The following question required an answer: Were the African schools more alike than different in relation to the Cloze test passages and deletion patterns of the books tested? If significant differences in performance on the Cloze tests were found between schools and the students who studied in them in relation to the above-mentioned variables of book, school, passage, and deletion pattern, then the results of the Cloze tests could not be treated across schools but only within schools. There would not be a statistically valid sample from which to generalize. No meaningful comparisons among schools could be made if the findings showed that significant differences did exist.

A series of t tests were run on the deletion patterns and the findings are revealed in Table 6. The mean scores of students by deletion patterns for each book are listed.

Results from Testing the Instrument

TABLE 6

t Tests Between Deletion Patterns by Books

<u>Deletion</u>	<u>Book 1</u>	<u>Book 2</u>	<u>Book 3</u>	<u>Book 4</u>
D1	25.59	27.75	24.92	28.64
D2	21.90	25.66	23.92	29.81
D3	21.34	26.63	23.59	25.32
D4	20.70	26.34	24.44	28.78
D5	17.75	28.32	20.67	25.50
D6	20.37	30.44	26.82	25.46
D7	22.66	30.18	23.93	25.18

The t test is used to determine just how great a difference there must be between two means for the mean (difference) to be judged significant, that is, to ascertain a significant departure from differences which might be expected by chance alone (Popham and Sirotnik, 1973). The comparison of the means of each deletion pattern by book was interpreted for statistical significance by consulting the t values of differences between means that have been determined. The statistical directionality is shown across books and can be seen down the deletion patterns as well. If we compare the means across books in Table 6 we see that between books 3 and 4 in deletion pattern 1 there is a difference of 3.72 between means. This is not a very large difference. But in deletion pattern 5, subtracting the mean of book 1 from that of book 2 leaves a difference of 10.57. This is a much larger spread. Also, in

deletion pattern 6, the difference between the means of books one and two is 10.07.

Differences between deletion patterns are also seen down each column of books one through four. The difference between the highest and lowest mean of books one to four is as follows: book one, 7.84; book two, 4.78; book 3, 6.15; and book four, 4.63.

Because of these differences it was considered advisable also to run an analysis of variance which would take into account differences in schools, books, and deletion patterns. Table 7 gives the results of the analysis of variance which compares schools, books, and deletion patterns. If it is considered that any F value is only significant above alpha .050, the following is noted for each book:

Book 1. No significant difference is seen for school and deletion at .002 and .001 respectively, but a statistically significant difference is seen for the interaction between school and deletion (D) at .185.

Book 2. There is no significant difference for school at .029, but deletion is significant at .050. The interaction of school and deletion at .334 shows a statistically significant difference.

Book 3. No significant difference is noted for school at .001 and there is none for deletion at .069, but the

TABLE 7

Analysis of Variance of Book, School and Deletion					
Book	Source of Variation	Sum of Squares	DF	Mean Square	Significance of F
1	School	1123.364	4	280.841	4.380
	Deletion	1911.361	6	318.560	4.968
	School D	1947.359	24	81.140	1.265
2	School	877.947	4	219.487	2.744
	Deletion	1020.130	6	170.022	2.126
	School D	2125.359	24	88.557	1.107
3	School	2024.660	4	506.165	5.915
	Deletion	1014.321	6	169.054	1.976
	School D	2597.608	24	108.234	.185
4	School	759.069	4	189.767	2.837
	Deletion	1295.624	6	215.937	3.228
	School D	1788.948	24	74.539	1.114

interaction between school and deletion at .185 shows some statistically significant difference.

Book 4. As in book one, no significant difference is seen in book four for school (.025) or deletion (.004), but the interaction again is significant at .326.

Evidence in the data in terms of school and deletion pattern seem to support the absence of significant differences. Yet in each case, for the F value of the interaction between school and deletion, a statistically significant difference is seen. Though these differences are statistically significant, it does not follow that they are meaningful.

A similarity of performance on the Cloze tests between schools can readily be seen upon examining the scores plotted on the graphs for Figures 2 and 3. Each of these two graphs combines the scores of one book for all five schools: Figure 2 -- Declare His Righteousness (p. 74), and Figure 3 -- Galatians and Romans (p. 76). The Cloze scores are indicated by the central tendency (mean) and dispersion (standard deviation) for each school. As can be noted, the majority of the students in all five schools were within the instructional and independent-study levels in relation to each of these two books. For all schools a summary of Cloze scores by mean and standard deviations is given on Table 8 (p. 76).

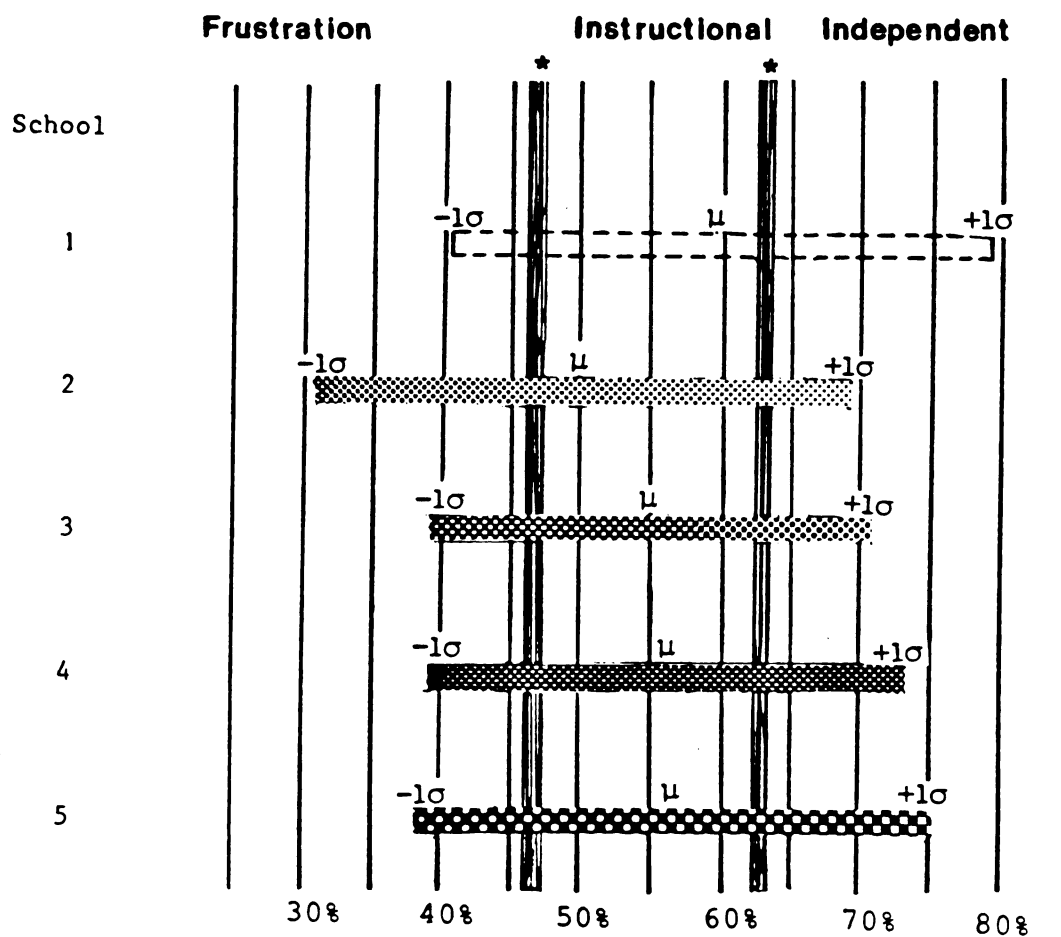


Figure 2. Book 2, Declare His Righteousness - Range of Cloze Test Scores: Central Tendency and Dispersion

*46% to 63% is the accepted range of instructional level of study

Source: Boyce, 1974, pp. 75, 76

μ - mean average score

σ - standard deviation

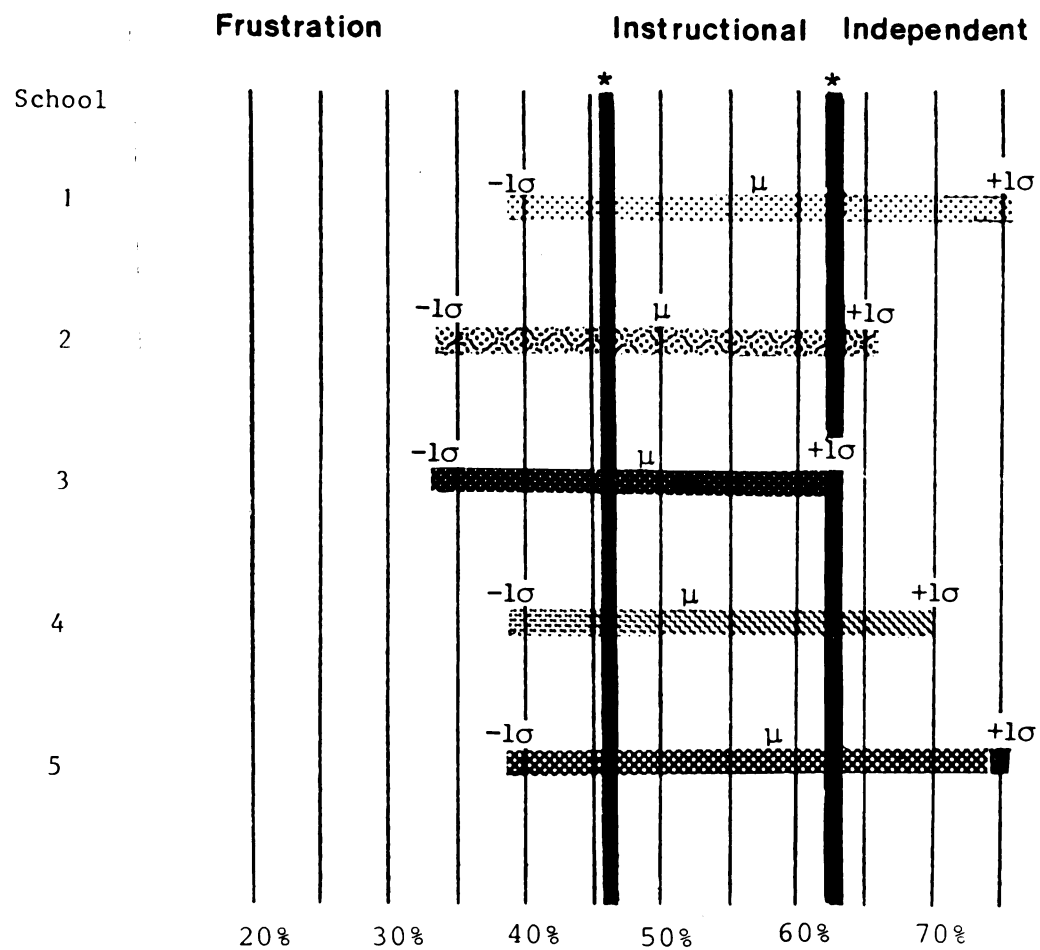


Figure 3. Book 4, Galatians and Romans - Range of Cloze Test Scores:
Central Tendency and Dispersion

*46% to 63% is the accepted range of instructional level of study

Source: Boyce, 1974, pp. 75, 76

μ-mean average score

σ-standard deviation

TABLE 8

A Summary of Cloze Scores by Mean and
Standard Deviation for Schools and Books

		<u>School</u>									
		1		2		3		4		5	
<u>Books</u>		u	o	u	o	u	o	u	o	u	o
1		23.40	9.01	18.14	8.30	19.55	7.28	22.39	7.38	22.27	9.51
2		30.31	9.92	24.85	9.41	27.69	7.86	28.05	8.60	28.18	9.34
3		27.70	9.03	19.03	9.16	22.56	8.87	24.51	10.10	25.47	9.20
4		28.87	9.37	24.81	8.12	23.97	7.31	27.15	7.83	28.18	9.03
Total		27.51	9.33	27.70	8.74	23.44	7.83	25.52	8.47	26.02	9.27
Averages											

TABLE 8B

<u>Book</u>	<u>Average Means</u>	<u>Average Standard Deviations</u>
1	21.15	8.29
2	27.81	9.02
3	23.85	9.27
4	26.59	8.33

u - average mean score

 σ - standard deviation

The Student Questionnaire

All of the students who participated in the testing filled out a questionnaire. A number of students had a very difficult time completing the questionnaire without the help of the teachers. Although an appraisal of students' characteristics was not one of the stated research questions, a consideration of what the students reported on their questionnaires can provide a better understanding of them.

As was mentioned before in this study, the subjects selected for this research came from a cross-section of Nigeria geographically and linguistically. They had a wide range in years of formal schooling: one to seventeen years with a mean of 8.3 years. The age of the students was also found to vary greatly: from fifteen to sixty years, though the reported ages of most of the 365 subjects fell in the age twenty to thirty bracket.

TABLE 9

Range of Ages

<u>Age</u>	<u>Number of Subjects</u>
1. Under twenty	28
2. Between twenty and thirty	245
3. Over thirty	92

On the questionnaire the students were also asked to list secular employment prior to enrollment in theological

school. Their responses were classified into six categories: workers in offices, industry, commerce and trade, farming, the army, and student. Seventy students reported previous employment in white collar jobs in offices or in civil service. Farming was reported as the previous occupation of 113 students, while there were 117 who reported working in various types of business enterprises including trading. The number of people in the industry category was the highest with 122 persons. Ten students had formerly been in the army and eight had no previous job experience, but had been students. It is interesting to note from this information that the majority of these students were adults who had had a considerable amount of secular work experience before becoming students in the Bible training schools.

Included on the questionnaire was one question intended to obtain information about the students' reading habits. Students were asked to indicate the types of reading materials they had voluntarily read within the previous four weeks. A remarkably high number of subjects, 298 out of 371, reported reading books not assigned them in their regular classes. Those reporting reading newspapers numbered 169, while the least number of students reported reading magazines, 106. In two of the schools daily newspapers were made available to the students, and school libraries all contained some selection of magazines.

On the questionnaire the students were asked to indicate whether they had ever taken some kind of correspondence course. Out of 371 reporting, 106 indicated taking and completing a correspondence course. Forty-six had taken studies by correspondence but had not completed the studies they had begun.

It can be seen from this short appraisal of student characteristics that those who participated in this study had a fairly broad background of life experience before entering theological school. They also varied widely in years of formal schooling and job experience as well as in age. As has been mentioned previously, the students also differed considerably in functional language abilities.

Results of the Cloze Testing

Chapter I outlined the language problems of Nigerians and stated the rationale for this study. Teachers and designers of instructional materials need to know how to better match reading materials to reading abilities of students in general. This study explored matching instructional materials to the reading ability of Nigerian students in particular. The review of research seemed to indicate the lack of English skills of Nigerians in relation to Ugandans, Australians, and U. S. students.

The Levels-of-Study Graph

The assumption was made that a Cloze test score can be related to a multiple-choice test score using the range of scores according to the research reported in Tables 1 and 2 in Chapter II. These tables presented the comparison between multiple-choice and Cloze test scores that led to this assumption (pp. 37 and 39).

Figure 1 (p. 40) is an attempt to provide a frame of reference by which to interpret Cloze scores in Nigerian schools. It is a graphic presentation of the findings of some of the major research regarding Cloze and multiple-choice testing. For this study the figure serves as a model for the presentation and interpretation of Cloze scores.

The Schools

Western Bible Institute - School One

In Figure 4 the results of the Cloze testing at school one are given. This school is situated between Lagos and Ibadan — two of Nigeria's major cities. Of the fifty-four students at school one, the majority of Cloze scores for each book was in the instructional range. Year one students were excluded from the results of the testing of book one. The first-year students do not study this book until their second year.

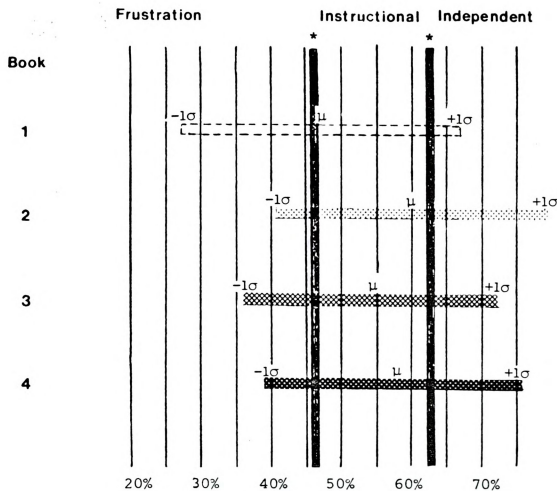


Figure 4. School 1 - Range of Cloze Test Scores:
Central Tendency and Dispersion

*46% to 63% is the accepted range of instructional level of study

Source: Boyce, 1974, pp. 75, 76

μ - mean average score

σ - standard deviation

The graph, Figure 4, shows that books one and three were the most difficult for this school, especially book one, while the scores of books two and four are favorably compared to each other. However, the subjects scored slightly higher on book two. In addition, according to Figure 4, the majority of students scored in the instructional-independent study range. About twenty-six percent, or about fourteen students, were at the independent-study level on books two and four. Central tendency and dispersion of book one is similar to books two and three.

Eastern Bible Institute - School Two

For Eastern Bible Institute, school two, the Cloze scores are plotted by book on Figure 5; fifty-five students at the school are represented on the graph. Although year one is excluded from the calculation of book one, the book was still exceptionally difficult for years two and three. Once again the Cloze scores on books two and four were within the same level of study range. The mean for this school (as well as for all schools) is found on Table 9. The geography book (three), at about the same level as book one, was also very difficult for all students at this school. About forty percent of the students from school two were on the frustration reading level, according to the Cloze scores (about twenty students). Similarity of

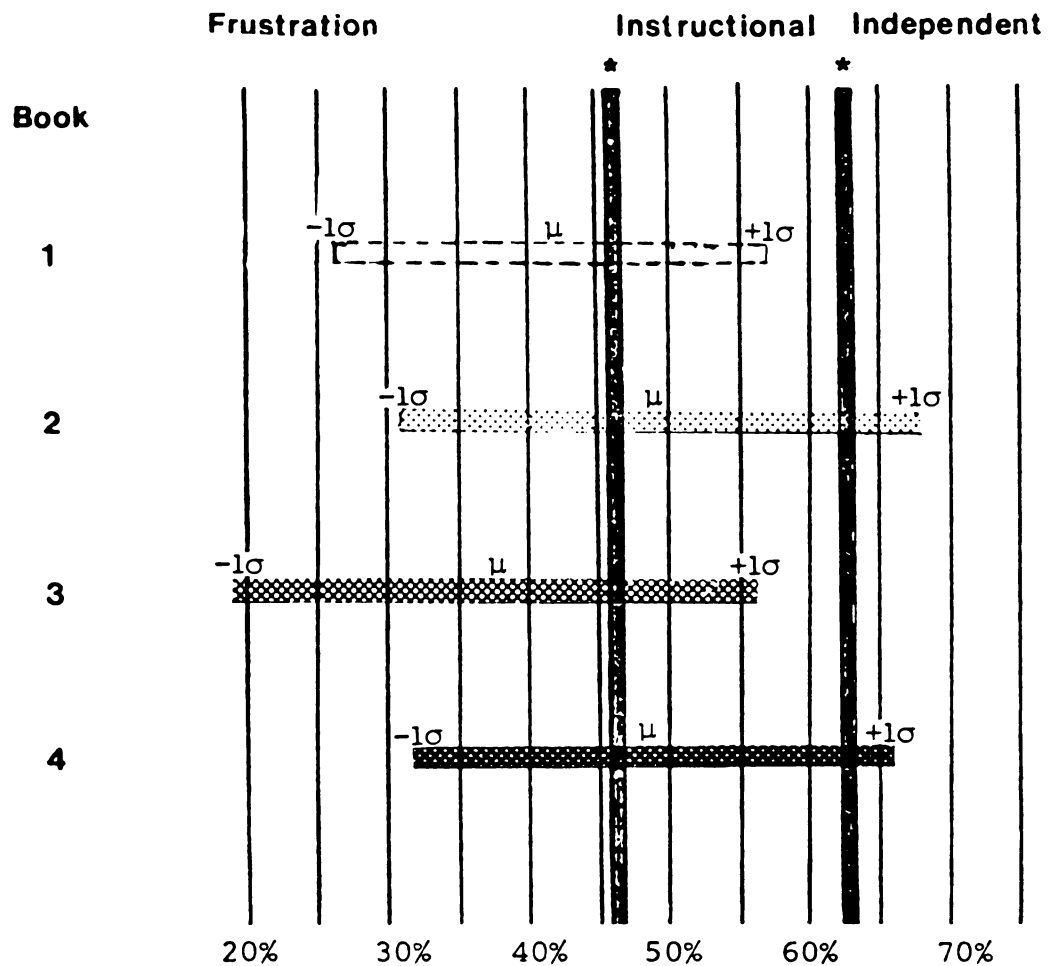


Figure 5. School 2 - Range of Cloze Test Scores:
Central Tendency and Dispersion

*46% to 63% is the accepted range of instructional level of study

Source: Boyce, 1974, pp. 75, 76

μ - mean average score

σ - standard deviation

central tendency and distribution is seen for books one and three, and again for books two and four.

Mid-West Bible Institute - School Three

Approximately half of school three (Mid-West) students' Cloze scores were at or above the instructional level; almost one-half of the thirty-seven students. Very few students, according to the Cloze scores at Mid-West, were reading at an independent study level. The Cloze scores for this school are reported on Figure 6. The distribution of scores on each book was fairly uniform.

Central Bible Institute - School Four

School four (Central Bible Institute) had 117 students, the largest student body of all the schools. About fifty percent of the students were reading on the instructional level and about twenty-six percent, or thirty students, are recorded as reading the textbooks at the independent study level. Again, books two and four have about the same distribution of scores on the graph (Figure 7) in this school as in the other schools.

Central Bible College - School Five

Eighty-seven scores of subjects in school five, Central Bible College, are plotted on Figure 8. The administration of this school requires that a student score ninety percent or above on an entrance placement

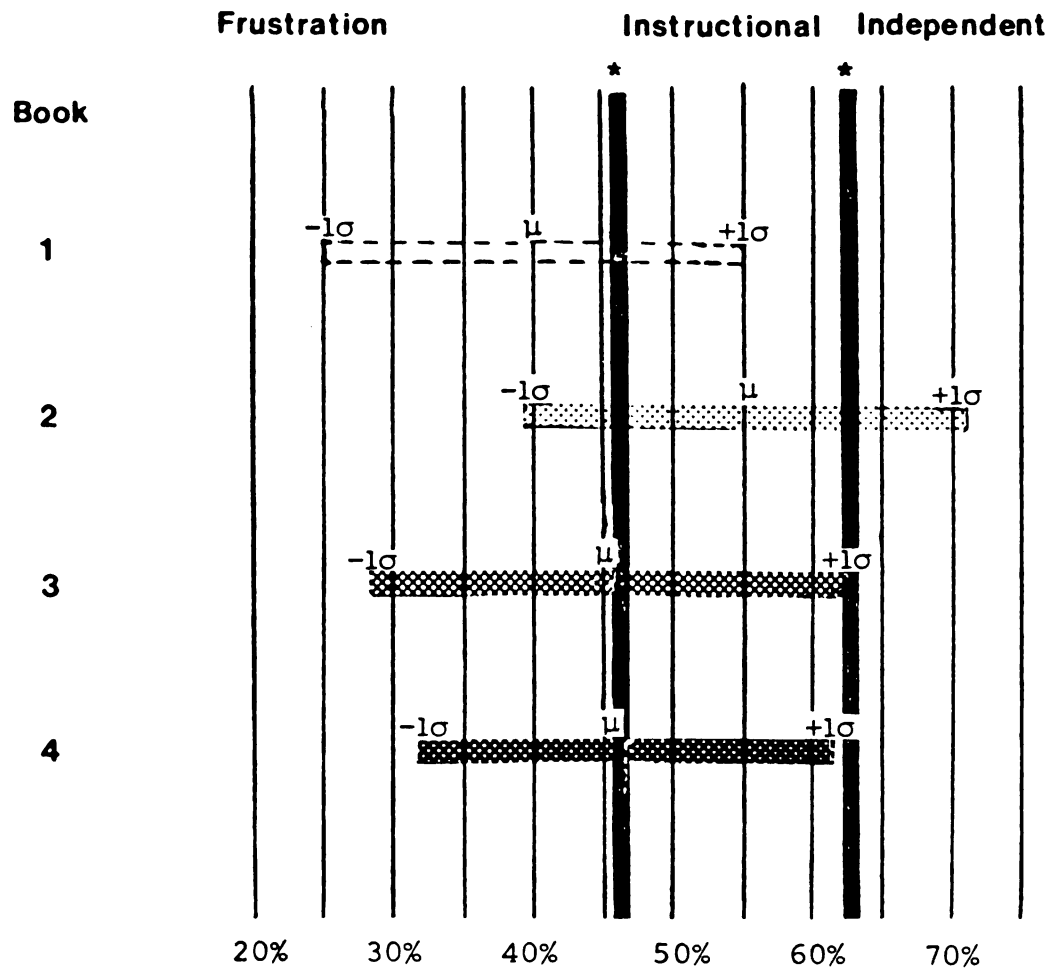


Figure 6. School 3 - Range of Cloze Test Scores:
Central Tendency and Dispersion

*46% to 63% is the accepted range of instructional level of study

Source: Boyce, 1974, pp. 75, 76

μ - mean average score

σ - standard deviation

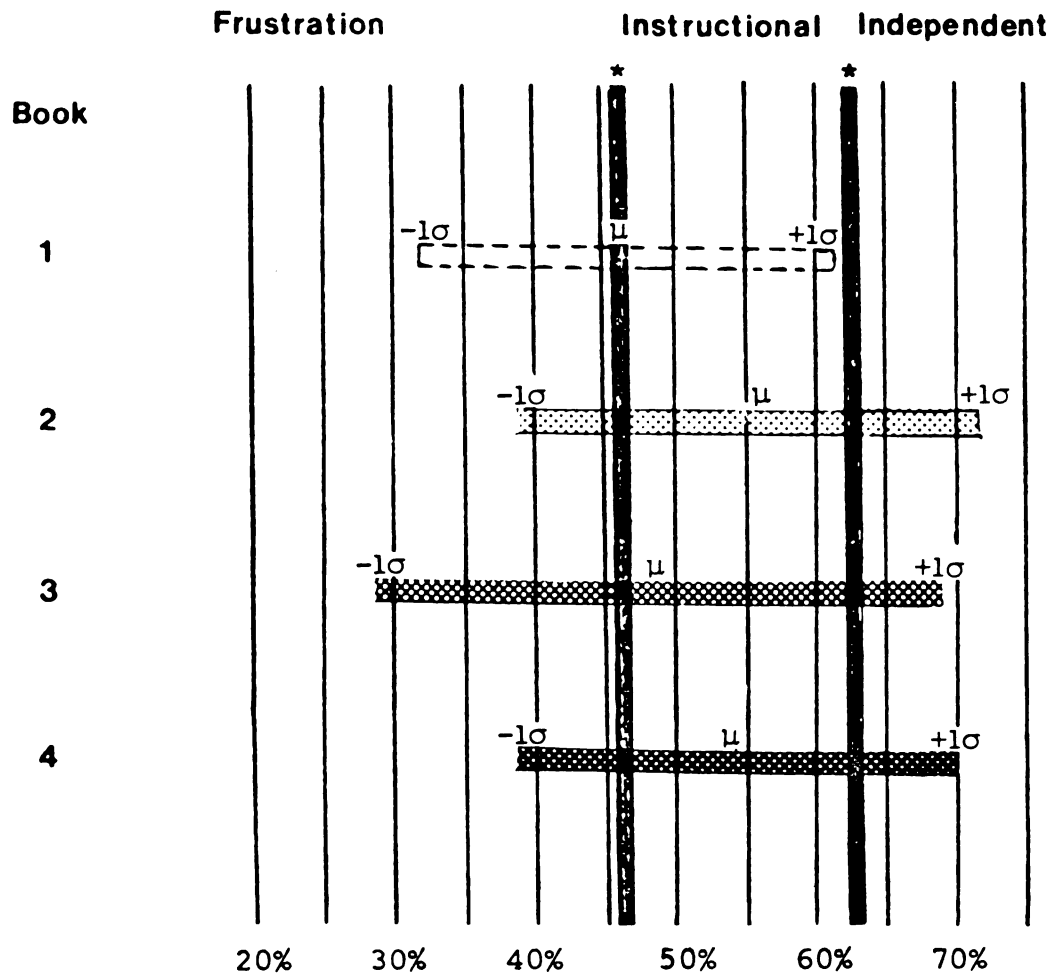


Figure 7. School 4 - Range of Cloze Test Scores:
Central Tendency and Dispersion

*46% to 63% is the accepted range of instructional level of study

Source: Boyce, 1974, pp. 75, 76

μ - mean average score

σ - standard deviation

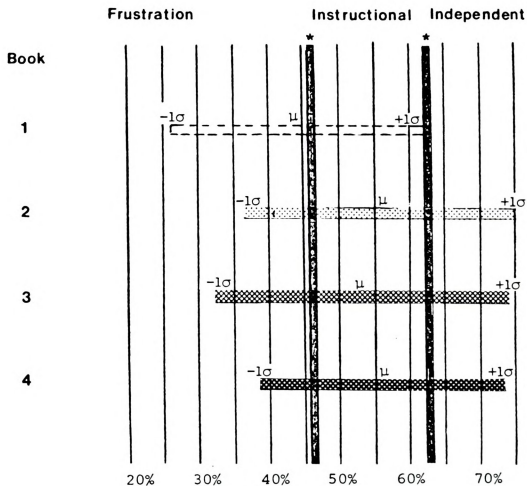


Figure 8. School 5 - Range of Cloze Test Scores:
Central Tendency and Dispersion

*46% to 63% is the accepted range of instructional level of study

Source: Boyce, 1974, pp. 75, 76

μ - mean average score

σ - standard deviation

examination for acceptance into the school. The Cloze scores for school five are most similar to the scores of school one. However, the difference by means per book is from one to two points, school one scoring slightly higher (Table 8, p. 76). Book one was difficult for school five students as well as for the other students when a comparison is made with scores for all books and schools. In relation to the other books, book three has a slightly greater distribution than the other three books. Books two and four for school five, as for the other schools, proved to be the best matched to their reading ability according to the Cloze scores. Book four had the smallest dispersion of scores. The greater majority of students in this school scored in the instructional to independent study levels.

Galatians and Romans Independent-Study Textbook

The Galatians and Romans independent-study textbook published by International Correspondence Institute is especially designed and produced for students like those who participated in this investigation. It is part of a projected curriculum of over forty volumes that are now in the process of being written and published especially for use in the developing nations. For this reason special attention has been focused on it. This is not to say that two Cloze tests taken by about 350 African

students is an infallible measure or predictor of the academic success of students who will actually study the whole book. Too many other variables interact in the learning process to make such a prediction. However, it was considered that a pilot project on readability with Cloze procedure could help clarify some of the problems associated with readability that are encountered or associated with the design and implementation of instructional materials for students like the Africans who participated in this study.

Table 10 below reports the findings of the Cloze testing with the textbook, Galatians and Romans. For each school the mean score and standard deviation is given. This same information is plotted on Figure 3, page 75. According to the graph, the means all fall in the instructional level of study.

TABLE 10

Galatians and Romans, Results of Cloze Testing
by School, Means, and Standard Deviations

<u>School</u>	<u>Mean</u>	<u>Standard Deviation</u>
1	28.87	9.37
2	24.81	8.12
3	23.87	7.31
4	27.15	7.83
5	28.80	9.03

The greatest difference between means was in schools one and three - five points. The largest difference in standard deviations was found in these two schools also. Schools one and five had the largest dispersions (standard deviations) of scores, while the lowest standard deviation was reported for school three.

The lowest-scoring schools for Galatians and Romans were two and three. These two schools scored lowest on the other four books as well (Table 8). However, school three does have the lowest standard deviation.

Table 11 below gives a summary for Galatians and Romans of the numbers of students by year in school and by levels of study. The levels of study are the range of Cloze scores used in this study to interpret student performance.

The table also reports the totals for all categories: grade, number of students, and levels of study.

TABLE 11
Galatians and Romans: A Summary of
Numbers of Students by Year and
Levels of Study

Year in School	Total No. of Students by Year	<u>Levels of Study</u>		
		Frustration Below 45%	Instructional From 46% to 63%	Independent Above 64%
First	159	49	78	32
Second	80	22	37	21
Third	112	19	75	18
Totals	351	90	190	71

Readability Measures

It could be expected that Edward Fry, the author of the "Fry Readability Graph" (Fry, 1968), would be biased in relation to the Cloze procedure, but perhaps he is not entirely wrong. In an article written for the Journal of Reading entitled, "A Readability Formula That Saves Time," he gives his reasons for preferring his Readability Graph over the Cloze test in spite of the greater validity of the latter:

Were it not for the enormous amount of time this method takes, Cloze procedure would be an excellent way to determine readability. In addition to the time it takes to make the Cloze passages, a number of different passages must be tested at the same time on the same group of children. One cannot return to the same group of children several months later, for their reading ability will have changed and the Cloze error scores will not be comparable. As a research tool the method is excellent but for practical purposes it is all but impossible to use (Fry, 1968).

In this study reference has been made to the two readability measures developed by Fry and McLaughlin. A detailed account of conventional readability measures can be found in other books listed in the bibliography of this study. As with the Cloze procedure, conventional readability formulas must be used in certain ways to assure their maximum utility. A detailed discussion of guidelines for employing these formulas can be found in

Van Rooy (1973, pp. 7-9).

In Table 13 the grade levels of the four textbooks used in this study as calculated by the Fry formula and SMOG readability graph are given. The calculation data are provided in Appendix F.

TABLE 13

The Fry and SMOG Readability Measures

<u>Book</u>	<u>Grade Level</u>	
	<u>Fry</u>	<u>SMOG</u>
1. Pearlman	9	11
2. Williams	7	9
3. Perkins	6-7	8
4. Pomerville	7	9

Faculty Questionnaire — Interview

All of the twenty-four faculty members who filled out the questionnaire also made themselves available for an interview. The analysis of the data is presented in Table 14.

During the interview sessions the respondents were asked to elaborate on any of the sections of the questionnaire. They showed a keen interest in the "Cloze procedure" study. From the table we can see that all of the teachers utilized required textbooks for their

TABLE 14

Summary Of
Faculty Questionnaire on Reading and
Instructional Strategies

1. Did you use any of the following types of printed materials with your classes:

	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
a. Required textbooks	<u>24</u>	<u> </u>	<u> </u>
b. Workbooks	<u>3</u>	<u>9</u>	<u>7</u>
c. Supplementary textbooks	<u>11</u>	<u>1</u>	<u>9</u>
d. Supplementary handouts — notes	<u>9</u>	<u> </u>	<u>15</u>
e. Library readings or research	<u>15</u>	<u>1</u>	<u>7</u>
f. Other <u> </u>	<u>2</u>	<u>1</u>	<u>2</u>

2. Did you use any of the following supplementary materials?

a. Provide tapes of your class lectures	<u> </u>	<u>19</u>	<u> </u>
b. Provide vocabulary tapes to aid students with required and difficult vocabulary	<u> </u>	<u>19</u>	<u> </u>
c. Provide vocabulary lists to aid students with special vocabulary	<u>12</u>	<u>7</u>	<u>6</u>
d. Provide vocabulary tapes to aid students with general vocabulary	<u> </u>	<u>18</u>	<u> </u>
e. Provide taped explanations of the assigned written materials	<u> </u>	<u>19</u>	<u> </u>
f. Provide study questions to guide your students toward getting the literal understanding of what they read	<u>9</u>	<u>6</u>	<u>8</u>

Table 14 (continued)

Faculty Questionnaire (continued)

g. Provide explanations of the assignments so that your students can read the material analytically	<u>16</u>	<u>4</u>	<u>3</u>
h. Provide study guides that have been prepared by a publishing house	<u>4</u>	<u>13</u>	<u>4</u>
i. Provide instruction to your students on the application of study techniques that will help them preview materials and guide their reading in an organized way	<u>11</u>	<u>5</u>	<u>6</u>
3. How were the books selected you used in your class?			
a. Chosen by yourself		<u>6</u>	
b. West African Board of Education		<u>15</u>	
c. A local school committee		<u>6</u>	
4. When the books were selected by you or within your school by a committee were any of the following factors considered?			
	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
a. Authorship	<u>16</u>	<u> </u>	<u>3</u>
b. Publishing House	<u>15</u>	<u> </u>	<u>4</u>
c. Readability level of the text or printed materials as determined by the application of a readability formula or formulas	<u>9</u>	<u>7</u>	<u>4</u>
d. Readability level of the text or printed materials as stated by the publisher	<u>7</u>	<u>5</u>	<u>6</u>

Table 14 (continued)

Faculty Questionnaire (continued)

e. Readability level of the text
based on your judgment derived
from comparing the text with
other available textbooks 16 2 1

f. The format of the book including:

1) Kind and type of print	<u>13</u>	<u>4</u>	<u>1</u>
2) Illustrations	<u>10</u>	<u>2</u>	<u>2</u>
3) General appearance of the printed material	<u>10</u>	<u>3</u>	<u>3</u>
4) Reference guides	<u>6</u>	<u>7</u>	<u>3</u>
5) Paragraph divisions	<u>8</u>	<u>5</u>	<u>3</u>
6) Chapter divisions	<u>10</u>	<u>1</u>	<u>2</u>
7) Density of fact presentation	<u>13</u>	<u> </u>	<u>2</u>
8) Interest appeal	<u>14</u>	<u>1</u>	<u>1</u>
9) Abstractness of treatment	<u>5</u>	<u>4</u>	<u>4</u>

5. Which methods do you use that seem to work best in helping
your students read better and understand better what they
read

courses, while only three of them required the use of workbooks. Eleven of the faculty reported using supplementary textbooks all of the time, and nine indicated employing supplementary texts some of the time. Most did not make handouts or notes a consistent part of their instructional strategy, but library readings and research were required by most of the teachers.

None of the respondents provided tapes of the class lectures or vocabulary tapes to help students with difficult words. But one of the teachers states that he encouraged students to bring tape recorders to class, and personal observation confirmed that students did utilize tape recorders in various ways for their studies. Twelve of the respondents indicated use of vocabulary lists to assist students with special vocabulary, while nine of the teachers provided study questions or instructions in order to help their students understand the literal meaning of what they had read. Six indicated not using study questions, while eight did utilize them sometimes.

Sixteen out of the twenty-four respondents did provide explanations of their class assignments to help students read the material analytically. Only four used study guides prepared by publishing houses. A number of the teachers mentioned in the "Methods-You-Use-That-Work-

Best" category in oral reading with students asking and answering questions on the reading.

Most of the textbooks were not selected by teachers themselves but by the West African Board of Education or by a local school committee. Several of the Board members were interviewed and their comments are included below.

Though some of the faculty indicated that they considered readability factors in the selection of text materials, at the interview session they stated that they really had not been aware of any formal way of assessing readability either with the traditional formulas or by Cloze procedure. Readability formulas were not applied in the selection of textbooks. However, the teachers did use informal methods for assessing the readability of instructional materials. They compared available texts before making their choices. They also considered factors relating to the format of the books, including kind and type of print, chapter divisions, density of fact presentation, and interest appeal. One teacher considered the length of the book in order to make sure it "fit the course program for the semester."

For English books, one teacher indicated taking into account the frequency of exercises in the book and their relationship to actual needs of the students. Another mentioned urging students to read the Bible in several language translations and to use the dictionary to "get the

dictionary habit." In English language studies this same teacher mentioned giving comprehension drills with multiple-choice answers and using a publisher's card system which included phonics and word building. The card drill is made available from the library for daily use for what are described as "the more eager students" who want to work themselves up to higher levels of reading and transfer into the upper levels of English studies. One of the teachers also mentioned having students read out loud individually and correct each other. Another teacher had students listen to themselves on tapes which helped them assess their own progress in the English language. This same teacher had students read before the class and then the whole class questioned the reader on what was read.

Finally one of the schools has a continuous spelling bee going on all year and periodically holds a prize-winning contest. Enthusiasm ran high in one of the sessions the author attended.

One factor became evident in the interview: teachers were interested in helping their students learn and read better. They themselves wanted to learn more about teaching.

Comparison of the Results

The results of the Cloze testing method tended to confirm the fact that the Nigerian students who took the tests do face many problems in English language learning and lack many essential English language skills.

Book 1 - Pearlman

Book one was seen to be the most difficult for all students in all schools. The lowest scores within schools for all books were also on book one. The readability formulas also tended to confirm the difficulty level of this book assigning it a grade level of eleven years, the highest of any of the four books. Students' scores were in the instructional range for this book in only two of the schools; that is, on the basis of one standard deviation. Very few students would be in the independent study score range.

Book 2 - Williams

The Cloze scores for book two were consistently higher than for the other books in all schools regardless of school or deletion pattern. The readability grades assigned to this book by Fry and SMOG, respectively, were seven and nine. Book two is consistently located on the graphs in the instructional level range of scores. The book was read best

by schools one and five. More students were in the independent study level on this book than on any other book.

Book 3 - Perkins

Perkins, book three, was assigned the lowest (easiest) readability level by the Fry graph and SMOG formula. The mean average scores for book three were somewhat higher than for book one but lower than for books two and four. The dispersion (standard deviation) for this book was larger than for the three other books (Table 8).

Book 4 - Pomerville

The mean average Cloze score for Galatians and Romans was greater than the means of books one and three but less than book two by 1.22 (Table 8). Figure 3, page 75, summarizes the range of Cloze test scores by central tendency and dispersion. On the graphs, Cloze scores for book four are all in the instructional level range (standard deviation for school three is 7.31 and the mean is 23.97 - the Cloze percent score extends to 62.56, almost to the independent-study level of 63%).

More students are in the frustration level on book four than are in the independent-study level. However, the average across schools of the standard deviations of book four is lowest of all four books: 8.33 as compared to 9.02 for book two.

Summary

1. Although conclusive evidence for Cloze test validity was not established, there were sufficient statistical grounds to make meaningful generalizations regarding the results of the Cloze testing.

2. The Nigerian students seem to differ from one another in terms of the following: age, former schooling, and job experience.

3. According to the Cloze scores plotted on the level-of-study graphs it can be stated that:

a. The majority of Cloze scores for school one were in the instructional to independent-study level. About the same number of scores were in the frustration level as scores in the independent-study level.

b. About forty percent of the Cloze scores were in the frustration level at school two, with only a minimum of scores in the independent-study level for books two and four.

c. In school three fifty percent of the Cloze scores for books three and four were in the instructional level while fifty percent were in the frustration level. Book two scores were the highest, book three the lowest. Average distribution of scores for all books was lower than in all other schools.

d. About seventy-five percent of the students' scores in school four were in the instructional to independent-study levels. The highest standard deviation (dispersion) for book three was in this school. The difference in the standard deviation between the other three books was smaller: book one, 7.38; book two, 8.60; book three, 10.10; and book four, 7.83.

e. In school five there was a very small difference between mean average scores or between standard deviations for books one, two, and three. Book four was the exception in relation to the mean average score. The standard deviation was .48 lower than the highest standard deviation. Most Cloze scores were in the instructional to independent-study levels.

4. Cloze scores for book one were the lowest of all four books. Book three Cloze scores were the next lowest, followed by book four and book two. Students scored highest on book two. The average standard deviation for book one was the lowest, followed by books four, two, and three respectively. The highest average mean score was for book two, followed by books four, three, and one.

5. About twenty-five percent of the Cloze scores for Galatians and Romans were in the frustration level, fifty-four percent of the scores were in the instructional level,

and twenty-one percent were in the independent-study level. Standard deviations varied from a high of 9.37 in school one to a low of 7.31 in school three. The average standard deviation for all schools was 8.33, or two percentage points higher than the lowest standard deviation (book one).

6. The Fry and SMOG readability measures used in the study tended to be more accurate in relation to the reading ability of the students in the measurement of the theological content materials than in the measurement of the geography textbook.

7. The results of the Cloze test assessment of the four textbooks seem to confirm previous findings regarding English-language reading deficiencies of Nigerian students.

8. Teachers use different types of standard printed materials for their teaching (textbooks, handouts, etc.), but very little use is made of supplementary materials except vocabulary helps (lists) and study questions. Classroom explanations of assignments and study techniques were given by the teachers. Very few teachers had any information on assessing readability, but used informal criteria to determine the reading level of instructional materials. Format consideration for the choice of textbooks was indicated by most teachers as a consideration for textbook choice.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study was carried out to: (1) determine the readability of four textbooks with Cloze procedure testing by comparing selected students' Cloze scores with an established range of Cloze criterion scores, (2) assess what the teachers do in the schools studied to match instructional materials to their students' reading ability, and (3) determine what instructional strategies the teachers in these Nigerian schools use to help their students better understand what they read and study.

In this chapter a summary is given of the problem, procedures followed in the study, and the listings of the findings, the conclusions and implications of the study are given, and recommendations are made for further research.

Summary of the Study

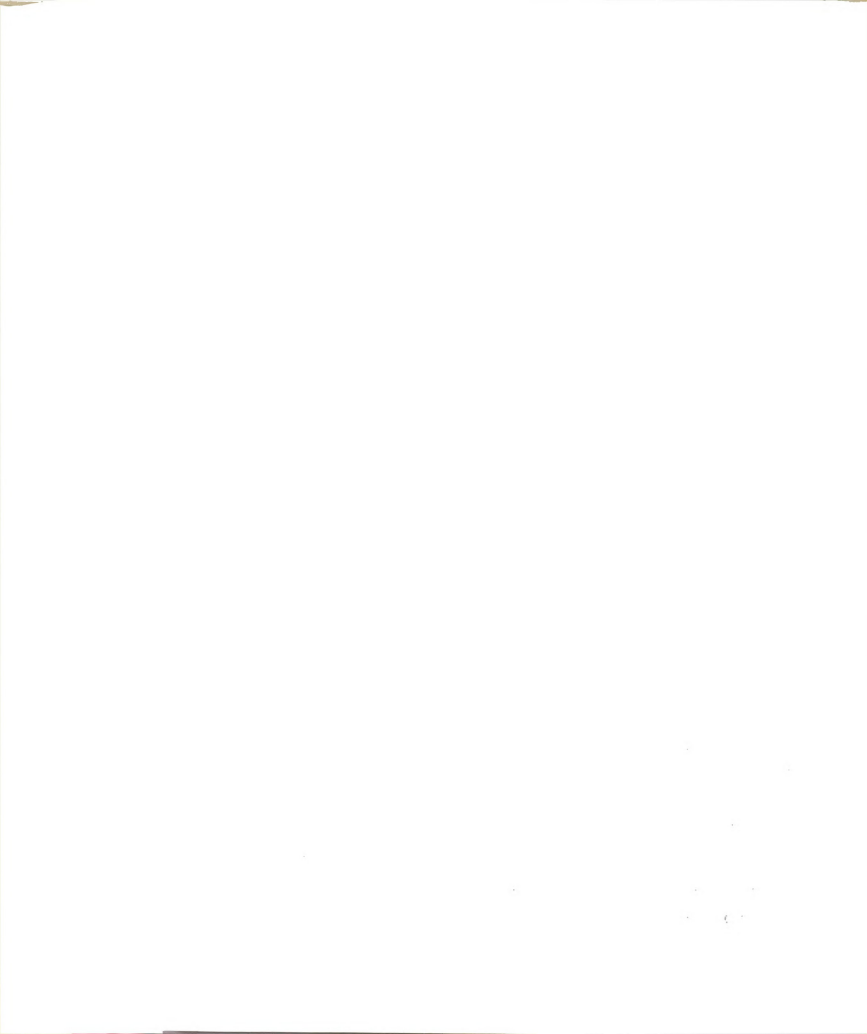
The problem, the schools, and subjects are treated in

this section, a review is given of the findings and of the method for gathering the data. Finally, the conclusions to the research questions are related to the findings. Recommendations are made regarding the implications of the study for matching reading materials to specific groups of students by utilizing Cloze procedure and other instructional strategies to increase reading effectiveness. The potential usefulness of Cloze procedure is treated along with the limitations of the Cloze procedure methodology.

The Problem

One of the problems teachers and other curricular workers face is how to match instructional materials to their students' reading ability. This problem is further compounded in a multi-linguistic environment of a nation like Nigeria where children do not learn English at home but in school. The object of this study was to explore the potential of a relatively new method for assessing the reading difficulty of textual materials in relation to specific groups of students.

In the schools where the Cloze tests were given, an assessment was made by means of a questionnaire interview to determine what teachers now do to match instructional materials to students' reading ability, as well as to determine the instructional strategies teachers use to help their students read better.



The purpose of the questionnaire and interview was also to help create an awareness of the need to assess readability of instructional materials teachers use.

Answers to the following questions were sought:

1. According to the Nigerian students' Cloze scores, are the four textbooks matched to the students' reading ability?

2. Is there a significant difference between the Cloze scores of the four books tested when statistical controls are applied to the following: the school, the passage, and the deletion pattern?

3. To what extent is the International Correspondence Institute's independent-study textbook, Galatians and Romans, matched, in terms of readability, to the reading ability of the students who took the Cloze tests?

4. What instructional strategies do the teaching staffs of the Nigerian schools use to help their students better understand what they read and study?

The Schools and Subjects

The participants in the study were students who attended five of the schools of the Assemblies of God Church in Nigeria, West Africa in the Spring of 1977. There were 371 students who took the Cloze tests. However, twenty did not have complete data. Most of the students did not finish all of

their tests. One student completed all four of the tests but no student questionnaire was attached to the test to determine his year in school or other pertinent information.

Methods for Gathering the Data

Three instruments were used to gather the data. They are briefly mentioned below.

The Cloze Procedure

The Cloze procedure was utilized in West Africa in March, 1977 to test four textbooks with Nigerian students. Each of the 371 subjects took four tests. The tests that every student took were based on one of two passages taken from each of the four textbooks. The tests were administered jointly by the teaching staffs of the schools and the author.

The Student Questionnaire

The student questionnaire was used to gather demographic information about the students as well as to find out about other student characteristics such as age, years in school, and languages spoken.



The Faculty Questionnaire

Twenty-four faculty members of the five schools filled out the questionnaire and participated in an interview to clarify their selections of items and comments on the questionnaire.

Conclusions

The review of the research on the topic of Nigerian students' reading ability indicated their lack of English language skills as compared to other speakers of English for whom English is the mother tongue, or who study and speak English as a second language. Teachers in the schools where students were tested by Cloze procedure also affirmed that Nigerians do have English language deficiencies such as those described in the review of the research. The results of the Cloze testing tended to confirm these conclusions.

The findings of the study provide the following answers to the research questions stated in chapter 5, page 7.

Research Question One

1. According to the Nigerian students' Cloze scores, are the four textbooks matched to the students' reading ability?

Book 1 - This book was the most difficult for all students in all schools according to the Cloze scores, and was the least matched to students' reading ability. The conventional readability measures assigned this book the highest grade level (9th grade by the Fry graph and 11-12th grade by the SMOG formula). In fact, the readability measures paralleled the Cloze findings with books one, two and four.

Book 2 - Book two had the highest mean average Cloze score (27.81) for all schools but had a high standard deviation as well (9.02). It was the easiest for the students to read but the dispersion of scores was larger than that of book four. It was the best matched to the reading ability of the students in all schools.

Book 3 - According to the readability measures (Fry and SMOG), book three had a lower grade level (p. 92) than all the other books (easiest to read). However, the Cloze scores showed the opposite to be true. Cloze scores on book three were lower than the Cloze scores on books two and four, while the readability measures assigned books two and four to higher grade levels (harder to read). This evident contradiction may be due in part to the subject matter of the books. Book three (geography) could be less familiar to students than books two and four (Bible and theology).

The distribution of the scores on book three was the highest of all books (9.27). A majority of students were



in the instructional to independent-study levels for book three. Nevertheless, about 30% of students were in the frustration level of study according to the Cloze scores. Book three was slightly better matched to students' reading ability than book one.

Book 4 - Book four (Galatians and Romans) along with book two was the best matched to the students' reading ability. Though book two had a slightly higher mean average (27.81 to 26.59) the standard deviation (distribution of scores) for book four was slightly lower in relation to book two (9.02 to 8.33). There were fewer scores on the extreme ends of the distribution.

Research Question Two

2. Is there a significant difference between the Cloze scores of the four books tested when statistical controls are applied to the following: the school, the passage, and the deletion pattern?

The testing of the instrument was not conclusive. Though significant differences were not found between school and deletion patterns independently, a significant difference was consistently found between the interaction of school and deletion pattern. However, although these differences were statistically significant, it does not follow that they were also meaningful.

The performance of students in the schools tended to show specific scoring trends of students on specific books.

Research Question Three

3. To what extent is the International Correspondence Institute's independent-study textbook, Galatians and Romans, matched, in terms of readability, to the reading ability of the students who took the Cloze tests?

The Galatians and Romans independent-study textbook, as stated above, was one of the two best matched books to the reading ability of the students tested. However, as reported in Table 11 (p. 90), only about two-thirds (66%) of students' scores were in the instructional to independent-study levels. Therefore, to say that it was one of the better-matched books to the students' reading ability does not indicate its suitability for study by all of the students in the Nigerian schools tested. The range of students' reading ability was found to be extremely varied and diverse for this conclusion. As an independent-study textbook, however, Galatians and Romans does contain word studies for each lesson along with other study helps which were not measured in this study. These factors should be taken into consideration regarding which students tested could successfully study this book independently. Probably, because of other readability factors (such as word studies), a number of students who scored in the instructional level could also study the book independently. This could be ascertained by having a number of them actually study the book in part or in whole.

Research Question Four

4. What instructional strategies do the teaching staffs of the Nigerian schools use to help their students better understand what they read and study?

The faculty questionnaire and interview provided an overview of what the teachers who participated in the study do to match instructional materials to their students' reading ability. The questionnaire also indicated the instructional strategies teachers use to help students read better.

The kinds of decisions the teachers made regarding readability mostly had to do with informal selection procedures of books or other reading materials and was based on common sense judgments such as format considerations (p. 95) along with the comparison of books to be used with those already being used.

Though nine of the respondents indicated materials were chosen on the basis of the application of a "readability formula" (p. 95, section d), when questioned further, none had done so with formulas mentioned in this study such as the Flesch, Dale-Chall, Fry, or SMOG. None of the teachers had any knowledge of the Cloze procedure and the potential use of Cloze for assessing readability of instructional materials.

Though cassette recorders were not used by teachers, students did use them for various study purposes.

Teachers could probably take advantage of recorders to further explain difficult vocabulary and reading assignments.

Supplementary materials were probably not used to the extent that they could be profitably used. Vocabulary lists with definitions and study questions to guide students in their school work were reported used by about one-half of the faculty members of the schools.

Student-teacher interaction in explaining assignments and in providing instruction on applying study techniques to preview materials and guide students' reading was indicated as being employed by one-half to two-thirds of the teachers.

These four instructional techniques were the most used by the teachers.

Teachers provided:

1. Vocabulary lists with definitions.
2. Study questions.
3. Explanations of assignments.
4. Instructions on how to study for reading comprehension.

In spite of many students' poor reading ability as indicated by the Cloze scores, teachers were able to help students better understand what they read and study. What teachers do makes a great difference in students' achievement. Grade point averages confirm this in that students are fulfilling school requirements and pass their courses.

Recommendations and Implications
of the Study

The following recommendations are given regarding the implications of the study for the schools where the Cloze tests were administered and for International Correspondence Institute diploma level program curriculum. Suggestions for further research are also given.

Implications of the Study
for the Nigerian Schools

The Cloze testing tended to indicate the fact of Nigerian students' English language deficiencies. Teachers in the schools where students were tested expressed a need of better testing instruments, including entrance and placement examinations, to help them better understand students' English language needs. The methodology now being employed at the University of California at Los Angeles (UCLA) mentioned by Bowen (p. 26) would seem to be an excellent option for the Nigerian schools to improve English placement and diagnosis for the various levels of English instruction.

Teachers in these schools could utilize Cloze procedure not only to diagnose students' reading abilities and the readability of materials students are expected to study during the students' first year in school, but also to choose the instructional materials they are expected to study at other times.

Before final adoption, books that are chosen by the West African Board of Education of the Assemblies of God, for use in English-speaking West Africa could be better matched to the students expected to study them by first testing the books with Cloze procedure as outlined in this study.

As disclosed by the responses on the faculty questionnaire, teachers need to obtain more information about readability assessment for more effective instructional decision-making. Instructional strategies used by some of the teachers could be used by many more. As previously mentioned, since some students already are using cassette recorders, it seems that teachers could also make use of recorders to increase their teaching effectiveness.

International Correspondence Institute
and Diploma Program Courses

The course Galatians and Romans tested by Cloze procedure with Nigerian students was seen to be matched to a small percentage of the students in relation to readability on an independent study level. Since the goal of ICI is to write and publish curriculum that students like the African students tested can successfully study by correspondence or independently, a review of readability levels for materials for this target audience needs to be seriously considered. Though Galatians and Romans was the first of the diploma courses to be written and criteria for

subsequent courses now being written has been revised, great care should still be taken to assure that this level of curriculum is suitably matched to this audience in relation to readability. In the writing of Galatians and Romans, periodic readability tests were taken on the manuscript with the Flesch readability formula. The Flesch formula assigned a 7th to 8th grade readability level to the course. In this study the readability or grade level calculated with the Fry graph was 7th grade and with the SMOG, 9th grade. The Cloze scoring of this study revealed that this level was too difficult for the majority of students to be able to study the course independently. A review of the readability criteria for this level of curriculum should probably be done by the Institute.

One of the steps that could be taken would be to control the vocabulary by applying the use of word or vocabulary frequency lists that are graded for speakers of English as a second language.

International Correspondence Institute could also develop sets of Cloze testing for each course and request that ICI directors or other qualified personnel administer the Cloze tests to students in a number of countries. This readability data could then be utilized by the ICI Central Office, Brussels, for adapting materials to specific students.

ICI has already done extensive translation work and is

planning to do much more. The Cloze procedure seems to be uniquely adapted for application to other languages as well as English. This should be further researched by the Institute.

It should be remembered, however, that the Cloze procedure also has its limitations. Generalizations about the findings in one country, or about groups within a given country, cannot necessarily be made without great care. Cloze testing is meant to be carried on with specific students or populations with materials that are intended for use by the students by whom the materials are tested.

Suggestions for Further Research

The following issues or questions related to the Cloze procedure and this research could be investigated.

1. To determine readability levels for other students in other parts of the world in relation to the Galatians and Romans course, this present study could be replicated using the same testing instruments and procedures.

2. To ascertain the relationship of different subject matter to students and Cloze testing methodology, the same procedures used in this study could be used with various students in various countries but with more diversified subject matter.

3. To get a better idea as to what extent the Institute's other levels of curricular materials are matched to the reading ability of intended students (ICI produces materials on four levels) Cloze testing could be applied to each level.

4. To create an awareness on the part of teachers in general in Assemblies of God schools worldwide as well as in other schools in Nigeria, other faculty could be surveyed to determine how they select textbooks, whether readability formulas and Cloze testing are used, and whether or not the reading ability of their students is a consideration they take into account in their teaching.

5. To determine the relationship and utility of informal readability standards with Cloze procedure and conventional readability formulas, a comparison of the results of Cloze procedure and other readability formulas could be made with informal readability standards used by teachers.

6. To clarify the Cloze scores in relation to specific student characteristics, the data on student characteristics from this study could be further examined and the findings applied to help students be more successful in their studies.

7. To further clarify methodological issues of deletion patterns and Cloze scoring (exact and acceptable-word replacement scoring) data generated in this study could be examined and related to these issues.



APPENDICES



APPENDIX A

A Comparison of the U.S. and Nigerian Educational Systems

A COMPARISON OF THE U.S. AND NIGERIAN EDUCATIONAL SYSTEMS

121

U.S. SYSTEM

	AGE GRADE (year)																
	25	24	23	22	21												
Higher Education	B Upper Division Junior College	C Community College	S Liberal Arts Colleges	S Professional Schools	S Teachers Colleges	C	C	D M	D M	D M	Universities						
Secondary Education	C 4-Year High School	C	6-Year Junior-Senior High School	C	3-Year Senior High School	3-Year Junior High School	14	13	12	11	10	9	8	7	6	5	K
Elementary Education	RP Elementary School (6 or 8 years)	RP	RP	RP	3-Year Senior High School	3-Year Junior High School	14	13	12	11	10	9	8	7	6	5	K
	Kindergarten																
	5	4	3	2	1												

RP — Report of Promotion
C — Certificate or Diploma
AS — Associate Degree
B — Bachelor's Degree
M — Master's Degree
D — Doctor's Degree

NIGERIAN SYSTEM

D	B Sc H Universities and Professional Schools	3 Technical Colleges Training Colleges Evening Institutes	WACE (Ad) 7 Year Secondary Comprehensive School	WACE (Or) 5 Year Technical Grammar School	3 - Year Modern Grammar School
JSC					
Elementary School (7 years)					

JSC — Junior School Certificate
WACE (Or) — West African Certificate of Education (Ordinary Level)
WACE (Ad) — West African Certificate of Education (Advanced Level)
B — Bachelor's Degree
B Sc H — Bachelor's Degree with Honors
D — Doctor's Degree



APPENDIX B

Student Questionnaire

STUDENT QUESTIONNAIRE

Date _____

1. Student's Name _____ 2. Age _____
3. School Name _____
4. Male _____ 5. Female _____ 6. Married _____ 7. Unmarried _____
8. How many years have you studied in schools (Circle) 1 2 3 4
5 6 7 8 9 10 11 12 13 14
9. How many years or months have you studied in this school?
Years _____ Months _____
10. List below the subjects or topics you like to study most.

11. Have you ever studied a correspondence course? Yes _____ No _____
12. Did you receive a certificate or diploma from the correspondence school? Yes _____ No _____
13. List below the languages you know and indicate with a tic or an x in the boxes, how well you can speak and write each one. ✓

Language	I SPEAK			I WRITE		
	Fair	Good	Excellent	Fair	Good	Excellent
1) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. If English is your second language, (that is, you did not learn English at home with your parents or others, but in school) do you think that you know English well enough to pass all your courses without special help? Yes _____ No _____
15. Outside of the ministry, what kind of work have you done to support yourself (and your family if you have one)? _____
16. What kind of work have you done in the church? _____
17. What kind of work or responsibility, if any, do you now have in the church? _____
18. What kind of work do you expect to do in the church when you leave school? _____
19. Beside the study materials you are supposed to read for your classes, indicate with a tic or an X in the appropriate box or boxes below what other types of reading materials you have read in the past four weeks.

☐ Newspapers - ☐ Magazines - ☐ Books



APPENDIX C

Practice Cloze Exercise



Practice Cloze Exercise
INSTRUCTIONS

On this page is a reading puzzle. Every seventh word has been left out of a paragraph of a book, and a blank space has been left where each word was left out. The underlined blank spaces are all the same length but the words that belong in the spaces are of various lengths. At the right, on the margin of the puzzle, each blank is numbered. Your task is to try and solve the puzzle by replacing the words that were left out. Write the words in the spaces you think belong there. The first word has been written in to help you get started.

It will help you in doing this exercise, and the longer ones we are also going to do, if you remember to follow the directions below:

1. Read over the whole passage BEFORE writing down any of the words.
2. Write only one word in each blank space.
3. Try and complete every blank. Don't be afraid to guess.
4. If you find some blank hard to fill, go on to do the others and come back to it later.
5. Your spelling doesn't matter as long as we can tell the word you meant.
6. In the longer puzzles you will do, you might find that there is a number like a Bible reference (John 3:15) or a date (1970) missing, instead of a word.

Now try and do the sample puzzle below. Write in the blanks the words you think are appropriate. Upside down at the bottom of this page are the numbered answers. Try not to look at them until you write down as many words as you can.

READ THE WHOLE PUZZLE FIRST, THEN FILL IN THE BLANKS

Most of the people of the Northern Region of Nigeria 1
are farmers. Some _____ them grow groundnuts, 2
especially in the _____ around a town called Kano. 3
The _____ Season in the North of Nigeria 4
_____ only four months long, and there _____ 5,6
less rain than in the South. _____ seeds are sown 7
in June. The _____ are small, and shoots grow 8
downwards _____ the earth from the bright yellow 9
_____. The groundnuts grow at the ends 10
_____ the shoots under the ground. That 11
_____ why they are called groundnuts. They 12
_____ very important for food in Nigeria _____ 13,14
other parts of the world.

1. Northern, 2. of, 3. land, 4. wet, 5. is, 6. is,
7. groundnut, 8. plants, 9. into, 10. flowers,
11. of, 12. is, 13. are, 14. and.

APPENDIX D

Sample Cloze Testing

1Ad7

Name _____ School _____

Writes Dr. A. B. McDonald, a Scotch Presbyterian minister: "The church's belief in the Spirit sprang from her experience of a _____ . Very early in her career the _____ became 1,2
 aware of a new power _____ within them. Its most striking 3
 manifestation _____ first was 'speaking in tongues,' the 4
 _____ of ecstatic utterance in an unintelligible _____; 5,6
 and both those seized by this _____ and those who saw and heard 7
 _____ manifestations were convinced that some Power _____ 8,9
 a higher world had broken into _____ lives endowing them 10
 with capacities of _____ and with other gifts, which appeared 11
 _____ be something different from a mere _____ of 12,13
 endowments already theirs. People who _____ had seemed to 14
 be nothing out _____ common suddenly became capable of 15
 impassioned _____ and speech, or of lofty moods _____ 16,17
 which they were manifestly holding converse _____ the Unseen." 18
 He states that the _____ in tongues 'appears to have been 19
 _____ most arresting and at first the _____ characteristic 20,21
 of the manifestations of the _____.' Is there any place in 22
 the _____ Testament where a distinction is made _____ 23,24
 those who have received the endowment _____ power and those 25
 who have not? _____ B. McDonald, the writer quoted above, 26
 _____ in the affirmative. He points out _____ the 27,28
 word "unlearned" in I Corinthians 14:16,23 (_____ he 29
 translated "private Christian") denotes persons _____ are 30
 differentiated from unbelievers by the _____ that they take 31
 part in worship _____ the extent of saying "Amen"; they 32
 _____ are distinguished from believers by the _____ 33;34
 that they are unable to take _____ part in Spirit-manifestations 35
 It seems _____ a special section in the meeting- _____ 36:37
 was reserved for the "unlearned ones." _____ translates the 38
 word "unlearned" by the _____, "some who lack the gift." 39
 Thayer's _____ render it: "one who is destitute _____ 40,41
 the gift of tongues; a Christian _____ is not a prophet." 42
 McDonald describes _____ as "one who waits or is _____ 43,44
 for the decisive moment when _____ Spirit will descend upon 45
 him." Regardless _____ their denomination or school of 46
 theological _____, able scholars admit that the receiving 47
 _____ the Spirit in the early church _____ no formal 48,49
 ceremony or doctrinal theory, _____ a real experience. Canon 50
 Streeter says that Paul asks the Galatians whether it was by the law
 or by the hearing of faith that they received the gift of the Spirit.

2Ad3

Name _____ School _____

Now we come to a wonderful truth. It is the truth of SUBSTITUTION.
 SUBSTITUTION made _____ the JUSTIFICATION of man so that
 _____ could be SAVED and be restored _____ FELLOWSHIP
 with God. It was not _____ that Jesus lived a sinless life.
 _____ sin still remained unpunished, and God _____
 have no fellowship with him so _____ next step in God's
 plan was _____ allow His Son to become a _____ for
 man's sin. John the Baptist _____, "Behold the Lamb of
 God that _____ away the sin of the world." _____
 was called the Lamb slain from _____ foundation of the
 world." Christ's DEATH _____ NO ACCIDENT! It was all a
 _____ of God's plan. In Revelation the _____
 chapter, all Heaven gives praise to " _____ Lamb that was
 slain!" Isaiah in _____ Old Testament prophesied, "All
 we like _____ have gone astray...and the Lord _____
 laid on Him the iniquity of _____ all." What was this plan
 of _____? It was this: When Jesus died _____ the
 cross, He did not die _____ His own sin. "He was wounded
 _____ our transgressions, He was bruised for _____
 iniquities, the chastisement of our peace _____ upon Him,
 and by his stripes _____ are healed." He tasted death for
 _____ man." Think of it! God IMPUTED _____ the
 sins of all men to _____, and our Lord became sin for
 _____, who knew no sin..." He was _____ longer
 counted on the "ALL GOOD" _____! He was counted among
 sinners on _____ "ALL BAD" slate! No wonder He _____
 out on the cross "My God, _____ God, why hast Thou forsaken
 me? _____ is what happened! Isaiah said, He _____
 His grave with the wicked, and _____ the rich in His death,
 because _____ had done no violence, neither was _____
 found in His mouth." But _____ next step is even more
 glorious, _____ Jesus rose from the dead. Death _____
 not hold Him...for death is _____ result of sin, and Jesus
 had _____ no sin! After three days He _____ out of
 the grave, alive and _____. He was seen by more than
 _____ people who witnessed to his RESURRECTION, and after
 40 days Jesus ASCENDED back into heaven. The very heart of the
 Gospel is the FACT of the RESURRECTION!

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 44,45
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 47,48
 49
 50

3Ad5

Name _____ School _____

On the western side of Nigeria is the Republic of Dahomey. It belongs to the French Community. If you look at map 11 on page 45 you will see that the shape of Dahomey is long and narrow. Between Dahomey and Ghana is Togoland. This country is also _____ and narrow like Dahomey. Its history _____ 1,2

very interesting. Before the first World _____ Togoland 3

was ruled by a European _____ called Germany. Its people 4

were tribes _____ Dagomba in the North and Ewe _____ 5,6

the South. Picture twenty shows a _____ man of the Ewe 7

tribe who _____ left his home in Togoland. He _____ 8,9

working as a car driver in _____ and his name is Clifford. 10

After _____ first World War part of Togoland _____ 11,12

ruled by the British and part _____ ruled by the French. 13

The Ewe _____ Dagomba tribes were divided into two 14

_____. Today British Togoland is part of _____ 15,16

and French Togoland is a self-_____ country. Its capital 17

is Lome, which _____ a town on the coast. When _____ 18,19

first went to Dahomey they found _____ strong African 20

government. The Dahomeans were _____ good at fighting. 21

Some of their _____ famous fighters were women, and they 22

_____ very difficult to defeat. After they _____ 23,24

won a battle they sold their _____ as slaves. For a 25

long time _____ Dahomeans would not agree to stop _____ 26,27

slaves. The very last slave ship _____ leave West Africa 28

for America sailed _____ Dahomey. When slavery was stopped 29

at _____ the prisoners were made to work _____ 30,31

plantations of oil palms. That is _____ the most important 32

exports of Dahomey _____ palm oil and palm kernels. They 33

_____ exported from Cotonou and Porto-Novo. _____ 34,35

is the largest port, and Porto-_____ is the capital. On 36

the western _____ of Ghana is the Republic of _____ 37,38

Coast. It is another of the _____ which belong to the 39

French Community. _____ of its coast has lagoons and 40

_____ islands, like those near Lagos. Picture _____ 41,42

shows you the lagoon where a _____ called Abidjan is built. 43

Before we _____ out exactly where Abidjan is let _____ 44,45

look closely at the picture. In _____ middle you will see 46

a wide _____ of water. On each side of _____ is 47,48

flat sandy land. The channel _____ the sea and the lagoon. 49

It _____ made by men with the help of machines, and is deep 50

enough for big ships.



4Ad1

Name _____ School _____

To appreciate the importance of the epistle to the Galatians, we must realize that all Christianity faced the same crisis.

_____ was a time of transition. We _____ to trace 1,2
 briefly some of the _____ that led to this crisis. At 3
 _____ time of Paul's conversion the church _____ 4,5
 made up almost entirely of Jews _____ had accepted Jesus 6
 as their Messiah. _____ were few Gentile converts. After 7
 the _____ of Barnabas and Paul, the church _____ 8,9
 to grow rapidly among the Gentiles. _____ brought up an 10
 important question: How _____ these Gentiles to be 11
 received into _____ church? The Judaizers answered, 12
 "They must _____ circumcised and become good Jews as 13
 _____ as have faith in Jesus." They _____ 14,15
 Christianity as the Jewish religion plus _____ in Jesus 16
 Christ. To them, the _____ was an extension of the Law 17
 _____ Moses. Today we wonder how Christians _____ 18,19
 have such a concept of the _____. Didn't they realize 20
 that Christianity was _____ different from the Jewish 21
 religion? Not _____ first. In the early period of 22
 _____ church, even the Roman government regarded _____ 23,24
 as a branch of Judaism. Later _____ government recognized 25
 that Christianity was different _____ Judaism and treated 26
 it as a _____ religion. Christianity was distinctly Jewish 27
 at _____. Jesus' followers were Jews. Those who 28
 _____ the Holy Spirit on the day _____ Pentecost 29,30
 were Jews who believed in _____. The 3,000 converts were 31
 Jews and _____ to Judaism. The Jewish Christians did 32
 _____ look on their new spiritual experience _____ 33,34
 something distinct from Judaism. The transition _____ 35
 Judaism to Christianity was slow in _____ early church. We 36
 read the accounts _____ the transition in the Acts of 37
 _____ Apostles. In the first chapters we _____ 38,39
 the believers going frequently to the _____ at the hours 40
 of prayer. Although _____ were Christians filled with the 41
 Holy _____, they still felt an obligation toward 42
 _____ Mosaic Law, Jewish customs, and worship _____ 43,44
 the temple. But they also gathered _____ in private homes 45
 for teaching, fellowship, _____, and eating their meals 46
 together. As _____ background for your study of the 47
 _____ you need to review briefly the _____ in the 48,49
 transition of the early _____ from Judaism to Christianity. 50
 Read rapidly Acts 8-11. Notice the events that caused people to
 realize that Christianity was different from Judaism.



1Bd7

Name _____ School _____

Apostles. These were men who received their commission from the living Christ Himself, who had seen Christ after His resurrection, enjoyed a special _____, exercised administrative power over the churches, _____ supernatural credentials and whose chief work _____ the establishment of churches in new _____. They were Christ-called, Spirit-filled, _____ executives and missionary organizers. The "Twelve" _____ of Jesus and Paul (who stood a class by himself) were the _____ by pre-eminence, but the title was _____ given to those who engaged in _____ work. The word "apostle" itself simply "missionary." Have there been apostles since? relationship of the twelve to Christ _____ a unique one which none have _____ since. However, the work of such _____ as John Wesley may be justly _____ as apostolic. Prophets were those endowed _____ the gift of inspired utterance. From _____ earliest time down to the close the second century an uninterrupted stream prophets and prophetesses appeared in the _____ church. While the apostle and evangelist _____ the message to the unbelieving, the _____ ministry was particularly to Christians. Prophets _____ from church to church much as _____ do today, although every church had _____ who were regular members of the _____. Teachers were those gifted in the _____ of the Word. Like the prophets _____ of them traveled from church to _____. The local ministry which was appointed _____ the church on the basis of _____ qualifications included presbyters or elders, to _____ was given also the title "bishop" _____ overseer, or superintendent. These had the _____ of the local assembly, especially in _____ to pastoral care and discipline. Their _____ were chiefly of a spiritual nature. _____ are sometimes called "pastors" or "shepherds," _____ Acts 20:28. During the first century _____ Christian community was governed by a _____ of elders called bishops, so that _____ was no one officer doing for _____ church what a modern pastor does. _____ the beginning of the third century _____ man was placed at the head _____ each community with the title of _____ or bishop. Associated with the presbyters _____ a number of assistant rulers called _____ or deaconesses whose work appears to _____ been largely house-to-house visitation and practical ministry to the poor and needy. The deacons also assisted the elders in the celebration of the Lord's Supper.

2Bdl

Name _____ School _____

It has been a rude awakening to the Jews to realize that the Gentile is included in God's plan of "_____ WILL." All they had been taught _____ their leaders has been proven a _____ hope. It is apparent that they _____ understood what their own prophets had _____, and it now seems as though _____ Gentiles are to reap all the _____ of the covenants and promises. Paul _____ their feeling, and hastens to show _____ that all is not lost---that _____ same door that is open to _____ Gentiles is open to them. "Hath _____ cast away his people?" Paul asks. "_____ forbid!" He then uses himself as _____ example. He, like them, is a _____, and yet he is saved. Paul _____ categorically that God will not cast _____ those that He "foreknew," and goes _____ to show that many Jews are _____ among the foreknown. He reminds them _____ Elijah, who thought he was alone, _____ to be told that there were _____ more beside himself who had not _____ knee to Baal. Then Paul states _____ at that very time there was _____ REMNANT ACCORDING TO THE ELECTION OF _____. Note that he now refers to _____ election as THE ELECTION OF GRACE, _____ in verse 6 he shows that _____ election is based upon the grace _____ God apart from works. This corresponds _____ the verse in Ephesians 2:8,9 where _____ says, "For by GRACE are ye _____ THROUGH FAITH...not of works lest _____ man should boast." Once again Paul _____ put the Jew on the same _____ as the Gentile. God makes no _____. Even the REMNANT is to be _____ on the same basis as all _____---a salvation "ACCORDING TO THE ELECTION _____ GRACE!" But the idea of a "_____ STATUS" is still strong in the _____. Paul therefore labours the point that _____ a REMNANT will be saved and _____ in the "ELECT" of God. The _____ of the Jews were blinded by _____ unbelief. Their unbelief made them blind _____ deaf to the truths spoken by _____ prophets. Once again we see how _____, like the hardening of the heart, _____ THE PREDETERMINED RESULT OF UNBELIEF, and is therefore of God. Now follows an unfolding of God's continuing love for the Jew.

3Bd4

Name _____ School _____

In this chapter we are going to visit part of the Congo Basin called Katanga. It is very important for minind copper. Do you _____ what copper is used for? Copper _____ a brown metal. It is soft _____ you could bend a piece of _____ with your hands. Electricity passed through _____ very easily, and wire for carrying _____ is made from it. So much _____ is used in the world today _____ a very large amount of copper _____ is needed. To get to the _____ mines of Katanga we must go _____ river steamer from Leopoldville up the _____ Kasai. We leave the steamer at _____ place called Port Francqui and go _____ by train to Bukama. This town _____ on the River Congo. Find Port _____ and Bukama on map 25 on _____ 83. Then look to see where _____ railway goes after it leaves Bukama. _____ first town we come to is _____. In the land around Jadotville there _____ many copper mines. On this page _____ is a picture of a copper _____ west of Jadotville copper ore is _____ dug out of the sides of _____ hill by machines. If you have _____ what ore is, turn back to _____ 4. Look carefully at picture 48 _____ try to find the following. (a) Machines _____ dig out the ore. (b) A road _____ the mine. (c) Lorries. What do you _____ the lorries are carrying? Where are _____ going? While we are in Jadotville _____ notice that there are factories everywhere. _____ is a very smokey place. The _____ important town in Katanga is Elizabethville. _____ has many fine buildings, but it _____ factories as well. Find Jadotville and _____ on map 25. Notice that they _____ in the highland on the south _____ of the Congo Basin. It is _____ enough for Europeans to have their _____ there. Let us find out what _____ on in the factories. On page _____ there is a picture of a _____ in Elizabethville. In it copper ore _____ being turned into copper. The ore _____ made very hot by burning Coke. _____ it is very hot, copper turns _____ a liquid. It flows away and _____ behind the part of the ore that is not wanted. The copper cools and becomes solid again.

4Bd6

Name _____ School _____

The words God sent forth His Son tell us that the One sent
 is divine. Sent forth _____ us know that the One 1
 sent _____ divine authority and that He pre-existed 2
 _____ eternity. This verse describes the nature 3
 _____ Jesus. You can see that He _____ divine 4,5
 in the word Son. Jesus _____ the Son of God. What 6
 does _____ mean? Does it mean that He _____ 7,8
 the Son because He was born? _____ that He came into 9
 being at _____ point in eternity? No. This is 10
 _____ the meaning. Jesus was the Son _____ 11,12
 God before He was born in _____. Notice the words sent 13
forth. He _____ sent forth as the Son. He 14
 _____ not become the Son when He _____ born. 15,16
 He already was the Son. _____ Philippians 2:6 and 17
 John 1:1-3,14. We _____ better understand the title 18
 Son when _____ think of the relationship between a 19
 _____ and 'son. A son comes from _____ father 20,21
 shares his father's nature and _____ represents his 22
 father, Jesus came from _____ Father, shares His 23
 nature, and represents _____. The term Son does not 24
 refer _____ His coming into existence, because Jesus 25
 _____ eternal. He has no beginning. See _____ 26,27
 8:53-59. Jesus was born under the _____ of the Law 28
 so that He _____ ransom those who were under such 29
 _____. Remember that to redeem is to _____ 30,31
 back. A price had to be _____ to free us from the 32
 death _____ that the Law had pronounced on _____ 33,34
 who had broken its commands. The _____ way we could 35
 be free was _____ someone to take our place who 36
 _____ not broken the Law. Jesus Christ _____ 37,38
 the only one who ever met _____ conditions to be 39
 our Redeemer. The _____ Law that proved all men 40
 sinners _____ Christ to be holy. He lived _____ 41,42
 blameless life in accordance with the _____. 43
 Therefore, He could give His sinless _____ as a 44
 ransom for all sinners--_____ Jew and Gentile. 45
 He is the _____ sacrifice for sin. His death in 46
 _____ place ransomed us from the power _____ the 47,48
 Law and its demands and _____ from the bondage of 49
 this world. _____ verse 5, what are the two reasons 50
 why God sent His Son?

APPENDIX E

Faculty Questionnaire



Faculty Questionnaire

1. Did you use any of the following types of printed materials with your classes?

	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
a. Required textbooks	24		
b. Workbooks	3	9	7
c. Supplementary textbooks	11	1	9
d. Supplementary handouts-notes	9		15
e. Library readings or research	15	1	7
f. Other _____			
_____	2	1	2

2. Did you use any of the following supplementary materials?

a. Provide tapes of your class lectures		19	
b. Provide vocabulary tapes to aid students with required and difficult vocabulary		19	
c. Provide vocabulary lists to aid students with special vocabulary	12	7	6
d. Provide vocabulary tapes to aid students with general vocabulary		18	
e. Provide taped explanations of the assigned written materials		19	
f. Provide study questions to guide your students toward getting the literal understanding of what they read	9	6	8
g. Provide explanations of the assignments so that your students can read the material analytically	16	4	3
h. Provide study guides that have been prepared by a publishing house	4	13	4
i. Provide instruction to your students on the application of study techniques that will help them preview materials and guide their reading in an organized way	11	5	6
J. Other. Please explain! _____			

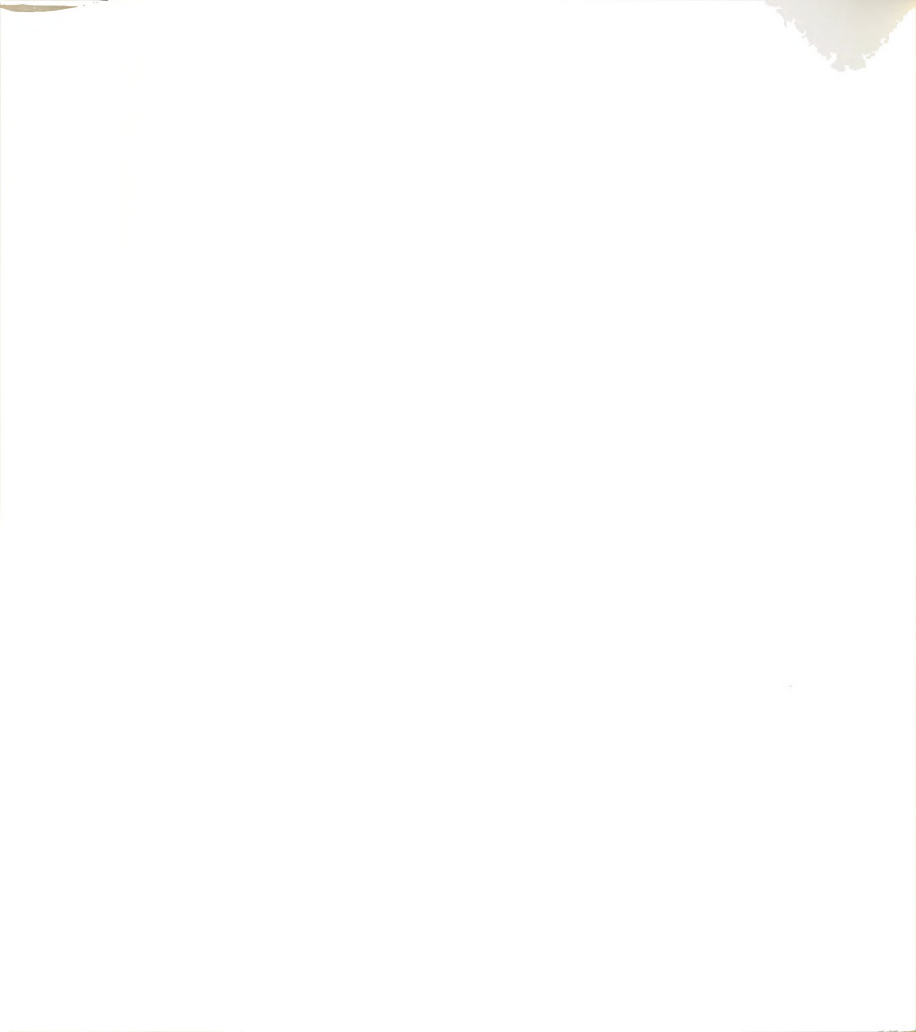


3. How were the books selected you used in your class?

- | | |
|------------------------------------|----|
| a. Chosen by yourself | 6 |
| b. West African Board of Education | 15 |
| c. A local school committee | 6 |
| d. Other. Please explain! _____ | |
-

	<u>Yes</u>	<u>No</u>	<u>Sometimes</u>
4. When the books were selected by you or within your school by a committee were any of the following factors considered?			
a. Authorship	16		3
b. Publishing House	15		4
c. Readability level of the text or printed materials as determined by the application of a readability formula or formulas	9	7	4
d. Readability level of the text or printed materials as stated by the publisher	7	5	6
e. Readability level of the text based on your judgment derived from comparing the text with other available textbooks	16	2	1
f. The format of the book including:			
1) Kind and type of print	13	4	1
2) Illustrations	10	2	2
3) General appearance of the printed material	10	3	3
4) Reference guides	6	7	3
5) Paragraph divisions	8	5	3
6) Chapter divisions	10	1	2
7) Density of fact presentation	13		2
8) Interest appeal	14	1	1
9) Abstractness of treatment	5	4	4
10) Other. Please explain! _____			

5. Which methods do you use that seem to work best in helping your students read better and understand better what they read?



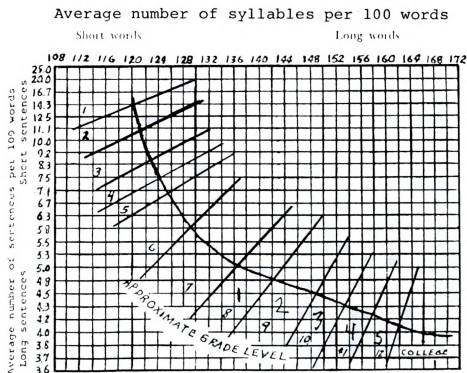
APPENDIX F

Readability Measures



FRY GRAPH FOR ESTIMATING READABILITY

Graph for Estimating Readability by Edward Fry, Rutgers University Reading Center.



Directions: Randomly select three 100-word passages from a book or an article. Plot average number of syllables and average number of words per sentence on graph to determine area of readability level. Choose more passages per book if great variability is observed (Journal of Reading, April 1968, p. 577).

Note: The Readability Graph is not copyrighted. Anyone may reproduce it in any quantity, but the author and the editors would be pleased if this source were cited.

SMOG READABILITY FORMULA

SMOG GRADINGA New Readability Formula*

1. Count ten consecutive sentences near the beginning of the text to be assessed, ten in the middle and ten near the end. Count as a sentence any string of words ending with a period, question mark, or exclamation point.
2. In the thirty selected sentences, count every word of three or more syllables. Any string of letters or numerals beginning and ending with a space or punctuation mark should be counted if you can distinguish at least three syllables when you read it aloud in context. If a polysyllabic word is repeated, count each repetition.
3. Estimate the square root of the number of polysyllabic words counted. This is done by taking the square root of the nearest perfect square. For example, if the count is 95, the nearest perfect square is 100, which yields a square root of 10. If the count lies roughly between two perfect squares, choose the lower number. For instance, if the count is 110, take the square root of 100 rather than that of 121.
4. Add three to the approximate square root. This gives the SMOG Grade, which is the reading grade that a person must have reached if he is to understand fully the text assessed.

*McLaughlin, G. Harry. "SMOG Grading — A New Readability Formula." Journal of Reading, May, 1969, Vol. 12, No. 8, 639-646.

READABILITY WORK FORM

SMOG Grading

Book Title _____

Date _____

Author/Publisher _____

Class Using Text _____

Beginning of text Middle of text End of text

1. Page number _____

2. First word
of sentence _____3. Last word
of sentence _____4. Number of
polysyllabic
words _____

5. Total number of polysyllabic words _____

6. Square root of polysyllabic words _____

7. Square root of _____ + 3 = _____

8. SMOG grade _____

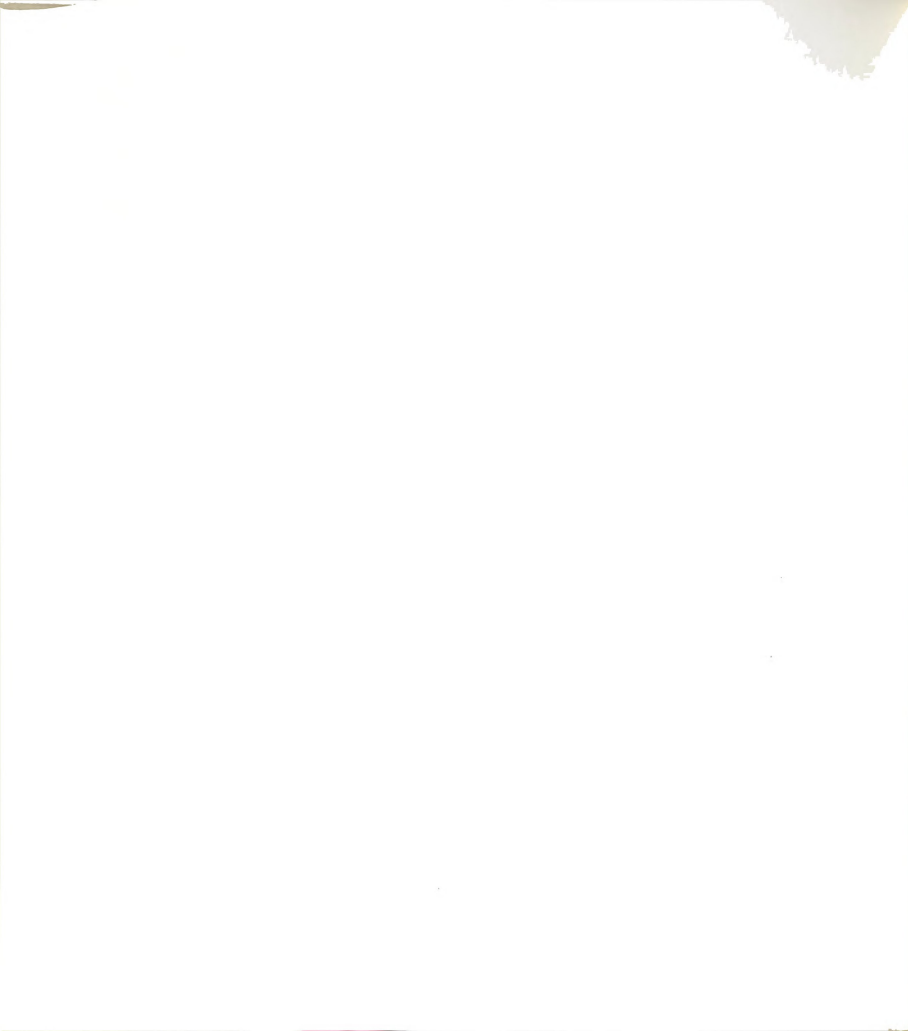


SMOG Formula

Book	Page Number (A)	Polysyllabic Words (A)	Square Root (A)	Page Number (B)	Polysyllabic Words (B)	Square Root (B)	Grade
1	12	25		29	28		11-12
	42, 43	29	$\frac{8.7}{77}$	47, 48	32	$\frac{9}{81}$	
	90	23		111	27		
2	13	12		17	11		9
	39	13	$\frac{6}{36}$	41	10	$\frac{5.83}{34}$	
	74	10		118	13		
3	12	6		25	9		8
	42	15	$\frac{5.48}{29}$	60	4	$\frac{5}{25}$	
	86	8		111	12		
4	32	20		47	16		9, 10
	79	19	$\frac{7}{49}$	148	3	$\frac{6}{36}$	
	93	11	(50)	223	19	(38)	

Fry Formula

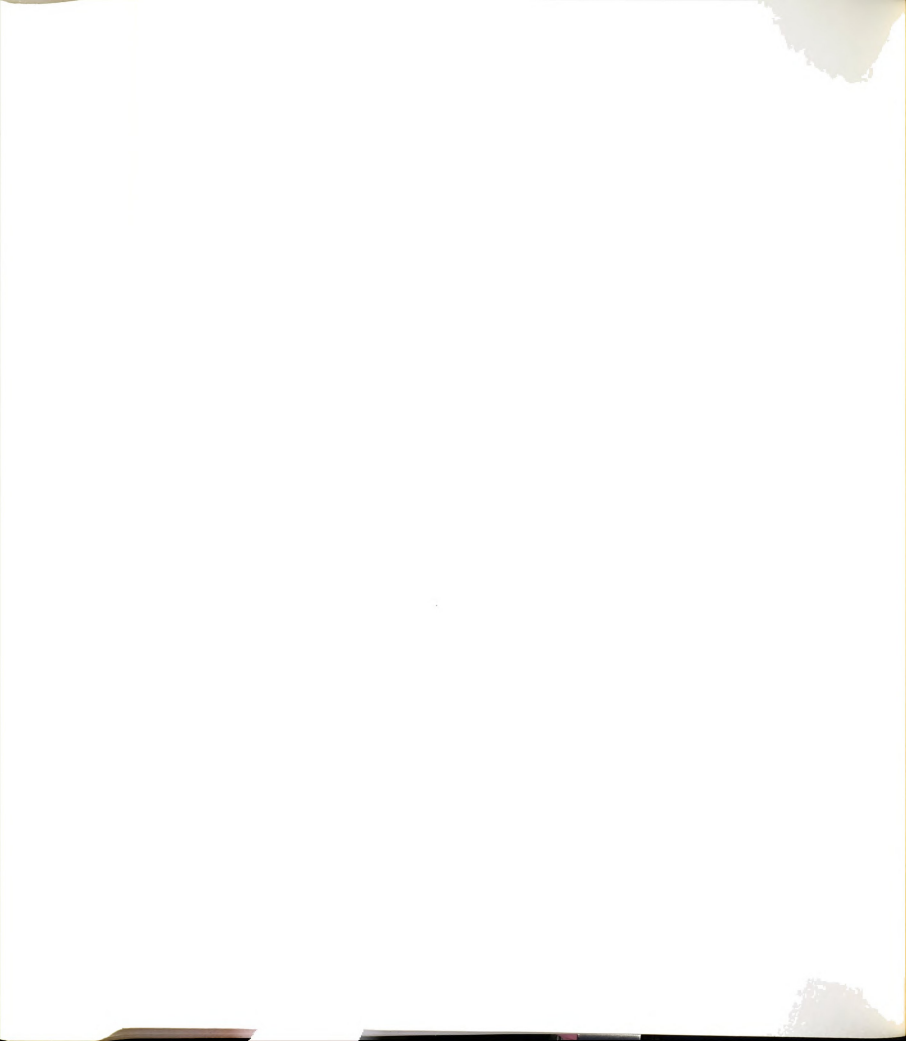
Book	Page Number (A)	Syllables (A)	Sentences (A)	Page Number (B)	Syllables (B)	Sentences (B)	Grade
1	12	172	6.1	29	144	4.9	9
	42, 43	162	4.1	54	149	3.6	
	90	164	6.3	107	148	5.5	
2	13	138	5.8	17	134	4.7	7
	39	134	6.6	41	137	6.7	
	74	137	4.8	118	138	4.9	
3	12	126	6.8	25	136	6.1	7 - 8
	42	142	8.2	60	141	8.1	
	86	149	7.8	111	142	7.1	
4	32	151	7.3	47	134	7.6	7
	79	143	6.5	148	140	6.3	
	93	128	7.7	233	162	4.5	



APPENDIX G

Sample Cloze Test Format

"Apologetics"



Apologetics 1A d5

NAME _____

Date _____

Let us grant that God the Holy Spirit can supply one with *certitude* about the Christian faith, even if absolute scientific verification for all details of Bible history and doctrine are not available. The point is, we can live in faith without full vision. In fact, if we saw with absolute clarity, we would *1* need to exercise faith, would we? *2* , if Christianity can furnish certitude to *3* believer so that he can live *4* confidence, why then do people doubt? *5* us begin by classifying various kinds *6* doubters that you may have occasion *7* encounter. It might be helpful for *8* to *diagnose* the type of doubt *9* friend may be experiencing, so that *10* can know how to apply the *11* remedy.

The *atheist* is a believer; *12* believes there is no God. He *13* be sincere and, in fact, kind *14* polite. But he believes firmly that *15* is no God. Sometimes an atheist *16* become militant in his opposition to *17* . Literally, an infidel is one who *18* not believe. A spirit of arrogant *19* is sometimes called *infidelity*; it often *20* the connotation of arrogant antagonism to *21* .

The *skeptic* is one who feels *22* nothing can be known for sure. *23* is a professional doubter. This is *24* view that is often identified with *25* , the belief that all of reality *26* be subjected to scientific method, that *27* from scientific investigation there is nothing *28* exists. You remember we just discussed *29* length the matter of *probability*. Science *30* with probability. The danger lies in *31* everything to a synoptic vision which *32* out even *certitude*! This attitude of *33* with doubt as a way of *34* is a prevailing attitude in most *35* . It can easily lead to an *36* which scorns the very notion of *37* , so that the believer who announces *38* know that there is a living *39* may be ridiculed for averting that *40* knows *anything* for sure. Although man *41* live with systematic doubt as a *42* of life in some aspects of *43* living, the questions pertaining to life *44* to destiny to faith, are too *45* important to leave to uncertainty.

In *46* fourth century B.C., a philosopher in *47* went about with a lantern, symbolizing *48* search for an honest man. He *49* , not only of the possibility of *50* truth, but even of finding pure motives in mankind. He conceived of life as it was lived in ancient Greece as largely an expression of self-interest. The word *cynic* means literally "like a dog." Some cynics withdrew from conventional society, choosing to wear rags and to live in barrels or other rudely-constructed shelters simply as a protest against the hypocrisy of their times.

The term *humanist* is used in various ways. Sometimes it means simply the person who is *humanitarian*, that is, interested in helping people. From a philosophical viewpoint, however, the term has a different meaning. The philosophical humanist believes that the highest authority is the human intelligence. He is extremely optimistic about man's ability to solve his problems if he is given enough time. The humanist is virtually in agreement with the rationalist, for his real god is the human mind. Further, most humanists are extremely optimistic about human nature. Plato, for example, felt that if man *knew* to do good he *would* do good. He failed to take into account the facts of sin and human perversity. The solution to man's ills, for the humanist, is education. Man is felt to be behaving badly simply because he knows no better. What do you think?

APPENDIX H

Student Characteristics

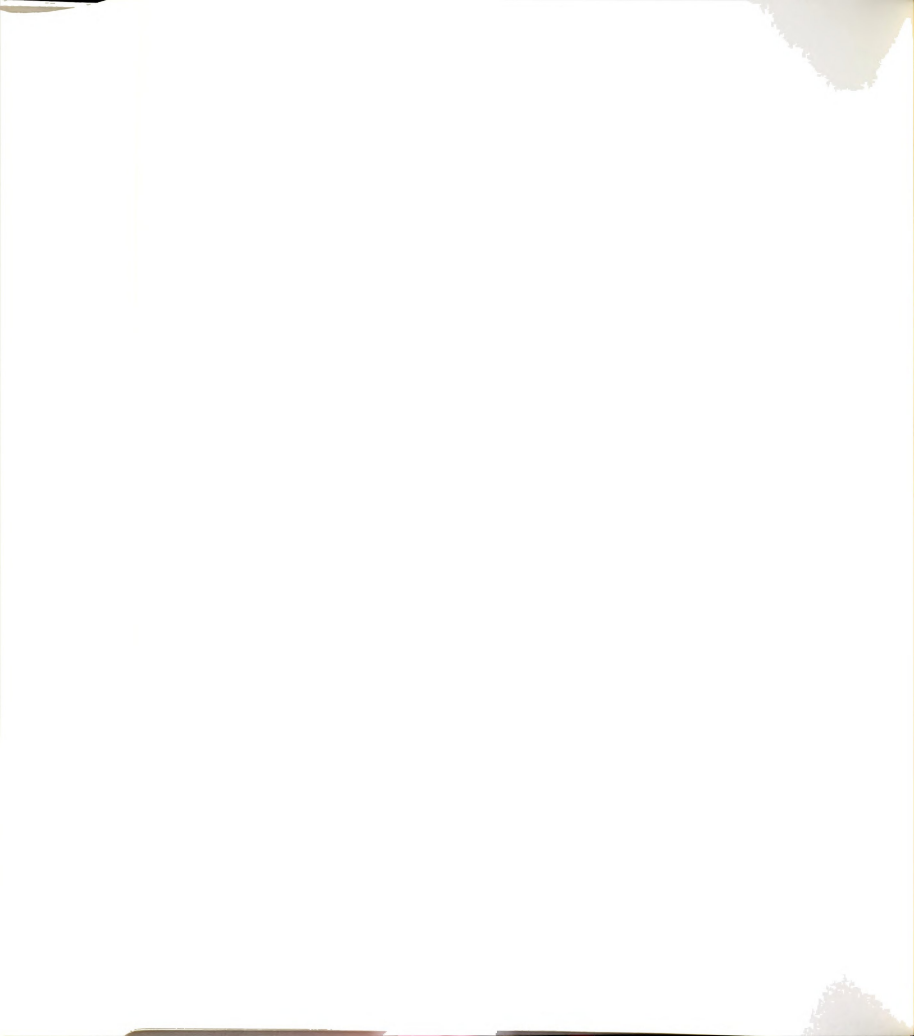


AGE AND CLOZE

<u>Age</u>	<u>Book</u>	<u>Cases</u>	<u>μ</u>	<u>σ</u>	<u>%</u>
27 years and over	1	198	21.19	8.62	42
	2	198	27.41	9.28	55
	3	198	23.47	9.32	47
	4	198	<u>26.25</u>	8.28	<u>53</u>
			24.58		49%
26 years and under	1	155	22.16	8.36	44
	2	155	28.54	9.03	57
	3	155	24.97	10.09	50
	4	155	<u>27.93</u>	8.69	<u>56</u>
			25.90		52%

 μ -mean average age σ -standard deviation

% -Cloze percent score



LANGUAGE AND CLOZE

Number of Languages	N	Book	μ	σ	%
Three or more	88	1	24.15	7.78	48
	"	2	29.31	8.59	59
	"	3	25.75	9.82	51
	"	4	28.70	8.48	57
Total	88				54%
Less than three	223	1	20.74	8.42	41
	"	2	27.45	9.39	45
	"	3	23.44	9.39	47
	"	4	26.32	8.24	53
Total	371				47%

 μ -mean average σ -standard deviation

% -Cloze percent score

CORRESPONDENCE STUDY AND CLOZE

	<u>N</u>	<u>Book</u>	<u>μ</u>	<u>σ</u>	<u>Cloze %</u>	<u>Total %</u>
0	196	1	20.10	8.40	40	48%
		2	26.46	9.21	53	
		3	22.84	10.13	45	
		4	25.70	8.52	51	
1	46	1	23.73	8.73	46	54%
		2	29.80	7.57	59	
		3	24.53	9.69	49	
		4	29.63	8.80	58	
2	106	1	24.92	7.15	49	55%
		2	30.44	8.77	61	
		3	26.33	8.14	53	
		4	28.84	7.46	57	

0 - Has not studied by correspondence

1 - Has studied a correspondence course but dropped out

2 - Has received a diploma or certificate



YEARS IN SCHOOL
ENTRANCE EXAM SCORES AND YEARS IN SCHOOL
CLOZE SCORES AND GRADE POINT AVERAGES

Pearson Correlation Coefficients

	Book 1	Book 2	Book 3	Book 4
Years in School	.4434	.4109	.4413	.3650
353 Cases	S = .001	S = .001	S = .001	S = .001
Entrance Exam Scores	.4543	.3923	.3531	.3889
41 Cases	S = .001	S = .006	S = .012	S = .006
Grade Point Averages	.4661	.4825	.4439	.5348
218 Cases	S = .001	S = .001	S = .001	S = .001

APPENDIX I

Additional Data
Cloze Procedure Scoring



151

Passage

Book	A	σ	B	σ
	15.29	7.03	14.88	6.04
M1	6.38	3.62	6.44	3.55
M2	21.76	8.67	21.35	8.29
T				
	25.33	7.53	17.91	7.02
M1	5.79	2.72	6.86	3.95
M2	30.90	8.05	24.75	9.28
T				
	18.09	7.49	17.45	7.03
M1	6.58	3.37	5.78	3.48
M2	24.62	9.26	23.65	10.13
T				
	19.88	6.92	21.42	6.99
M1	7.09	3.48	5.62	2.84
M2	26.97	8.47	27.02	8.53
T				

*METHOD I CLOZE SCORING

Analysis of Variance of Book, School, and Deletion

Book	Source of Variation	Sum of Squares	DF	Mean Square	F	F Significance
1	School	1238.379	4	309.595	8.672	.001
	Deletion	1445.230	6	240.872	6.747	.001
	School D	1209.435	24	50.393	1.411	.098
	Residual	11210.434	314	35.702		
	TOTAL	15049.209	348	43.245		
2	School	879.152	4	219.788	3.405	.010
	Deletion	1162.698	6	193.783	3.002	.007
	School D	1122.744	24	46.781	.725	.826
	Residual	20269.397	314	64.552		
	TOTAL	23428.739	348	67.324		
3	School	1753.356	4	438.339	9.540	.001
	Deletion	444.761	6	74.127	1.613	.143
	School D	1508.263	24	62.844	1.368	.120
	Residual	14426.827	314	45.945		
	TOTAL	18215.731	348	52.344		
4	School	880.998	4	220.249	5.104	
	Deletion	1482.283	6	247.047	5.725	
	School D	1050.029	24	43.751	1.014	
	Residual	13550.900	314	43.158		
	TOTAL	16968.550	348	48.760		

*Method I Cloze Scoring - Exact-Word Replacement



+ METHOD II CLOZE SCORING

Analysis of Variance of Book, School and Deletion

Book	Source of Variation	Sum of Squares	DF	Mean Square	F	F Significance
1	School	60.856	4	15.214	1.267	.283
	Deletion	77.036	6	12.839	1.070	.381
	School D	307.487	24	12.812	1.067	.381
	Residual	3529.438	294	12.005		
	TOTAL	3985.222	328	12.150		
2	School	143.667	4	35.917	3.544	.008
	Deletion	283.535	6	47.256	4.662	.001
	School D	315.054	24	13.127	1.295	.165
	Residual	2979.962	294	10.136		
	TOTAL	3726.030	328	11.360		153
3	School	43.272	4	10.818	1.024	.395
	Deletion	339.337	6	56.556	5.356	.001
	School D	310.346	24	12.931	1.225	.219
	Residual	3104.723	294	10.560		
	TOTAL	3803.264	328	11.595		
4	School	64.775	4	16.194	1.666	.158
	Deletion	132.695	6	22.116	2.275	.037
	School D	288.473	24	12.020	1.236	.209
	Residual	2858.427	294	9.723		
	TOTAL	3350.116	328	10.214		

Method II Cloze Scoring - Acceptable-Word Replacement (Synonym Replacement, etc.)

Cloze Procedure Scoring

t Tests
and Methods of Scoring

M 1 = Exact-Word Replacement

	<u>Book 1</u>		<u>Book 2</u>		<u>Book 3</u>		<u>Book 4</u>
D 1	18.40	<	20.33	>	18.74	<	22.62
D 2	15.15	<	19.35	>	17.03	<	23.75
D 3	15.40	<	19.97	=	18.38	=	18.16
D 4	14.06	<	21.76	>	18.42	<	21.25
D 5	11.92	<	21.50	>	15.81	<	19.69
D 6	13.62	<	24.84	>	19.57	=	18.86
D 7	16.58	<	23.91	>	16.41	<	19.27

M 2 = Acceptable-Word Replacement

D 1	7.05	=	7.79	>	6.35	=	6.20
D 2	7.88	=	6.94	=	7.90	>	6.24
D 3	6.02	=	6.67	>	5.00	<	7.16
D 4	6.42	>	4.57	<	5.73	<	7.40
D 5	5.90	=	6.79	>	4.86	<	5.83
D 6	6.62	=	5.62	<	7.02	=	6.60
D 7	5.97	=	6.45	=	7.29	>	5.91

Total Cloze Score

D 1	25.59	<	27.75	>	24.92	<	28.64
D 2	21.90	>	25.66	=	23.92	<	29.81
D 3	21.34	<	26.63	>	23.59	<	25.32
D 4	20.70	<	26.34	=	25.44	<	28.18
D 5	17.75	<	28.32	>	20.67	>	25.50
D 6	20.37	<	30.44	>	26.82	=	25.46
D 7	22.66	<	30.18	>	23.93	=	25.18

EXACT AND ACCEPTABLE-WORD REPLACEMENT SCORES

	1 = N54		2 = N55		Schools 3 = N37		4 = N117		5 = N87	
	$\bar{\mu}$	σ	$\bar{\mu}$	σ	$\bar{\mu}$	σ	$\bar{\mu}$	σ	$\bar{\mu}$	σ
Book 1										
M1	16.37	7.01	11.27	5.68	13.45	4.97	16.23	6.39	15.77	6.67
M2	7.30	3.23	6.79	4.09	5.55	2.87	6.30	3.22	6.96	3.67
T	23.40	9.01	18.14	8.30	19.55	7.28	22.39	7.38	22.27	9.51
Book 2										
M1	22.90	8.39	18.16	7.98	21.10	7.95	22.24	7.65	22.42	8.61
M2	7.75	4.06	7.00	3.13	6.13	3.69	5.98	2.76	5.93	3.38
T	30.31	9.92	24.85	9.41	27.69	7.86	28.05	8.60	28.18	9.34
Book 3										
M1	20.88	7.01	13.23	7.23	16.75	6.94	17.90	6.60	15.80	6.70
M2	6.52	3.26	6.09	3.28	5.41	2.88	6.17	3.22	6.62	4.00
T	27.20	9.03	19.03	9.16	22.56	8.87	24.51	10.10	25.47	9.20
Book 4										
M1	21.77	7.89	18.05	6.51	18.45	6.08	20.64	6.03	22.43	7.57
M2	7.22	2.64	6.88	3.88	5.66	2.49	6.54	3.48	5.88	3.01
T	28.87	9.37	24.81	8.12	23.97	7.31	27.15	7.83	28.18	9.03

N - Number of cases

M1 - Exact Word Replacement Score

σ - Standard Deviation

M2 - Acceptable Word Replacement Score

T - Total of Exact and Acceptable Replacement Score

APPENDIX J

Cases Dropped From Sample

CASES DROPPED FROM SAMPLE

Student	Age	Years in School Yr., Mth.	Passage	Deletion Pattern	Scores											
					Book 1			Book 2			Book 3			Book 4		
					E	A	T	E	A	T	E	A	T	E	A	T
1			A	3	13	10	23	36	02	38	27	03	30	25	15	40
2	36	2, 2	B	2	03	01	04	01	03	04	-	-	-	06	03	09
3	42	4	B	6	01	01	02	08	02	10	06	02	08	04	04	08
4	23	8, 3	A	4	04	01	05	15	01	16	01	-	01	05	01	06
5	24	10, 3	A	4	16	08	24	31	01	32	-	-	-	13	04	17
6	35	10, 3	B	3	12	03	15	07	06	13	14	01	15	-	-	-
7	35	4, 6	B	1	01	-	01	01	-	01	01	-	01	06	-	06
8	43	7, 2	B	6	11	04	15	17	05	22	-	-	-	13	04	17
9	32	11, 3	B	6	13	-	13	23	01	24	-	-	-	15	05	20
10	22	6, 3	B	1	-	-	-	15	01	16	16	06	22	05	01	06
11	47	3, 3	B	6	02	01	03	10	-	10	-	-	-	09	01	10
12	23	6, 3	B	6	03	-	03	02	-	02	-	-	-	04	-	04
13	50	7, 2	B	4	-	-	-	-	-	-	-	-	-	01	01	02
14	19	4, 2	A	7	04	06	10	17	06	23	-	-	-	10	03	13
15	40	5, 3	B	7	04	-	04	-	-	-	01	-	01	03	03	03
16	30	3, 3	A	4	01	-	01	06	-	06	-	-	-	06	03	09
17	18	4, 3	A	3	10	05	15	-	-	-	14	07	21	10	14	24
18	28	8, 3	B	6	13	05	18	16	08	24	-	-	-	16	11	27
19	17	3, 3	B	7	07	09	16	08	-	08	-	-	-	-	-	-
20	30	9, 3	A	1	11	03	14	18	04	22	11	07	18	-	-	-

E = Exact word replacement

A = Acceptable word replacement

T = Total of Exact and Acceptable

BIBLIOGRAPHY

BIBLIOGRAPHY

- Apolayan, A. 1966. "Some problems of English in Western Nigeria." English Language Teaching 3 (May): 257-262.
- Allen, Virginia French. 1971. "Toward a Thumb-Nail Test Of English Competence." TESOL Quarterly 2: 240-242.
- Anderson, J. 1969. "Application of Cloze Procedure to English Learned as a Foreign Language." Ph.D. Dissertation, University of New England.
- _____. 1971. "A Technique for Measuring Reading Comprehension and Readability." English Language Teaching 25: 178-182.
- _____. and Hunt, A. H. 1972. "A Frame of Reference for Cloze Tests of Readability of English Learned as a Foreign Language." New Guinea Journal of Education 8: 184-188.
- Bambose, A. 1967. "Language Teaching in Nigeria — A Linguistic Viewpoint." West Africa Journal of Education (October): 151-166.
- Betts, E. A. 1946. Foundations of Reading Instruction. New York: American Book Company.
- Bickley, A. C., Bickley, Rachel T. and Ellington, Billie J. 1970. "The Cloze Procedure: A Conspectus." Journal of Reading Behavior 2: 232-243.
- Bond, G. L. and Tinker, M. A. 1967. Reading Difficulties: Their Diagnosis and Correction. New York: Appleton-Century-Croft.
- Bormuth, John P. 1965. "Validities of Grammatical and Semantic Classifications of Cloze Scores." International Reading Association Conference Proceedings 10: 283.

- _____. 1966. "A New Approach." Reading Research Quarterly: 79-132. (ERIC Document Reproduction Service No. ED 011 480.)
 - _____. 1967a. "Comparable Cloze and Multiple Choice Comprehension Test Scores." Journal of Reading 10 (February): 291-299.
 - _____. 1967b. "New Developments in Readability Research." Elementary English 44: 840-845.
 - _____. 1967c. The Implication and Use of the Cloze Procedure in the Evaluation of Instructional Programs. Bethesda, Maryland. (ERIC Document Reproduction Service No. ED 021 074.)
 - _____. 1968a. Elementary English 45 (April).
 - _____. 1968b. Readability in 1968. New York: National Council of Teachers in English.
 - _____. 1968c. "New Data on Readability." Proceedings of the Annual Convention International Reading Association 12: 488-492.
 - _____. 1968d. "Cloze Test Readability Criterion Referenced Scores." Journal of Educational Measurement: 189-196.
 - _____. 1969a. "Factor Validity of Cloze Tests as Measures of Reading Comprehension Ability." Reading Research Quarterly (Spring): 358-365.
 - _____. 1969b. "An Operational Definition of Comprehension Instruction." Psycholinguistics and the Teaching of Reading: 48-60.
 - _____. 1975. In: William D. Page (Ed.), Help for the Reading Teacher: New Directions in Research. Urbana: Illinois: National Conference on Research in English-ERIC).
- Bowen, J. D. 1969. "A Tentative Measure of the Relative Control of English and Amharic by Eleventh Grade Ethiopian Students." Workpapers in TESOL 2: 69-89.
- _____. 1972. "TESOL Research for the Classroom." TESOL Quarterly 6: 351-362.
- Boyce, Max William. 1974. Some Difficulties in Using Cloze Procedures to Assess Readability. April. (ERIC Document Reproduction Service No. ED 110 921).

- Caffey, Musa B. 1975. The Cloze Procedure... A Measure for Determining Readability Level for Vocational Junior College Students. November. (ERIC Document Reproduction Service No. ED 116 743.)
- Carin, A. Arthur and Sund, Robert B. 1971. Developing Questioning Techniques. Columbus Ohio: Charles E. Merrill Publishing Company.
- Carrol, Brendan J. 1962. "An English Language Survey in West Africa." English Language Teaching 4 (July): 205-211.
- Chall, Jeanne S. 1958. Readability: An Appraisal of Research and Application. Columbus, Ohio: The Ohio State Univeristy.
- Cherney, Elaine E. 1975. "Relationship of Reading Ability to Remedial Track University Freshmen to Text Readability and Instructional Methodology." Ph.D. Dissertation, Michigan State University.
- Chomsky, N. 1957. Syntactic Structure. The Hauge: Mouton.
- Christopherson, 1971. "Is Structuralism Enough?" Language. 106-107.
- Cimino, Ralph. 1977. Personal communication (January 12).
- Clark, M. L. and Johnson, B. 1972. "Cloze Procedure in Measuring Comprehension: Simple or Complex?" Mimeo-graphed paper, A.C.E.E.
- Coleman, E. B. 1968. "Experimental Studies of Readability, Part II." Elementary English 45: 324-333.
- _____. 1971. "Developing a Technology of Written Instruction: Some Determiners of the Complexity of Prose. In: Rathkopf, E. and Johnson, P.E. (Eds.) Verbal Learning Research and the Technology of Written Instruction. New York: Teachers College Press, Columbia University.
- Condon, Elaine. 1973. "The Cultural Context of Language Testing." Papers in Language Testing: 204-217.
- Culhane, J. F. 1970. "Cloze Procedure and Comprehension." Reading Teacher 23 (February).

- Dakin, Julian, et al. 1968. Language in Education. London: Oxford University Press.
- Dale, Edgar and Chall, Jeanne S. 1949. "The Concept of Readability." Elementary English 26: 19-26.
- _____ and Seels, Barbara. 1966. Ten Important References on Readability. December: 252-253.
- Darnell, D. K. 1968. The Development of an English Language Proficiency Test of Foreign Students Using a Clozentropy Procedure. October. (ERIC Document Reproduction Service No. ED C24 039.)
- Dishner, Ernest K. 1973. The Cloze Procedure. A Valuable Tool for Content Teachers. (ERIC Document Reproduction Service No. ED 123 602.)
- Duffy, Gerald G. and Sherman, George B. 1973. How to Teach Reading Systematically. New York: Harper & Row Publishers.
- Dunn, Mary Kathryn and Laffey, James L. 1969. Research on Readability. Word Lists. ERIC/CRIER Reading Review Series, Volume 2, Bibliography 18. Bloomington: Indiana University. (September). (ERIC Document Reproduction Service No. ED 030 778.)
- Elliott, A. V. P. 1952. "The Teaching of English in Africa." English Language Teaching 7, No. 1.
- Fay, Leo. 1971. Reading Research: Methodology, Summaries and Application. Bloomington, Indiana: Indiana University. (May). (ERIC Document Reproduction Service No. ED 049 023.)
- Flattery, George. 1976. Personal communication (December).
- Flesch, Rudolph. 1943. Marks of Readable Style. New York: Bureau of Publishers, Teachers College, Columbia University.
- _____. 1951. How to Test Readability. New York: Harper & Brothers.
- Fry, Edward. 1968. "A Readability Formula that Saves Time" Journal of Reading 11, No. 7 (April): 513-517.

- Gatenby, E. V. 1950. "Conditions for Success in Language Learning." English Language Teaching: 9-15.
- Geyer, James R. 1970. "Evaluation of Readability — Prediction of Comprehension." Journal of Reading Specialists 10, No. 2 (December): 83-87.
- Gray, W. S. 1963. Gray Oral Reading Tests. Indianapolis: Bobbs-Merrill.
- Hagstrom, Jon M. 1971. A Comparison of the Reading Abilities of a Junior College Population and the Readability Levels of their Texts. (April). (ERIC Document Reproduction Service No. ED 050 902.)
- Harris, A. J. 1962. Effective Teaching of Reading. New York: David McKay.
- Hays, Warren S. 1975. Criteria for the Instructional Level of Reading. (ERIC Document Reproduction Service No. ED 117 665.)
- Interim Report on Vocabulary Selection for the Teaching of English as a Foreign Language. London: P. S. King & Son, Ltd. 1936.
- Jacobs, Robert, et al. 1966. English Language Teaching in Nigeria. Lagos: Ford Foundation.
- Johnson, C. 1968. "Context between Cloze Deletions." Unpublished paper, University of New England.
- Kaplan, R. and Jones, R. A. 1970. "A Cloze Procedure Test of Listening for University Level Students of ESL." University of Southern California.
- Killgallon, P. A. 1942. "A Study of the Relationships among Certain Pupils Adjustments in Language Situations" Ph.D. Dissertation, Pennsylvania State College.
- Klare, George R. 1963. The Measurement of Readability. Ames, Iowa: Iowa State University Press.
- _____. 1973. Factors Relating to Correspondence and Other Non Traditional Instruction: The Role of Readability. (February). (ERIC Document Reproduction Service No. ED 078 354).
- _____. 1974-1975. "Assessing Readability." Reading Research Quarterly 1.

- _____, Sinaika, H. W. and Stolurow, L. M. 1972. "The Cloze Procedure: A Convenient Readability Test for Training Materials and Translations." International Review of Applied Psychology 21: 77-106.
- Leedy, Paul D. 1974. Practical Research. New York.
- Lorge, Irving. 1939. "Predicting Reading Difficulty of Selections for Children." The Elementary English Review 16 (October): 229-233.
- _____. 1949. "Readability Formulae — An Evaluation." Elementary English 26, No. 1 (January-December): 86-95.
- MacGinitie, W. H. 1961. "Comments of Professor Coleman's Paper." Paper presented at Symposium on Verbal Learning Research and the Technology of Written Instruction, Columbia University.
- Mason, V. W. 1971. "Language Competence as Measured by Cloze Tests." Workpapers in TESL. MA Thesis, UCLA.
- McLaughlin, G. Harry. 1966. "Proposals for British Readability Measures." The Third International Reading Symposium: Today's Child and Learning to Read. John Downing and Amy L. Brown (Eds.). London: Cassell.
- _____. 1969a. "SMOG Grading — A New Readability Formula." Journal of Reading 12, No. 8 (May): 639-645.
- _____. 1969b. "Clearing the SMOG." Journal of Reading 13, No. 3 (December): 210-211.
- McLeod, J. 1974. "Uncertainty Reduction in Different Languages Through Reading Comprehension." Journal of Psycholinguistic Research 4: 343-355.
- Miller, G. R. and Coleman, E. B. 1967. "A Set of 36 Prose Passages Calibrated for Complexity." Journal of Learning and Verbal Behavior 6: 851-854.
- Miller, Wilma. 1974. Reading Diagnosis Kit. New York: The Center for Applied Research in Education, Inc.
- Meyers, Phyllis C. 1976. Latest Research and Uses. (ERIC Document Reproduction Service No. ED 123- 556.)

- Oller, J. W., Jr. 1972a. "Scoring Methods and Difficulty Levels for Cloze Test of Proficiency in English as a Second Language." Modern Language Journal 56: 151-158.
- _____. 1972b. "Assessing Competence in ESL: Reading." TESOL Quarterly 6: 313-323.
- _____. 1973. Pragmatic Language Testing. Bloomington, Indiana: University of Indiana: 7-12.
- _____. 1975. Research with Cloze Procedure in Measuring Proficiency of Non-Native Speakers of English. (April). (ERIC Document Reproduction Service No. ED 104 154.)
- _____. and Conrad, Christine A. 1971. "The Cloze Procedure and ESL Proficiency." Language Learning 21: 183-195.
- _____. and Inal, Nevin. 1971. "A Cloze Test of English Preposition." TESOL Quarterly 5: 315-326.
- Olsen, Turee. 1975. "Grading Alternatives." English Journal (March).
- _____. 1975. "Improving Reading Skills." Journal of Reading (December): 268-271.
- Oppenheim, A. N. 1966. Questionnaire Design and Attitude Measurement. London: Heinemann Educational Books, Ltd.
- Page, William. 1975. Help for the Reading Teacher. New Directions in Research. ERIC Clearinghouse on Reading and Communication Skills, National Institute of Education (March).
- Pessah, Nathan. 1975. The Effect of Various Teaching Techniques, Involving the Cloze Procedure, upon the Reading Achievement of Communit College Students. (May). (ERIC Document Reproduction Service No. ED 110 945.)
- Pomerville, Paul. 1976. An Audience Profile Model of the Third World for the Development of an Intercultural Curriculum of Self-Instructional Texts. Brussels, Belgium: International Correspondence Institute.
- Popham, W. J. and Sirotnik, K. A. 1973. Education of Statistics. New York: Harper & Row.

- Popp, Helen M. and Porter, Douglas. 1975. Measuring the Readability of Children's Trade Books. Cambridge, Mass.: Harvard University (July). (ERIC Document Reproduction Service No. ED 113 684.)
- Purves, Alan. 1975. "Testing and the Recession." English Journal 64,3 (March).
- Rankin, E. F. 1967. "Research Design and the Cloze Procedure." In: Figurel, J. A. (Ed.) Vistas in Reading. Newark, Delaware: International Reading Association.
- _____. 1971. "Grade Level Interpretation of Cloze Readability Scores." ERIC Research in Education, Milwaukee, Wis.: National Reading Council: 30-37. (ERIC Document Reproduction Service No. ED 046 657.)
- _____. and Culhane, J. F. 1969. "Comparable Cloze and Multiple-Choice Comprehension Test Scores." Journal of Reading 13 (December): 193-198.
- Robeck, M. C. and Wilson, John A. R. 1974. Psychology of Reading: Foundations of Instruction. New York: John Riley & Sons, Inc.
- Rudell, R. B. 1964. "An Investigation of the Effect of the Similarity of Oral and Written Patterns of Language Structures by Reading Comprehension." Dissertation Abstracts. (1864, 24 5207-5208A).
- Rupley, William H. 1975. The Reading Teacher. Texas A & M University (December): 314-317.
- Sax, Gilbert. 1968. Empirical Foundations of Educational Research. Englewood Cliffs, New Jersey: Prentice Hall Inc.
- Schwartz, Roswitha, E. W. 1975. An Exploratory Effort to Design a Readability Graph for German Material. (ERIC Document Reproduction Service No. ED 123 565.)
- Simon, H. D. 1971. "Reading Comprehension: The Need for a New Perspective." Reading Research Quarterly 6: 338-363.
- Stubbs, Joseph Bartow and Tucker, G. Richard. 1974. "The Cloze Test as a Measure of English Proficiency." Modern Language Journal 58: 239-241.

- Taba, Hilda. 1962. Curriculum Development — Theory and Practice. New York: Harcourt, Brace & World.
- Taylor, Wilson L. 1956. "Recent Developments in the Use of 'Cloze Procedure'." Journalism Quarterly 33: 42-48.
- . 1953. "Cloze Procedure: A New Tool for Measuring Readability." Journalism Quarterly (Fall): 415-433.
- Thompson, P. Drummond. 1963. "English in the Commonwealth: Nigeria." English Language Teaching 17 (July): 152-158.
- Thorndike, E. L. 1917. Journal of Educational Psychology 8: 323-332.
- Van Rooy, Lois. 1974. Readability Studies and the Writer of Instructional Materials. Carbondale: Southern Illinois University, Illinois State Board of Vocational Education and Rehabilitation, Springfield Division of Vocational and Technical Education.
- Walter, Richard B. 1974. Historical Overview of the Cloze Procedure. Kean College of New Jersey. (ERIC Document Reproduction Service No. ED 094 337.)
- Weintaub, Samuel. 1968. "Research." The Reading Teacher 21: 567-571.
- William and McDavid. 1966. English Words of Very High Frequency. Virginia (May). (ERIC Document Reproduction Service No. ED 010 978.)
- Williams, Allan R., Jr., et al. 1974. Readability of Textual Material — A Survey of the Literature. Lowry, AFB, Colo.: ERIC - Air Force Human Resources Lab. (July). (ERIC Document Reproduction Service No. ED 097 642.)
- Williams, Morris. 1977. Personal communication, Springfield, Missouri (January 4).

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