A COMPARISON OF THE READING ABILITIES OF JUNIOR SECONDARY SCHOOL STUDENTS WITH THE READING LEVELS REQUIRED OF THEM IN THEIR CONTENT AREAS

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ABSTRACT

This study was an attempt to compare the reading comprehension level of Ethiopian Junior Secondary School students with the levels expected of them in their content areas. To achieve this, the readability level of the seventh grade textbooks for Geography and Science, which are taught in English, was assessed using the Fog Index. What is more, in order to identify the comprehension level of the students, six cloze tests were administered to a randomly selected sample. A student questionnaire and interviews were also used to investigate the problems the students face in reading their textbooks. In addition to the above tools a readability checklist was used to assess the views of Geography and Science teachers about the readability of the texts. Based on the opinion expressed by the teachers and the students, a sample unit from the Geography textbook was prepared to see the effect of text simplification on the students' reading and understanding. Finally, the attitude of subject teachers towards the teaching of reading in the content areas was assessed.

The findings from the study indicated that the Geography textbook is appropriate to the seventh grade students as far as the Fog Index is concerned. But the Science Textbook is

slightly above their level. The result of the cloze tests showed that the comprehension level of the students is at a frustration level. The questionnaire and the interview results revealed that many students cannot read and understand their textbooks because of vocabulary and sentence complexity. Findings from the checklist showed that content area teachers feel that the two textbooks are adequate. The results of the readability Fog Index and the cloze test of the simplified unit indicated that the readability level of the simplified unit is appropriate to the seventh grade. But the students' performance on the cloze test was found to be very low. Finally, the findings from the attitude measurement scale indicated that content area teachers feel that they are not prepared to teach reading in the content classroom.

Based on the findings, it is recommended that students must be prepared in elementary English classes to develop their vocabulary and independent reading. In the Junior Secondary level, students should be helped in their content reading through the use of familiar vocabulary and simple sentences, and questions of various kinds at the pre-reading and post-reading stages leading to discussions and activities. What is more, new concepts should be introduced in relation to what is familiar to the students and a step by step approach should be used to develop these concepts with various examples and illustrations. In order to raise the teachers' awareness of the problem of reading and positively influence their attitude to the teaching of reading, seminars, workshops and

in-service training should be organized in a continuous basis. In addition, courses on the reading skills should be offered to the teacher trainees. Finally, it is recommended that the readability of content texts should be carefully assessed and there should be a working relation between the English panel and other panels of the Ministry of Education Curriculum Division in material preparation.

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CHAPTER 1

INTRODUCTION

1.1 Statement of the Problem

There is a growing concern about the problem of reading in content areas (Deboer et al., 1960; Herbert, 1978). The problem is even more serious in those situations where English is used as a language of instruction (Rye et al, 1982). The students' reading ability is rather poor. As a result of this, students are not performing well in their academic studies. This is also a problem in Ethiopian schools and colleges (Hailemichael, 1989; Alefesh, 1988). The problem starts in the Junior Secondary Schools. It is here that the students in Ethiopia begin to learn some of their academic subjects in English. The subjects taught in English are Geography, Science, and Mathematics.

1.2 The Purpose of the Study

The purpose of this study is to investigate the problems of the seventh grade students in respect to reading their content area subjects. The specific objectives of this study are to:

- Assess the readability difficulty level of the seventh grade Geography and Science texts.
- Determine the level of comprehension of the seventh grade students.
- Explore the nature of the problem the seventh grade students face in reading and comprehending their texts.

- Weigh the opinion of the content area teachers about the content area texts.
- See the effect of simplified versions of the texts.
- Assess the attitude of content area teachers to the teaching of reading in the content area.

In line with the above, the following basic questions will be asked:

a) Are the seventh grade Science and Geography texts readability level appropriate to the grade?
b) Is the level of comprehension of the students equal to the level expected of them?
c) What sort of problems do the students face in reading and comprehending their texts?
d) How do teachers of Geography and Science rate the readability of the two texts?
e) Is there any difference between the text now in use and a simplified unit in easing the readability difficulty?
f) What is the attitude of content area teachers to the teaching of reading within the subject teaching?

1.3 Importance of the Study

The seventh grade is the level at which the use of English as a medium of instruction begins. It is at this level that the students develop an attitude towards reading content area subjects in English. If the texts they are using are readable, the students may be motivated and interested to read and to try to understand their texts. But

if this is not the case, students will probably form a negative attitude and this will have a direct bearing on their future academic performance.

At present, three subjects, i.e.; Geography, Science and Mathematics are taught in English in the seventh grade. Research into the nature of the problem in connection with this is therefore vital. The knowledge gained therein can have application in the preparation of subjects area textbooks and in suggesting ways of helping students with their English language problems.

In this research, the readability difficulty level of the seventh grade subject textbooks will be assessed. This will be followed by cloze tests and questionnaires. In the past Tsegaye (1982), Mendida (1988), Berhe (1989), Dubale (1990), and Tadesse (1990), have all dealt with the question of text readability and level of comprehension of students at different levels. While Tsegaye (1982) and Mendida (1988) handled the issue at the tertiary level, Berhe (1989) focused on the tenth grade. Dubale (1990), attempted to find out a possible relationship between reading in English and performance in content area subjects taking the ninth grade as his sample. Moreover, Tadesse (1990) focused his attention on finding a relation between English language proficiency and the performance on content area subjects taking the seventh grade as his case study.

Up to now, the researchers have all concentrated on the readability of textbooks. This research goes a little further. It addresses not only the issue of establishing the readability level of the seventh grade textbooks, but it tries to find out the comprehension level of the students by using cloze tests. In the previous researches no attempt was made to probe into the actual problem of reading and comprehension. In this study a questionnaire and a follow up interview will be conducted with subjects to assess the problem the students face in reading and understanding their subjects. Moreover, a readability checklist will be distributed to content area teachers to collect their views about the texts. Finally, a sample unit will be simplified to see the effectiveness of the process. An attempt will also be made to measure the attitude of the content area teachers towards the teaching of English in general and that of reading in particular in the content classes.

1.4 Limitation and Scope of the Study

In this research the sample school selected is specific and the subjects involved in the various investigations are limited. Because of the continuous decline of the educational standard since the last two decades, the situation observed and the problems identified in all schools are more or less similar. Thus, it is believed that the selection will have no effect on the reliability of the findings.

The school selected for this study is Entoto Amba Elementary and Junior Secondary School. The selection was done for the following reasons.

As pointed out by Tibebu (1987) in his M.A. thesis, it is the government school students that have proficiency level lower than the privately run mission schools. In fact, one of the problems is that of reading in content areas. Although the study was done at high school level, the situation is the same in the Junior levels. In addition, private schools usually include in their teaching other supplementary teaching materials. Thus, the study was done on the government school.

The school was selected because it is near the campus and at the same time questions and problems that might arise in due course were easily verified and properly addressed.

1.5 Definition of Terms

Unless otherwise specified, the following terms will be used throughout the study according to the definitions below.

SCIENCE - Science Comes to Life for Grade 7

GEOGRAPHY - Geography Grade 7

CONTENT AREA TEACHERS - Teachers teaching content area subjects

CHAPTER 2

REVIEW OF LITERATURE

2.1 The Importance of Reading

In this review, the literature about reading which is relevant to the subject under consideration will be discussed. As one of the four skills in language learning, reading was not seriously taken into account in the past. Going back to the recent history of reading, since the 60's and the 70's where the audiolingual method emphasis on speech was questioned, reading started to emerge as one of the four skills. Grabe (1991) reflecting on the shift says the following: "On a practical level, then ESL instruction changed in the early 1970's to emphasize advanced reading and writing instruction albeit with out a strong theoretical framework to guide practice." (p.376) Furthermore, Freeman (1986) explains how in the classical teaching method, oral reading was the utmost preoccupation. This continued up to the 60's where structuralists appeared on the scene. But in the 60's and 70's there was a shift in approach to reading in the U.S.A. This was due to the need for adequate skills of reading. Silberstein (1987) quoting David Eskey says:

> One of the results of structuralist dogma that 'language is speech' has been a relative lack of interest of English as a foreign language for whom the ability to read the written language with good comprehension at reasonable rate may be at least as important as the ability to converse. (p.29).

As years passed the importance of reading in English has forced its way into the four corners of the world. At present almost all the knowledge and information in science, technology and social science is encoded in the English language. Consequently, the need to learn more in any field presupposes a good ability of silent reading with an average comprehension. At present, there is a total agreement in the importance of silent reading. Unless there is a special case, according to Nuttall (1982), oral reading is no more encouraged.

In the present world reading is no longer a mere decoding of print for meaning; but it has extended to influence communication at large. Moreover, the advance of technology and increased complexity of social organizations make the communication of information more crucial than ever. One of the best means of communication in this regard is reading. Bormouth (1978) as quoted in Taylor (1983), says the following: "Although we have developed many other media for communicating some of this information, the written word has borne and continues to bear a long fraction of the load." (Taylor 1983:3)

Reading is defined to include the interaction between the reader and the text to extract meaning encoded in print. According to Yorio, in Alderson (1984), reading involves four factors: knowledge of the language, ability to predict or guess in order to make the correct choices, ability to

remember the previous cues and ability to make the necessary associations between the different cues that have been selected.

As one of the four skills of language learning, reading involves many subskills that an efficient reader should have. Moreover, Grellet (1981), discusses the many reasons that entail reading and how every reader should read anything depending on the purpose he attaches to it. This doesn't mean that reading is a linear activity where one activity is followed by another, but is rather, in the words of Grabe (1991), "a selective process."

2.2 Works on Readability

2.2.1 Brief History

Due to the shift to silent reading, different materials were written to be consumed by the society at large. Consequently, the need to measure the readability of books for learning gradually became necessary. Thus, the formulation of readability formulas to measure the difficulty of textbooks continued to be developed unabated.

According to Hildreth (1958), the term readability refers to the relative difficulty of a reading material. In addition to this, Harris, speaking about the readability in the classroom, says the following "... when we use the term readability we mean in effect the comprehensibility of a text."(Harris 1983:33). Moreover, Nuttall (1982) understands

readability as the combination of structural and lexical (i.e., vocabulary) difficulty. But readability is not restricted to the linguistic factors of a text. In addition to this, it refers to the constellation of text factors (layout, motivational aspect, reinforcement) which together determine whether a reader will be likely to find a book attractive, interesting, and comprehensible.

Based on the above explanations, if we want our students to love reading and use reading as a tool for study, the reading material provided in the content areas should be within reasonable range of readability.

It is important that a meaningful, professional judgment be made about the readability of content area subjects. As Rye (1982:12) writes:

> If the language is too difficult the task will lead to frustration and an increasing lack of confidence about reading. If the child is continually given language which is easy, the ability to accommodate increasing complex language is not developed.

Thus, scholars have tried to produce a measure to rate the level of difficulty of reading materials. The first to produce a formula of readability was Washburne. Later ,this formula was known as the Washburne Vogal formula. (Hildreth,1958)

In order to produce this formula of readability, teachers conducted a survey of the books according to their

level of difficulty. The teachers and students of different levels were involved in commenting on which book they like best, how and why they like it. Washburne, out of all the available data at hand produced the median chronological age at which a particular book was liked by the boys and girls reporting. This was then followed by the determination of the formula for rating the level of reading ease. The elements included in the formula were:

1) The number of different words occurring in a 1000 word passage.
2) The number of preposition (including duplicates) occurring in 100 word samples.
3) The number of simple sentences in 75 sentences.

(Hildreth, 1958:373)

Since then many formulas have been developed. Although some attempts have been made to incorporate personal factors into the formula, (Maxwell, 1978, Rye 1982) most of these formulas give importance to three main elements. These are: sentence length, word length and word frequency. On the other hand, Harris (1980) believes that the readers' factors are important because they make books either difficult or easy. Thus, Harris classifies the main sources of text difficulty into two broad groups: readers' factors (such as students' background, knowledge about the world, store of vocabulary) and text factors (legibility of print, illustrations and colour, conceptual difficulties, etc.) (Harris, 1980: 12-14).

Although there were reservations to the measurement of the difficulty level of texts by readability formula, these formulas have been widely used since the 20's. In Ethiopia the issue of readability formulas and the measurement of the difficulty level of content area texts by the various formulas was a recent phenomena. Among the few studies that have so far been made, Tsegaye (1982) studied the comprehension ability of Addis Ababa University Freshman students. He found that the reading grade level of Addis Ababa University Freshman Geography and Chemistry textbooks were proper as far as the reading difficulties were concerned. On the other hand, the comprehension ability of Addis Ababa University Social Science Freshman was found to be extremely poor. But, natural science Freshman students could read their textbooks with limited comprehension. In a similar way, Mendida (1988) carried out an investigation comparing the reading level of Bahir Dar Teachers' College Freshman students with the reading level expected of them. He found that the students' ability of the English language was below the expected standard and pointed out how the problem was acute. Berhe's (1989) research was on the readability level of grade ten textbooks and the comprehension ability of the students using the texts. His conclusion was that History and Geography textbooks were above the level of the students reading ability while Biology and English were below their grade level. The comprehension ability of 95% of the students was at the frustration level for the four textbooks.

Generally speaking, the readability formulas are good measures to indicate the relative level of difficulties of a text, but they still have many shortcomings.

2.2.2 Shortcomings of Readability Formulas

It is a fact that all readability formulas give us an approximate measurement of texts. The shortcomings can be viewed from different angles. In terms of the computation of some formulas, Mendida (1988) quoting Grilliland (1975) and Rye (1982), lists the following problems.

- Excessive work time and difficulties of computation
- The effect of variation of samples, and,
- The over simplification caused by the general use of word and sentence measure.

Another kind of shortcoming has to do with what the various readability formulas can measure and what they can't measure. In the first place, all readability formulas measure only things that can be counted (Hansell, 1981). On the other hand, as the number of formulas to predict the readability of a text increases, doubts are expressed about other factors that may equally affect the readability of a text. These factors are presented by Harris in the following way:

> Children have a unique personal vocabulary and store of background knowledge which will determine how they can respond to a text. Their own interests and level of motivation will also affect how much is comprehended. Yet these factors are not

> always readily accessible to the teacher [to the formulas]
>
> (Harris, 1980:1)

In addition to the above shortcoming Rye (1982) says that they, i.e., the numerous formulas, only attempt to quantify certain factors in readability. He goes on to say that they ignore important aspects of text production such as size of print. What is most important according to Rye is that they ignore important factors associated with the children such as children's motivational state at the time of reading and the degree of background knowledge which they bring with them to the text.

On the other hand, Maxwell, after stating the brief historical development of some of the formulas under consideration, gives the following comment about the weak points of these formulas. He says: "Although all of the readability and reading interest measures mentioned above can be applied objectively to written materials, they consider neither the semantics nor the syntax of the passage and have serious limitation." (Maxwell, 1978: 526)

As a matter of fact, the reading level which may be established by computation is not supposed to be taken as an exact measure but is a rough indicator of the level. Nuttall (1982) says that the measurement should not be taken as a completely reliable indicator but the results give a rough guide which is useful if we have to assess the text ourselves. Moreover on this point, the measurement of

content area texts according to Hansell should be handled with care. He says the following.

> .... A readability formula may suggest that a text is at the seventh grade level, but not every student in an eighth grade class is necessarily able to read it with comfort. Many need instruction to help them cope with the text.
>
> (Hansell, 1981: 697)

The procedure that sample passages are taken from a given text and that the average is computed to measure the difficulty of a text has its drawbacks. Herbert has this to say: ".... This (The computing of average from sample passages) means that the text has within it some sections below, some at, and some above the grade level assigned to the total text. Thus, the problem is compounded." (Herbert, 1978; 17)

Generally speaking, all readability formulas focus on the linguistic aspect of the text and pay little or no attention to the factors such as the organization of a textbook, the layout, the importance of motivation, etc. Although readability scores alone are not adequate predictors of comprehension because of all the factors which they do not consider, according to Westphal (1980) it is clear that they do provide useful information. Moreover, Klare (1976) as quoted in Westphal (1980) reports that 19 of the 36 studies he cites have showed a significant relationship between comprehension and readability scores. What goes with this is

that the readability difficulty level of any text can also be verified by the use of the cloze test.

2.3 The Cloze Procedure

2.3.1 Brief History

According to Weir (1990), the term 'cloze' was first introduced by W. L. Taylor (1953) who took it from the Gestalt concept of 'closure' which refers to the tendency of individuals to complete a pattern once they have grasped its overall significance. Taylor as quoted in Weir (1990) says the following:

> A cloze unit may be defined as any single occurrence of a successful attempt to produce accurately a part deleted from a 'message' (any language product), by deciding from the context that remains what the missing part should be.
>
> (Weir, 1990:46)

In another instance, Alderson defines 'cloze' as "The systematic deletion of words from texts." (Alderson, 1979:219). In addition to the preceding definitions, James Rye, quoting from the Bullock Report describes the cloze procedure as "The use of piece of writing in which certain words have been deleted and the pupils have to make maximum possible use of context clues available in predicting the missing words." (Rye, 1982:1)

Although Taylor had a single and specific purpose in mind when he introduced the term, cloze procedure according to Harris (1980) has been developed in four general directions i.e., readability measurements, standardizing

comprehension testing, diagnosis of individual readers abilities or deficiencies and the reading development.

2.3.2 Cloze and Other Tests

There is still a confusion between cloze and blank filling. Heaton (1990) explains that although cloze tests are similar in several ways to blank filling tests, there are nevertheless basic differences between the two. In an ordinary blank-filling test, we decide which word we will delete from a text. We usually choose important content words, connectives, etc. In this way, we can test a student's ability to understand specific meanings in the test.

In cloze test, however, we never choose which word we want to omit: We delete the words systematically. First, we decide on the length of interval between the missing words, say, we delete every fifth word or every eighth word. If we decide to delete every seventh word, we keep strictly to that number.

In addition, Harris (1980) quoting Lawrence Miller (1975), draws out three crucial differences between cloze and multiple-choice comprehension tests (on which readability formulas were generally validated). First, cloze procedure measures the difficulty of the passage itself, not the difficulty of the questions which are set on it. Secondly, a cloze test measures what a reader brings to the passage in

terms of content knowledge. By contrast, in a multiple choice test the questions come after the reader has read the passage and it is difficult to know it before hand, or because he had learned it by reading the passage carefully.

Moreover, according to Rye (1982), all questions are inevitably biased in the sense that the question setter decides what is important in the passage and formulates questions accordingly. This means that some aspects of the texts are 'examined' less closely than others. The deletion of words at regular intervals provokes thought and requires inferences about a larger proportion of the text.

Still on the same point, Weir (1990) quotes Engineer to underline the difference between cloze test and multiple choice tests. He (i.e.; Engineer) says: "the two techniques were measuring different aspects of the reading activity - namely that a Timed cloze measures the process of reading , i.e., the reader's activity to understand the text while he is actually reading it; multiple choice, on the other hand, measures the product of reading, namely, reader's ability to interpret the abstracted information for its meaning value." (Weir, 1990:46)

Cloze test taken as a measure of the process of reading includes the child in the following:

i) Recognizing words;

ii) Using semantic, syntactic and at times stylistic information to infer and predict;

iii) Drawing meaning from outside the context of the immediate sentence;

iv) Skimming, to recap on what has been read;

v) Scanning, in search of unspecified information that may help the predictions.

(Rye, 1980: 32)

As Dallmann et al. (1974) quoted by Tsegaye (1982) state, what makes a cloze test a very proficient tool for testing comprehension ability is that it can evaluate a readers's ability to integrate several skills. These comprehension skills include the ability to follow direction, to find the main idea, to select significant ideas, to answer questions, to arrive at generalizations, to predict outcomes and to evaluate critically. What is more, the cloze test evaluates a reader's ability to proceed from a word to a phrase, to a sentence and then to a paragraph. Hence, the cloze test is considered to be an extremely valuable tool for testing all these skills at once.

2.3.3 CLOZE AS MEASURE OF READABILITY LEVEL

It is now a common knowledge that the various readability formulas have in general their own merits and demerits in actually measuring the level of difficulty of a text. The major use of the cloze test is also to measure the readability of a text. In some respect the cloze test seems

to be more acceptable than the readability formulas. To start with, the simplest advantage the cloze test has over readability formulas, in the words of Nuttall (1982), is that it requires no computation. In a different approach, Harris (1980) says that the cloze test not only measures but also predicts readability. The fact that the cloze procedure is stable and can be used for testing reading comprehension seemed to make it ideal for readability analysis.

The difference between the cloze test and the readability formulas and the important factors the cloze procedure addresses is explained by Rye (1982:18) as follows:

> Cloze procedure can measure the difficulty of a text, not in terms of word length or familiarity, or sentence length, but in terms of a particular individual's understanding of, and response to, the language structure of the context. Cloze procedure measures a personal response to linguistic variables.

According to Heaton (1990), when a cloze test is used to measure the reading difficulty level of a text, it is a reliable means of determining whether or not certain texts are at an appropriate level for a particular group of students (both native speakers and non-native speakers).

Thus, while readability formulas address only a few features in the text that influence the readability of a text, cloze test measures the interaction of the text with the child reading it and is a much stable measure.

Cloze, as a readability measurement, has thus been widely accepted these days. Although there is a general agreement about the selections of samples, construction and administration of the test, (Harris, 1980; Rye, 1982; Weir, 1990; Heaton, 1991) there is still a difference on marking and interpretation of scores.

All agree that for a sample cloze test at least 250 words with 50 deletions are required. Rye (1982) goes as far as to suggest that for a reasonable one-version cloze test a text of 180 words with 35 deletions should be acceptable.

There is also a common understanding that to have a valid test for a book, three passages must be selected. Each passage has to be at least 250 words in length. And the selection of the passage should be from the beginning, the middle and the end part of the book under consideration.

The other issue in relation to the construction of cloze tests is the issue of the rate of deletion. Many of the writers recommend the 5th word deletion rate. On the other hand, Klare, as quoted in Rye (1982), suggests that the seventh rather than the fifth-word deletion is preferable if the readers are comparatively weak or the passage is likely to be found difficult.

The other problem about the cloze test is the test score. Two views are entertained in regard to this issue. While the

majority suggest the exact word scoring, still others maintain that synonym scoring should be used in interpreting test scores. Harrison, who is in favour of the exact word scoring says the following: "It [the exact score marking] is faster, more reliable and usually more valid than synonym scoring" (Harrison, 1980: 103). On the other hand, according to Alderson (1979), for EFL testing, it is common to allow as correct either synonyms of the deleted word, or semantically acceptable replacements. While this is the case, Heaton (1990) seems to compromise on the two suggestions. He says: "Research work which has been carried out on cloze testing has shown that it makes scarcely any differences which ever method is used." (Heaton, 1990:91). To avoid the various problems that might arise in identifying whether a suggested answer is a synonym or not, the exact word scoring is used in this study. Once the question of scoring is settled one way or the other the next stage is the interpretation of the scores.

Generally three criteria are now used to explain the scores. These are, according to Heaton (1990), the independent level, the instructional level and frustration level. By the independent level it is to mean that the book can be used by students working on their own. The instructional level indicates that the book is suitable for use with a class and the teacher. The frustration level is a level which shows that a book is far two difficult to use even with the teacher. According to Harris (1980), the score

can be related to the three criteria bands: 35% - 40%, 40% - 45%, and 55% - 60%. Moreover Heaton (1990) relates the scores with the three criteria. He says that all scores above 53% are independent level, 44-53% instructional level and below 44% to be frustration level. There is still no general agreement to the three criteria.

According to Rye (1982), the criteria that are already accepted are compromises of the suggestions of Bormouth and Rankin et. al. who were the originators of these criteria. This being the case, the figure 40 percent and 60 percent are then approximate measures to conveniently combine the fruits of different research studies.

2.4 Reading in Content Area

2.4.1 Readability Problems in Content Area Text Books

The need to use some form of measurement in order to estimate the readability of a text has become important these days. This is actually done by using one of the various readability formulas according to convenience and the cloze tests. This is the net result of the publications of various texts on content areas by different publishers. Before students use a text, the readability of the text has to be measured by teachers, educators and administrators. This was and is the case in the West. In the less developed countries where there are few or no private publishers of texts for students, the sole responsibility of preparation and

production of content area texts mostly falls on the shoulders of government agencies.

Although care should have been taken to ease the reading difficulty of these texts, the problem is still there - the problem of reading and understanding of texts in the content areas. This problem is more serious in countries where English is either a foreign language or a second language. Rye et. al. (1984) say the following in this respect:

> The problem is particularly acute for pupils entering secondary year, when in many countries they are required to make the transition from English as a subject to English as medium of instruction. Thus the L_2 pupil in (for example) Nigeria or Hongkong simultaneously faces the twin problems of (a) more advanced conceptual difficulties in science, social studies, mathematics, etc., and (b) studying these subjects through the medium of English.
> (Rye et. al., 1984: 199)

If reading is taken as a tool of learning, the success of learners in the academic field to a large extent demands a good level of reading. As has been pointed out, the problem of reading in content areas is even worse for EFL students.

The problem of reading in content areas may in fact be caused by many factors. According to Deboer et. al., one reason for the problem some boys and girls encounter when reading in the content area is their failure to have acquired the skills essential to all reading. The writers go on to say the following: "If a pupil has failed to develop skills

in word recognition, in comprehension, in reading at appropriate rates, and in other essentials of reading of all types, he will of course, be unable to read effectively in the content areas." (Deboer et. al.; 1960: 395).

Rye et. al. (1984) explore the cause for this problem especially for students using English as a second language and at the same time the language of instruction. They have listed down five major reasons.

1. The spread of universal secondary education, resulting in lower average reading standard;
2. Inappropriate reading courses at primary level, in terms of the reading tasks required in the content areas at secondary level;
3. Unrealistic demands of the national syllabus, so that (for example) too much ground has to be covered in a certain year, and/or conceptually complex syllabus content has to be taught at too early a stage in the secondary school.
4. The difficulty of finding authors with a combination of,
   - classroom teaching experience at the relevant age level in the country concerned.
   - command of the content.
   - An awareness of the reading level in English of the target pupil.
   - sensitivity to principles of readable writing .

(Rye et. al., 1984:199-200)

Although the above possible reasons generally address the issue, the basic one is the problem of the readiness of the students. According to Vacca (1977), part of the concept of readiness states that individuals must know certain things before they can learn specific, additional materials, or that they must develop certain skills before they can develop others. This includes 1) setting purpose, 2) building background and experiences, and 3) teaching unfamiliar vocabulary. The same steps can be applied at all grade levels in all content areas.

Experience showed that because of the lack of readiness and basic skills of reading, teachers experience great frustration as they note the lack of sufficient progress in students reading performance as they move through grades. As students progress through grades, the need for development of suitable reading skills as a result of sophisticated material is great. This is, as Herbert (1978) puts it, because "The concept load is heavier, the ideas are more abstract, the information load is increasingly more concentrated." (Herbert, 1978:2)

2.4.2 Simplification of Content Area Texts

Generally there are various factors that influence the readability of a text. Rye (1980) explains these factors in detail. The major factors, however, are linguistic problems. This is to mean sentence length, word length and new words. Simplification has to do with any deliberate attempt to make

a text readable. According to Davies (1984) simplification is 'pedagogic'; meaning that it is an overt teaching situation when a teacher is teaching.

The fact that short sentences are used, common place words are introduced does not necessarily mean that the text is simplified. A simplified version, according to Widdowson as quoted in Davies (1984), is nothing but a simplification of the language code. What is more important is that the original propositions are kept alive and the alteration has to do only with the linguistic aspect.

One of the linguistic aspects has to do with sentence length. Usually sentence length correlates with passage difficulty. It may be that concept complexities cause both longer sentences and reading difficulty. So shortening the sentence without changing the concept load may not enhance comprehension. Nelson has this to say:

> Indeed there is a growing body of evidence and opinion (Pearson 1974-75, Dawkins 1975, Klare 1974-75) to suggest that arbitrary shortening of sentences may increase the difficulty of the reading task by rendering explicit relationship obscure.
>
> (Nelson, 1978: 621)

What goes with this is the question of using simple words. It might make sense, then, to change difficult or multisyllable words to meet readability criteria. What is most interesting is that the words that are most likely to cause a high readability score for a content area textbook are the technical words and the special meaning words of the

subject area. Nelson express his reservation about changing words to simplify texts. According to him:

> ... they [The Words] are nevertheless essential to subject matter comprehension. It would be foolish to suggest teachers rewrite materials to change or eliminate these words when they represent the very substance of the subject the teachers are trying to teach.
>
> (Nelson, 1978: 624)

The fact that technical words are part of the concept expressed in the content area doesn't mean that long words and new words should not be replaced by short words and common place words so long as the original proposition is maintained. In addition to the issue of word length and word frequency, the problem of sentence length should be addressed properly. Longer sentences may be required to explain concepts. So simplification of texts has to be handled accordingly.

2.4.3 Teachers in the content areas

In whatever way a content area textbook is simplified, it is not really designed for independent reading. Reading, as a teaching tool, is designed to present facts, concepts and values that are beyond the current knowledge and experience of readers. The textbooks use technical vocabularies of the subject to convey that information. Embedded within that text are abstraction, comprehension and contrasts, cause and effect relationships and sequence of each related to the subject. All these factors bring the content teacher in to the forefront.

Often the teaching of English in general and that of the reading skills in particular is left to the English teacher. But the question is: Is this effective? In this connection Rye (1982:88) says the following. "Reading is a tool for learning and therefore is encompassed by the professional responsibility of all teachers, regardless of their particular specialization in terms of subjects or age of children taught." This means that subject area teachers should also be involved in some way in the teaching of English. But the subject area teachers may not be willing to help their students develop the necessary reading skills. As Herbert (1978) notes:

> The subject-area teachers still see this as an imposition on their time or their curriculum, on their students. They do not see it as a direct answer to the needs evidenced by their students. It adds to a burden they feel is already more than they have the training and time to handle.
> (Herbert, 1978:4)

What Herbert said is about content area teachers in the native speaker environment. The situation is even more serious in the non-native speaker environment where there is a lack of training in the reading skill and willingness of the subject teachers to teach English.

On the other hand, Herbert says that the curriculum content in each of the subject areas should be the organizing element for the reading instruction. This is based on the principle that "content determines process." By this,

according to Herbert, implicit in the content of what we want to be read are the skills needed to read it successfully.

Since reading skills are learned only in reference to the material being read, the content of the curriculum serves as a vehicle for the reading skills to be learned. In other words, since content determines process, the skills taught are those essentials to understanding the material. Thus there is the need for subject area teachers to help students.

Provided there is the good attitude and training in reading instruction, content area teachers can play a tremendous role in easing the problem of reading in content areas. And if this is done, to quote Herbert (1978) it becomes as 'natural a part of the curriculum' as are the information sources themselves."

CHAPTER 3

METHODOLOGY AND PROCEDURE

3.1 Measurement of Readability Level

The importance of objectively measuring the readability level of a text has been dealt with in chapter 2, 2.1. Although the various formulas concentrate on the linguistic aspect of the readability difficulty, they are still good means to have a rough picture of the readability difficulty of the text they measure (Herbert, 1978; Harris 1980; Rye, 1982).

In order to assess the gap between seventh Grade students' level of comprehension in the content areas with the level expected of them, it is necessary beforehand to assess the readability level of the texts that are currently used in government Junior Secondary Schools.

At present, English is used as a medium of instruction at this level in three subjects, i.e., Science, Geography, and Mathematics. The Mathematics text, being full of figures, diagrams, calculations, etc., is unfit to be used for the purpose of assessing the readability difficulty level. The Science and the Geography textbooks were thus investigated for readability.

Although there are various readability formulas currently used all over the world, the researcher has used

the Fog Index for this study. The reason for selecting the Fog Index is simple; it addresses the main linguistic items that affect the readability of a text. Furthermore, it is easy to calculate and is one of the few formulas that are now used widely.

According to Grilliland (1973) and Wallace (1981) as quoted by Tsegaye (1982), the Fog Index of a book is calculated using the instruction below.

1. Select a sample passage of about 100 words long from every fifteen pages in the book. (On the other hand, (Harris, 1980; Rye, 1982, believe that it would be satisfactory to take one sample from near the beginning of a book, one from the middle, and one from near the end.)
2. Count the number of words in the selected passage.
3. Count the number of sentences in the selected passage.
4. Divide the number of words in the selected passage by the number of sentences to obtain the average sentence length of words in a sentence.
5. Count the number of difficult words; that is the number of words of three-or-more-syllables in the selected passage with the exception of verbs that have three syllables due to the addition of suffixes.
6. Add the number of average words in a sentence and the number of difficult words.
7. Multiply the sum by 0.4 to obtain the Fog Index of a passage.

8. Calculate the Fog Index of a book by using the formula.

$$\text{The Fog Index of a book} = \frac{\text{Sum of the index of the sampled passages}}{\text{Total number of sampled passages}}$$

Except for what has been suggested by (Harris, 1980; Rye, 1982) on the selection of only three samples, the Fog Index is used to calculate the readability difficulty level of Geography and Science texts. The Geography text has 56 pages and the Science text has 174 pages. The selection of the passages is shown in Table 1 below.

TABLE 1

PASSAGES SELECTED FOR READABILITY ASSESSMENT

Geography		Science	
Page	No. of Words	Page	No. of Words
6	100	44	100
23	100	77	100
43	100	118	100

3.2 Cloze Test Procedure

As mentioned in chapter 2, 2.3, cloze test is another tool frequently used to measure the readability of a text. According to (Rye, 1982; Weir, 1990; Heaton, 1991), the fact that words are deleted from a passage uniformly from a given passage provokes the students to 'close' the gap using all reading skills available to them. If a student fails to

identify the exact word, his level of comprehension is not upto the expectation. In a similar view if the level of comprehension is not up to the expectation, it is more likely that the text is difficult. The cloze test is objective in nature and at the same time demands various reading skills. Thus it is used to measure both the difficulty level of the text and the level of comprehension of the students at the same time.

In selecting samples for the cloze tests from Geography and Science text the following procedure was used.

1. Six passages were selected for the cloze tests: three from the Geography text and three from the Science text. These were selected from the beginning, the middle and the end part of the two texts. (see table 2 and 3 below) The selection was done by roughly dividing the number of pages of each text by three.

TABLE 2

SAMPLES SELECTED FOR THE CLOZE TESTS

Geography		
Page	No. of Words	No. of Deletions
1	275	50
27	270	50
35-38	275	50

TABLE 3

SAMPLES SELECTED FOR THE CLOZE TESTS

Science		
page	no. of Words	No. Of Deletion
44	265	48
70.71	275	50
149-151	260	50

2. After the selection of the six passages, fifty deletions were made of five words deletion rate except the first science text which has 48 deletions. This text, starting from the first few pages until page 43, is full of small statements in boxes, diagrams, instructions, etc. As a result, the only available long passage was found on page 44. Unfortunately that very passage fell a little short of the 50 deletions required. But according to Rye (1982) the number of deletions is still reasonable (see Appendix A-F)

3.3 Sample Selection

According to Dalen (1979), since most educational phenomena consist of a large number of units, an investigator can not always interview, test, or observe each unit under controlled conditions. Sampling tools solve this dilemma. They help a researcher select representative units from a population from the data gathered. From these units researchers can draw inferences about the entire population. They generalize that what is true of the sample will be true of the population.

A sample selected should reflect both the similarities and differences found in the total group. In order to assure the representative nature of a sample it must, as Warick and Liniger (1975), quoted in Medhane (1986)say, use a chance procedure which (Dalen, et. al. 1979; Cohn, et. al. 1980) call random selection.

Random sampling avoids the danger of personal bias which will consciously or unconsciously lead to selection of subjects who are most likely to produce data that will confirm or reject a hypothesis. Random sampling helps to avoid such a pitfall. Dalen has this to say:

> To avoid the introduction of such sampling bias, researchers employ some randomization techniques to ensure that each unit in the population has equal or known chance to be included.
>
> (Dalen, 1979:131)

Based on this theoretical background, subjects for the cloze tests were selected in the following manner:

1) As stated in chapter one, the school selected for the study was Entoto Amba Elementary and Junior Secondary School.
2) There were 200 students attending the morning shift in the seventh grade.
3) Using random sampling 180 students were selected to secure the reliability of the study. Each student took one of the three tests of Geography and Science.
4) The minimum number of students who took the test was 55 while the maximum was 65 (see table 4).

TABLE 4

NO. OF STUDENTS WHO TOOK EACH CLOZE TEST

Geography		Science	
Test	No. of Students	Test	No. of Students
1	60	1	57
2	55	2	59
3	65	3	61

5. Each test for Geography was given in three classes with the help of the classroom teachers.
6. The researcher went from class to class to explain to the students in Amharic.
7. A model was prepared from the English text of the seventh grade to show them how they are supposed to do the test.
8. The students were seriously reminded not to omit a blank space.
9. As the tests are not speed tests, the students were given sufficient time to complete as much of the test as they are able.
10. The exact word marking was used in all the tests.

The same procedure was used for Science tests. After the collection of the papers, each score was multiplied by two to convert it out of hundred whereby it would be simple to identify the comprehension level by working the percentage mean. Taking the Geography cloze test as an example, all the

right scores of the students are added to give the aggregate score of the students taking each test, which is out of the total score, i.e., 60x100=6000 for the 1st test, 55x100=5500 for the 2nd, and 65x100=6500 for the 3rd test. The mean of each test is calculated by dividing the aggregate score by the number of students who took the test. The comprehension level is then computed by working the grand mean. This is done by adding the three individual means and dividing the sum by three. The same procedure is used for Science cloze tests.

3.4 The Students' Questionnaire

According to (Dalen, et. al. 1979; Cohn,et. al. 1980; Selinger, 1989) a questionnaire is a print form which is used for data collection. In the words of Selinger, the questionnaire does not differ greatly from the interview in that both require subjects to provide information in response to stimulus provided by the researcher. They can also be used in combination, in which case findings from the questionnaire can be counter checked by findings from the interview, thereby enabling us to judge the validity of findings.

The questionnaire was prepared for the seventh grade students who are currently learning at Entoto Amba Elementary and Junior Secondary school. It was prepared in Amharic(see Appendix G for the English translation of the questionnaire) Besides the general background, the questionnaire had three

parts. The first part dealt with the layout of the two texts, i.e., Geography and Science. The second part included various types of problems the students might face when reading the two texts. Some strategies for reading were also included to see if at all the students use them consciously or unconsciously. The last part of the questionnaire was about the possible assistance the students may get from their teachers whenever they read the two texts.

3.4.1 Sampling and Procedure for the Questionnaire Study

There were 200 students in the seventh grade. Out of this number , 80 were randomly selected. But only 75 of them showed up for the questionnaire.

The following procedure was used:

1. The use of the likert scale was explained to the students with the help of the model from the questionnaire. The blackboard was used in explaining the procedure.
2. A thorough explanation was given about each part.
3. No time limit was given.

3.4.2 Data Coding and Analysis

After the questionnaires were collected, for part 1,2, and 3 all the five alternatives, "strongly agree", "agree", "No opinion", "Disagree", "strongly disagree", were coded in the following manner. "strongly agree" (5), "agree" (4), "No opinion" (3), "Disagree" (2), "strongly disagree"(1)

This procedure was used for each statement throughout. The analysis of the data was as follows: all the questions were computed for the mean on the basis of the following formula.

$$M = \frac{\sum Xi\,fi}{\sum fi}$$

where M = mean

Xi = score

fi = frequency

To illustrate as to how the mean was computed, supposing the respondents' reaction to the statement, "I like the cover design of the Geography text" is

Value	Frequency (f)
Strongly agree (5)	28
Agree (4)	20
No opinion (3)	10
Disagree (2)	11
Strongly disagree (1)	6

The mean (M) of the answers to this statement is

$$= \frac{5(28) + 4(20) + 3(10) + 2(11) + 1(6)}{75}$$

$$= \frac{140 + 80 + 30 + 22 + 6}{75}$$

$$= \frac{278}{75}$$

$$= 3.70$$

3.5 The Interview

The other instrument for data collection that the researcher used in this study was the interview. As has been stated by (Dalen, et. al. 1979; Cohn, et. al. 1980; and Selinger, 1989), an interview is a vital instrument to probe into the real cause and effect and the relation of factors and happenings. Although it is thought to be similar to a questionnaire, it permits the researcher to explore many things that may not have been identified in the questionnaire responses.

The importance of interview in any research undertaking is summarized by Tuckman (1972), as quoted in Cohn and Manion (1980); it can help "By providing access to what a person knows (knowledge or information), what a person likes or dislikes (value and preference), and what a person thinks (attitude and belief) ...." (Cohn and Manion, 1980: 309).

In this research, following the questionnaire response, interviews were conducted with a randomly selected sample of the students who completed the questionnaire.

There were eight questions which were designed in accordance to the general response of the students in the questionnaire. They are items which attempt to get clarification or throw light on the actual problem the students face, stated or unstated, while reading their two texts.

The items (see Appendix H) are semi-structured. These questions are again reinforced by follow-up questions depending on the responses of the interviewees. In fact this gave them a good opportunity to express their views. This is in line with what Dalen (1979) suggests in using interview to get information from children.

The sample size was twenty. Compared with 75 subjects that responded for the questionnaire, this figure is acceptable because it is more than 20% of the subjects. Almost all the interviewees were between 13-14 years of age and both sexes were fairly represented. Eleven of them were males while the remaining nine were females.

The interview was conducted in Amharic. It took four afternoons. Because we couldn't find an empty classroom, the interview was conducted in a small shed in the centre of the school compound overlooking the football pitch. Each afternoon five students were interviewed. A reasonably friendly relationship was created between the researcher and the subjects. As the English translation can be seen in appendix H, the questions were simple and short. Every attempt was made to identify the main points in the issue under consideration and all relevant answers were jotted down right on the spot.

As this interview was a follow-up of the questionnaire responses, all attempts were made to describe the responses

of the interviewees in accordance with what Selinger (1989) says, by looking for pattern and categories within the data.

3.6 The Readability Checklist

3.6.1 Introduction

As has been stated in chapter 2, section 2, all readability formulas rely on the linguistic factors that can be quantified. Writers such as (Maxwell, 1978; Herbert, 1978; Harris, 1980; Rye, 1980) all stress the weak points of the readability formulas despite their objectivity. They generally suggest constellations of factors that are important for influencing the readability of a text. According to Westphal, these formulas pay little or no attention to the understandability and learnability of texts. By understandability of a text, he means the importance of concept development in relation to what is familiar to the student. Learnability, according to Westphal, includes the issue of organization, reinforcement and motivation. These are variables which can not be quantified. And yet, they always influence the comprehensibility of a text.

In this study, so far the attempt has been to determine the readability of the two texts under consideration and follow up cloze tests were administered. In addition to these, questionnaires were prepared and interviews were also conducted. What is needed at this point was the assessment of non-textual factors. These factors were identified by Westphal (1980) and put in the form of a checklist. A

readability checklist was also prepared for the study with minor modifications for teachers in the content area subjects, i.e., Geography and Science (see Appendix I).

The readability checklist was distributed to 25 teachers teaching in 15 Elementary and Junior Secondary Schools in Addis Ababa. They were all teachers of Geography or Science in the seventh grade. The main purpose of this checklist was to gather their opinion about some factors that are crucial to the readability of a text. This is done from the point of view of seventh grade Geography and Science texts.

Out of the 25 teachers who received the checklist, 19 Geography teachers and 20 Science teachers responded. The responses were described and analyzed with the help of a computer.

In order to have a good picture of the opinion of teachers towards the two texts, the checklist was divided into two main parts, i.e.; understandability and learnability. Under the first i.e., understandability there were 14 items. These items were again divided into groups according to the issue they inquire. From (1-5), the first five items were about the relationship of students conceptual backgrounds and textual information. From (6-8), the items deal with the issue of concept development. The next four items i.e., (9-12) cover a variety of old and new factors which have been linked to comprehension in empirical studies.

The last two of the first part (13-14) deal with finding sources to match a variety of reading levels and checking the readability level.

The second part of the readability checklist is learnability. Though it may be difficult to separate understandability and learnability factors, it is clear that careful attention should be given to how well the information in a textbook is remembered as well as how well it is understood. One factor which has been repeatedly linked with recall is organization, so the next five questions (15-20) of the learnability section deal with this.

Another major factor affecting retention is reinforcement. Nine items (21-29) in the learnability section deal with this. The results of psychological researches indicate that learning requires practice, and that both immediate and intermittent reinforcement of ideas is needed.

The last six items (30-35) have to do with motivation. It is when there are motivational factors in The text that reading can take place. So items which are thought to be basic in motivating the students to read and comprehend are also included in this section.

3.6.2 Data Coding and Analysis

The items in the readability checklist which are listed alphabetically are entered as variables v1, v2, v3,... in a computer. The description and analysis identifies the items under understandability from (1-14) (v1-v14); learnability is again divided into organization from (15-20). This is entered in the computer as (v15-v20). Reinforcement (21-29) is entered as (v21-v29) and the last part, motivation, is entered as (30-35) (v30-v35).

After the responses to the items on the checklists were collected all the six alternatives, "excellent", "good", "adequate", "poor", "unacceptable", "not applicable" were coded as follows: "excellent" (5), "good" (4), "adequate" (3), "poor" (2), "unacceptable" (1), "not applicable" (NA).

The procedure followed throughout the analysis of the data is as follows:

The mean (X) and the standard deviation(S) of each item are computed. To illustrate, suppose for question 1(v1), which says "Are the assumptions about the students' vocabulary knowledge appropriate?", the respondents' reaction was:

Value Label	Value	Fr.	%	Cum. %
Unacceptable	1	1	5.3	5.3
Poor	2	4	21.1	26.3
Adequate	3	5	26.3	52.6
Good	4	8	42	94.7
Excellent	5	1	1	100.0

Mean of this statement is

$$= \frac{(5x1) + (4x8) + (3x5) + (2x4) + (1x1)}{1 + 8 + 5 + 4 + 1}$$

$$= \frac{5 + 32 + 15 + 8 + 1}{19}$$

$$= \frac{61}{19}$$

$$= 3.21$$

The standard deviation of the reaction to the same statement is:

$$S.D = \sqrt{\frac{\sum fi\,(x-\bar{x})^2}{\sum fi}}$$

$$= \sqrt{\frac{1(1.79) + 8(0.79) + 5(-1.21) + 4(-2.21)}{19}}$$

$$= \sqrt{\frac{1(3.2041)+8(0.6241)+5(0.0441)+4(1.4641)+1(4.8841)}{19}}$$

$$= \sqrt{\frac{3.2041 + 4.9928 + 0.2205 + 5.8564 + 4.8841}{19}}$$

$$= \sqrt{\frac{19.1579}{19}}$$

$$= \sqrt{1.0083}$$

$$= 1.03$$

The analysis of the same statement can be put in the following way:

Number of valid observation (listwise) = 19

Variable	Mean	Std. Dev.	Min	Max	N
V1	3.21	1.03	1	5	19

3.7 Text Simplification

As stated in chapter one, one of the purposes of this study was to observe the effect of any attempt to simplify a unit in a text. Generally speaking simplification has traditionally to do with the linguistic aspect. As Rye (1982) writes, when we speak about readability difficulty, what comes in to our mind is the problem of long sentences, long words and frequency of words. The first attempt to simplify a text was to alleviate the problems that arise out of the above factors.

As has been stated in chapter 2.4.1, the fact that sentences are long doesn't necessarily mean that texts are always difficult. In the same way the presence of long words is sometimes unavoidable when new concepts are introduced.

What goes with this is that, as has been observed in Westphal's (1980) readability checklist, other than the linguistic aspect, the textual factors do play their own part in affecting the readability of a text. Therefore, text simplification should accommodate both the linguistic and textual factors.

Of the two textbooks which are under consideration an attempt was made to simplify a unit from the Geography text. This means that a unit was used as a sample (see Appendix J). The purpose of this was to observe the effect of the simplification. It was due to time constraint that only a unit from Geography was focused on.

The following procedures were used to simplify the text, partially consulting krause's (1976) "Text evaluation"

1. The researcher had to read the unit many times so that he could be familiar with the content thoroughly.
2. An introduction was given to the unit.
3. Leading questions were prepared for a pre-reading stage.
4. A few definitions of key words were given in Amharic.
5. Other important words were underlined.
6. Although the sentences were short, they were all concept loaded, so there was a need to use more sentences to explain concepts.
7. Attempts were made to familiarize learners with new concepts by relating them to the concepts or knowledge they bring to the class.
8. To keep the students active, questions were posed in many instances. The answers of most of the questions were given. But some questions were left unanswered to trigger a sort of inquiry in the minds of the students.
9. In the "questions for review"part
   A. Matching
   B. Multiple choice

C. True/False

D. Direct questions were prepared.

A copy of the note was given to the Geography panel of the Ministry of Education Curriculum Division for content validity. Their comments and suggestions were well taken and the note was revised accordingly. Following this the readability difficulty level of the unit was assessed using the same Fog Index. Furthermore one cloze test on the new unit was prepared and administered to the same students who took one of the cloze tests(see appendix K for the cloze test). This is done to observe if there is a significant difference between the original text and the simplified unit.

3.8 Content Area Teachers' Attitude Towards the Teaching of Reading

Whatsoever measures are taken to ease the readability difficulty of content textbooks, it doesn't mean that the students could work with the texts without the teachers' help.

Reading in content areas is just more than reading for decoding information. According to Herbert (1979), reading in content areas is primarily a means through which students encounter and deal with new knowledge and new ideas. If they are not prepared for the reading and are not guided through it, the students will be frustrated by this newness.

Students should not be expected to read such new materials independently.

It is this very fact that makes the subject teachers indispensable in helping their students to overcome the problem of reading. This, at the same time, presupposes a positive attitude of content teachers towards the teaching of content and reading. To assess the attitude of content area teachers, Vaughan (1977) provided a scale to measure the attitude of content area teachers towards the teaching of English in general and that of reading in particular.

In this study the above scale was used with slight modifications to measure the attitude of seventh grade Geography and Science teachers (see Appendix L).

The scale was prepared and distributed to forty teachers teaching in fifteen schools. Thirty four teachers i.e., 85%, responded.

There were twelve items which were coded as variables one, two, three... (v1,v2,v3, ..., v12) and entered in a computer for description and analysis of the responses. All the five alternatives, "strongly agree", "agree", "neutral", "disagree", "strongly disagree", were coded as follows: "strongly agree" (5), "agree" (4), "neutral" (3), "disagree" (2), "strongly disagree" (1).

The same procedures for computing the mean (X) and the standard deviation (s) used in 3.5.2 were used here too.

To illustrate, suppose the reaction of the respondents to statement v1 which says "A content area teacher is obliged to help students improve their reading ability" was,

Value Label	Value	Fr.	%	Cum. %
Disagree	2	2	5.9	5.9
Neutral	3	8	23.5	29.4
Agree	4	13	38.2	67.6
Strongly agree	5	11	32.4	100.00
Total		34	100	

The analysis of the above statement was as follow:

Variable	Mean	Std. Dev.	Min	Max	N
v1	3.97	0.90	2	5	34

In order to assess the attitude of individual teachers, the scoring of and individual's response must account for the fact that seven of the items are positive while five are negative in nature. The negative items are scored in reverse from the positive items. For example, the following table is provided to assist in the scoring process.

TABLE 5

A SCALE TO MEASURE THE ATTITUDE OF TEACHERS

TOWARDS TEACHING READING IN CONTENT CLASSES

Response	Response Value 5,4,3,2,1
Positive items 1,2,4,6,8,10,12	5,4,3,2,1
Negative items 3,5,7,9,11	1,2,3,4,5

For the purpose of this study, findings of the scores are interpreted according to the following criteria.

Range	Attitude
91 - or high	high
81 - 90	above average
71 - 80	average
61 - 70	below average
60 - or below	law

CHAPTER 4

ANALYSIS AND DISCUSSION OF FINDINGS

4.1 The Readability of Geography and Science Texts of the Seventh Grade

4.1.1 Geography

Following the procedure described in chapter 3.1, three passages were taken from the beginning, the middle and end parts of the Geography textbook. The first was taken from page 6, the second from page 23 and the third from page 43.

The difficulty level of the first passage was calculated to be 7.41, the second passage 7.64 and the last passage 7.00. The three figures were added and then divided by three to give us the average value indicating the difficulty level of the Geography textbook, which is 7.35 (see Table 6 below).

TABLE 6

READABILITY DIFFICULTY LEVEL OF GEOGRAPHY AND SCIENCE TEXTBOOKS

Geography			Science		
page	No. of words	D.L*	page	No. of Words	D.L
6	100	7.41	41	100	8.92
23	100	7.64	77	100	8.88
43	100	7.00	118	100	9.72
		AV=7.35			AV=9.17

*D.L. - Difficulty Level

4.1.2 Science

As shown in Table 6, the difficulty level of the first passage from the Science textbook was calculated to be 8.92, the second 8.88, and the third 9.72. The three figures were added and divided by three to give the average, which is 9.17. This means that the readability difficulty level of the seventh grade Science textbooks is 9.17.

Previously, because the various readability formulas were originally designed for native speakers, the difficulty levels were interpreted in terms of age. But soon a problem arose. Two boys of the same age may have different needs and also varied reading interests. So age is no longer an inclusive norm to entertain the issue for all time and every where. This view is supported by Harris (1980). Davis (1974) believes that age can be used for native speakers whereas language exposure can be taken for non native speakers. Thus grade level is used to interpret the readability difficulty of a text for non native readers. In other words, a difficulty level computed to be 7 means that the text is appropriate to grade 7, a difficulty level of 8 is appropriate for grade 8, etc.

What is important is that whether we use age or grade level, the numerical finding is not an exact measurement and is therefore a rough estimation. This being the case, the true difficulty level can be somewhere within a year above or

below the estimated level,according to Harris (1980). According to him the true difficulty level may be somewhere within twenty months (1 year and 8 months) above or below that specific point. Thus the grade 7 Geography text, with a readability level of 7.35, is appropriate to the grade whereas the Science textbook with the grade level of 9.17 is slightly above the seventh grade.

4.2 The Cloze Tests

4.2.1 Findings From the Geography Cloze Tests

As described in chapter 3.3, a total of 60 students took the first test (see Appendices A, B and C for the cloze test and Appendix M for the answer keys). The aggregate score was 915 (see Appendix N for the raw score) which was computed out of 6000, which is the total maximum score the 60 students could have got. The mean score was computed in percentage by dividing 915 by 60, which was 15.25% (see table 7).

TABLE 7

CLOZE TEST FINDINGS (GEOGRAPHY)

Test	No. of Students	Total Score			Mean
		1st Test 6000	2nd Test 5500	3rd Test 6500	(%)
1	60	915			15.25
2	55		875		15.90
3	65			1174	18.06
GRAND MEAN IN (%) = 16.40					

In the same way the mean of the second and the third cloze tests were calculated to be 15.90 and 18.06. Following the procedure in chapter 3.3, the grand mean was calculated by adding the three individual means and dividing the sum by 3. Hence, it was computed to be 16.40%.

According to the procedure discussed in chapter 3.2, any cloze test results below 40% are interpreted to be at a frustration level. This is to mean that the comprehension level of 16.40% is a level in which the students can not read and understand the Geography textbook even with the help of a teacher.

4.2.2 Findings From the Science Cloze Tests

Following the procedure in chapter 3.2, three passages were taken from the beginning, the middle and end parts of the Science textbook (see Appendices D, E, F for the cloze tests and Appendix O for the answer keys). 57 students took the first cloze test. The aggregate score was 688 (see Appendix P for the raw score). As can be seen in Table 8, the mean was calculated to be 12.07%. The means for the second and the third tests were calculated to be 14.7% and 15.0% respectively (see Table 8).

TABLE 8

CLOZE TEST FINDINGS (SCIENCE)

Test	No. of Students	Total Score			Mean
		1st Test	2nd Test	3rd Test	(%)
1	57	688			12.07
2	59		868		14.70
3	61			916	15.00
GRAND MEAN IN (%) = 13.93					

The grand mean was 13.93. According to the finding, the students could do only 13.93% of the cloze tests correctly. This shows that the students comprehension level is at a frustration level. This, in other words, means that the students can not read and understand the seventh grade Science textbook even with the assistance of a teacher.

4.3 Students' Questionnaire

The purpose of this questionnaire was to gather data about the background and reading habit of the students, to know the opinion of the students about the layout of the two texts, i.e., Geography and Science, to identify the various problems the students face when trying to read the two texts and about the possible assistance the students get from their

teachers in their attempt to read and understand the two texts.

4.3.1 General Background

In this part of the questionnaire, there were 10 questions related to students' age, sex, school, their reading habit in Amharic and the supply and distribution of the two texts (see Appendix G). 83% of the students were from the same school. 71% of them were between 11-13 years of age, while 22.9% were between 14-16 years of age and only one respondent was above 16. 66.6% were male whereas 33.3% were females.

The students were asked if they usually read newspapers, magazines, novels, etc. in Amharic. 90.4% of them said that they do read. 10% of the 90% who claimed to read, said that they read at least one newspaper daily while 80% of them said they read 2 or 3 Amharic newspapers daily. In statement No.6, students were asked to try to define the word 'library' in Amharic in general. Although we can have various definitions for a library, there is a general agreement, according to Webester's New English Century Dictionary of the English Language (second edition) that it is a room or building where a collection of books, etc. is kept for reading or reference. Using this definition as a reference, 40.4% attempted to define the word in the above way. On the contrary 59% have no clear idea about what a library is.

The fact that a student knows what a "library" is doesn't necessarily lead us to believe that he/she has a good habit or background of reading. If a student has no idea about the word, this doesn't mean that he/she has no habit of reading. But the response to this question can give additional information such as on reading, reading places and above all the reading habit.

Starting from item 7 to item 10, attempts were made to know about the supply and distribution of the two texts. This was done to counter check the response of the students in the subsequent questions about the two texts . More than 35% of the respondents said that they don't have the Geography text while all of them stated that they have the Science textbook.

4.3.2 Students' Responses About the Layout of the Two Texts

There are six questions in this part (1.1-1.6). The questions try to examine students' attitude towards the layout of the two textbooks. All the statements in the questionnaire starting from this part up to the end were to be answered by ticking in one of the alternatives: "strongly agree", "agree", "No opinion", "disagree", "strongly disagree". The percentage of the respondents' reaction to every statement and the mean was calculated following the guideline in chapter 3.4.3 (see Appendix Q for the analysis sheet of the whole questionnaire responses).

According to the analysis in Appendix Q(1), 63.9% said that they like the cover design of the Geography text. 78.6% said that they like the cover design of the Science textbook. 74.6% strongly agreed that the words in the Geography textbook are easily legible. In the same way 62.6% agreed that the words in their science textbook are easily legible. Moreover, 78% strongly agreed that drawings, pictures, maps, etc. in the Geography textbook are helpful to understand what they read. On the other hand, 49.3% agreed that their science textbook's drawings, pictures, maps, etc. help them to understand what they read.

The factors such as drawings, maps, pictures are non- linguistic in nature. But the influence they exert on the readability of a text is undeniable. In fact layouts can not make a poor reader good overnight. But if the students have an overall positive attitude about the layout of a text, they will certainly be motivated to read it. From the above responses of the students, it is obvious that they like the layout of the two textbooks.

4.3.3 Students' Responses Towards Reading and Understanding Subject Area Textbooks

Twenty questions were included in this part. They are grouped according to the issue they entertain. Each issue is examined in light of the two textbooks separately. The questions were about the reading and understanding of the two

texts and if at all the students use some common reading strategies.

As can be seen in Appendix Q(2), 73.2% agreed that they always read the Geography textbook. But 45.33% said that they usually read their Science textbook. When asked whether they understand their Geography textbook, 44% agreed, whereas 40% said that they don't understand. 47.33% said that they do understand their Science textbook and 38.66% said they don't. 53.33% disagreed with the statement which said that they only read their Geography textbook when they are given a homework. In the same way 56% of the respondents disagreed that they only read their Science textbook when they are given homework. When asked whether they don't read the Geography textbook because they are weak in English, 58.6% disagreed with the statement. When the same question was put about the Science textbook, 58.26% disagreed with the statement.

65.3% of the respondents said that they have no problems of new words when reading the Geography textbook. 63.9% reacted in the same way about words when reading their Science textbook. 77.37% said that they continue to read their Geography text even if they meet new words frequently. In the same way, 62.66% said that they don't stop reading their Science textbook even if they frequently meet new words.

66.66% agreed that they always guess meanings of words while reading the Geography textbook. 68.60% agree with the statement in regard to the Science textbook. 66.6% said that they usually try to understand the meaning of words from the context when reading their Geography textbook. In the same way, 82.66% also said that they do try to understand meanings of words from the context when reading their Science textbook. When asked whether they use the dictionary to find meanings of words when reading their Geography and Science textbooks, 78.66% and 71.99% respectively agreed that they do so.

From the response of the respondents, it seems that the students read the two texts on a regular basis and they do understand what they read. Moreover, 50% of the respondents indirectly repeated the same claim that they always read their textbooks. What is most surprising in the response was that they have a habit of reading despite the difficulties of new words here and there in their textbooks. The interesting thing is that the students seem to have no idea about what reading is.

What goes with this is that there were few items in this part about the few reading strategies they may use while reading the two texts. Even though the questions in the questionnaire seem to be leading ones, they have helped to crosscheck their responses in line with the cloze test findings in 4.2.1 and 4.2.2. More than 60% of the

respondents said that they can guess the meaning of words, and also can understand meanings from the context. This would have to a certain extent been reflected in the cloze text findings where some of the words could have been guessed or the context exploited for meaning. But this was not the case. One thing is obvious; what the students said in this part and their cloze test performance are at the opposite poles. Thus the responses cast doubts about their honesty.

4.3.4 Assistance Students Get From Content Area Teachers: Geography and Science Teachers.

There were eighteen questions in this part. The first eight questions were about the independent reading of the students and the last ten were about the different types of assistance the students get from both their Geography and Science teachers.

As can be seen in Appendix Q (3), 51.9% agreed that they read their Geography textbook before the teacher's explanation. On the other hand, 48% agreed that they read the Science textbook before the teacher's explanation. 51.3% and 52.1% respectively said that they usually read their Geography and Science textbooks after the teachers explanation. 60% said that they don't understand what they read before their Geography teacher's explanation. In the same way 66.6% agreed with this statement about their Science textbook. But 67.9% said that they do understand their Geography textbook when reading it after the teacher's

explanation. In the same way, 74.6% claim to understand their Science textbook after the teachers explanation.

50% said that both their Geography and Science teachers usually give them notes. 70% said that they also read their textbooks besides the notes given to them. 80% agreed that they use their notes in order to do their homework on Geography. In the same way, 77.3% said that they do use their Science notes to do their homework.

When asked whether their Geography teacher teaches them from a note, 38.6% agreed with the statement. But 32% have no idea about it. On the other hand, 60% agreed with the above statement with respect to their Science teacher. 95% said that their Geography teacher usually tells them meanings of words and sentences in Amharic. But only 37.3% said so about their Science teacher.

In the first two items the responses of the students were positive. But when they were asked if they do understand what they read before the teachers' explanation, 50% of them admitted to depend on their teachers' explanation to understand what they read. As stated in chapter 2.4.3, the teacher is a central figure in helping his students in reading their subject texts. Yet, there should always be a room for helping the students to gradually depend on their independent reading.

The fact that the teachers give them notes is a positive step in helping the students to read and understand when they read their textbooks. This being the case 60% of the students said to have read their textbooks besides the notes to do their homework. But they have already said that they use their notes to do their homework. So, the response about their reading of the two texts in addition to the notes given is doubtful.

As stated in Appendix Q (3), the Geography teacher usually tells them meanings of words and sentences in Amharic. This is important and should be encouraged as long as it is handled with care. But, if the translation is frequently done, the class may be a content class with a native language.

4.4 Interview with Students

This interview was intended to get clarification about the responses given by the students in the questionnaire on major points related to reading and understanding of the Geography and Science textbooks.

The analysis of the interview was done according to Selinger (1989), by looking for patterns and categories within the answer. The response of the students and the discussion is presented below.

Almost all of the students interviewed had a positive attitude towards the layout of the Geography textbook. This was similar to the questionnaire response about the layout of the same text in chapter 4.3.2. On the other hand, the majority of the interviewees said that the pictures, diagramatic aids, etc. of the Science textbook are not clear and above all they are not interesting because they are not coloured. This was in contrast with what they said in the questionnaire Q(1) about the layout of the Science text. When asked which of the two books they prefer, the majority said that even though they don't thoroughly read and understand the text, they like the Geography textbook.

The opinion of the interviewees in regard to diagramatic aids was that such aids in the Geography textbook help them to understand the lesson. On the contrary, the expressed opinion of the interviewees about the Science textbook was that the diagramatic aids did not help them much. The pictures were not sharp, the print was small and dim.

When asked whether they regularly read their Geography and Science textbooks, the majority said that they do read their Geography textbooks. But six, (30%) of the interviewed, didn't have the Geography textbook. They said that they borrow the textbook from their friends. According to most of them they read the Science text occasionally. When asked in a follow-up question whether they understand what they read, most admitted that they don't understand what

they read. This is contradictory to what the students responded in the questionnaire in chapter 4.3.3 where they said to have understood what they read.

The students, when asked why they don't understand, the expressed reason was because of difficult words and complex sentences. This appears to be related to the findings of the cloze tests in chapter 4.2.

When asked as to what they do when they get new words in their reading, most of the interviewees said that they would ask either the teacher or family or use a bilingual dictionary. When asked what they would do in the absence of the above alternatives, they said that they would try to guess the meaning of words or ignore them and go on reading. During the interview, the interviewer had asked all of them how they guessed the meaning of words or ignored them, by using the two texts under consideration. Almost all of them couldn't read the sentences let alone use the above reading strategies. They said that they would ask anyone for the meaning. This shows that the students lack readiness.

Vacca, quoting Ausbal (1963), said the following in regard to readiness: "As a general principle, readiness refers to the ability of an individual at a given age to cope adequately with the demands of cognitive task (Vacca, 1977: 387). This means that students at this level lack the skills required, i.e., vocabulary, comprehension and reasoning to

attack the text they are using for meaning. Moreover, readiness can mean that students must know certain things before they can learn specific additional materials, or that they must develop certain skills before they can develop others.

Students were asked if the English they are learning, especially the reading part, helps them in any way to read and understand their Geography and Science texts. The majority of them said it doesn't help them. The main reason given was that the English, especially the reading part, is by no means related with what they need to read in Geography and Science textbooks. Only a few said that it helps them. But they don't have a clear idea as to how it helps them. What we can assume is that there is a clear problem of integration between the English lesson and the content area subject teaching.

What is obvious from the above problem is that the English that is taught at any level should be helpful in easing the problem of reading in English in the content area. But the condition is not like that. Rye et. al. (1984) summarize this problem in the following way:

> The L_2 secondary level English syllabus is usually very general in nature, i.e., it gives scant regard to the purpose for which English is taught. Consequently, vocabulary lists in the English syllabus contain few words that are part and parcel of the language of content area subjects. (P.204)

This appears to be the problem in our Junior classes. Although there is a general consensus about the purpose, there is little coordination between the English on one hand and the content area subjects taught in English on the other. The response of the interviewees about the lack of integration probably shows the seriousness of the issue. By integration, the relation should not amount to what Mohan (1979) calls a "mere Coexistence" with the danger that neither content nor language ends up being taught well.

Asked whether they get support from their content teachers in order to read and understand the two texts, most of the interviewees reported that their teachers do help them in reading the textbooks. In follow up questions, asked as to how their teachers help them, the answers of most of them were similar in nature. They help them by telling them meanings of words and sentences in Amharic. But this has nothing to do with the actual reading demanded in the content area.

Almost all of them said that they use their class notes which they copy from the blackboard to do their homework and study for examinations. Very few of them said that they use their textbook and the notes. When asked if they could understand the notes, they innocently admitted to have a problem. In the first place it is questionable how the teachers prepare their notes. In addition, there is a good ground to suspect if the students could correctly copy the

notes from the blackboard. Moreover, even if they could copy from the board, without a proper study guide it would be unimaginable to expect the students to do their homework or prepare themselves for examinations.

4.5 Findings from the Readability Check Lists

The purpose of this checklist was to assess the readability of the two textbooks in terms of the textual factors. The subjects selected for doing the assessment were the content area teachers who are currently teaching Geography and Science in various Junior Secondary schools in Addis Ababa.

The readability checklist was divided in to two main parts, namely understandability and learnability. Under Learnability, there were three factors which were thought to be very important. They were, organization, Reinforcement, and motivation.

The responses of the teachers were analyzed in groups according to the issue they entertain. The analysis was made following the guideline in chapter 3.6.2. The value given for the responses was: "excellent" (5), "good" (4), "adequate"(3), "poor" (2), "unacceptable" (1).

4.5.1 Geography

The analysis of the response of the Geography teachers is presented in Appendix R.

4.5.1.1 Understandability

In the first group which was about understandability, there were 14 items and the responses were analyzed in groups [see Appendix R(1)]. In order to obtain the general picture about the opinion of the teachers about the group of items, first the grand mean has to be worked out. This is done by following the guideline set in chapter 3.6 and dividing the sum by the number of items in groups. The new figure, i.e., the grand mean, falls in one of the alternative sets above.

As can be seen in Appendix R(1), the first five items, i.e. (item 1 up to item 5) under understandability, the issue entertained was about the relationship between students conceptual backgrounds and the textual information. The opinion of the teachers is that the textbook is adequate. This is to mean that the Geography textbook bridges what the students know through experience with what is presented as new knowledge. As can be seen in Appendix R(1), the opinion of the teachers about the students' vocabulary knowledge is doubtful. 42.1% said that the text is good. This is contrary to what the students said in the interview in the previous part in the same chapter. 21% of the teachers said that the issue of student's vocabulary knowledge is poor. And yet, when the average opinion of the teachers about the first five items is worked out, the textbook is adequate.

In the second group of items under understandability (item 6 to item 8) were about the importance of concept

development in terms of whether they are comprehensible to the students and about whether there are sufficient and concrete examples in the textbook. More than 50% of the teachers believe that the textbook is presented in a way students can understand the concepts. But 42.1% of the teachers said that the text lacks concrete examples to elaborate abstract ideas. This is the main weakness of the text. Although the sentences are short they are concept loaded without sufficient examples and explanations.

The group of items under understandability (from item 9 to item 12) had to do with linking of old and new factors especially in empirical studies. In addition, the importance of presenting new ideas with clear statements is also included in this group. 70% of the teachers said that the textbook is adequate, meaning average, seen in the light of the above factors. In other words, there is a need for improvement in this respect.

The next group of items were item 13 and 14. In this group, focus was made on assessing if the seventh grade Geography text teacher's guide provides alternative reading for the very poor or advanced students. The teachers were also asked to rate the difficulty level of the Geography text. 42.1% said that the teacher's guide provides alternative reading materials. It is difficult to accept this in its practicality. In a situation where the students are not provided with the actual textbook, it is difficult to

accept the above arrangement. In another instance, 42% of the seventh grade Geography teachers believe that the seventh grade Geography text's readability level is appropriate to the grade. This goes in line with the readability level computed in section 1 of this chapter.

4.5.1.2 Learnability/Organization

There were five questions in this section. They were all factors that are important for the readability of a text. As can be seen in Appendix R(2)a, 47.4% of the teachers rate the text to be good in providing instruction for each chapter and another 36.8% rate the text to be adequate. 47.4% said that the chapters have a clear and simple organizational pattern relating them to each other while 31.6% pointed out that it was adequate. Concerning the organizational structure of the Geography textbook, 52.6% considered the text to be good and 36.8% rate the text to be adequate. 26.3% said that the Geography textbook is excellent in terms of glossary, index and table of contents. Another 31.6% rate the text to be good in this respect.

The general response of the teachers about the organizational aspect of the seventh grade Geography text is that it is good. According to the response in all the five items the issue of organization is well treated in the Geography text.

4.5.1.3 Learnability/Reinforcement

There were nine questions in this section. They were questions designed to asses the seventh grade Geography text (see Appendix R(2) b.)

57.9% said that the Geography text is adequate and another 32.6% said it to be good in providing opportunities for students to practice using new ideas or concepts. 42% said that the text is poor in providing summaries at the end of each unit whereas 21% said that it is adequate. 42.1% rate the Geography text to be good in providing teaching aids. 31.6% said that the book is excellent in this regard.

47.4% rate the text as poor, whereas 26.3% said that the text is adequate in suggesting supplementary activities. On the other hand, 42.6% reported that the text is good from the point of view of the preparation of activities according to the abilities of the students in the class. 63.2% said that direct questions are provided for the students' self review. When asked if questions encourage the students to draw inferences or conclusions, 47.4% said that this is handled adequately. 31.6% said that the textbook is good in this respect.

42.1% said that the discussion questions encourage creative thinking adequately and another 42.1%said that the textbook is good in this respect. 47.4% said that the

questions are clearly worded and 42.1% claimed the text to be good in setting clearly worded questions.

Generally, learning entails practice and practice has also to be done in a continuous basis. Moreover learning is interwoven with reinforcement. In order to do this, students should be given opportunities to improve concept attainment. On the other hand, as diagramatic aids are important to reinforce what is read, the presence of supplementary activities is also equally important. But in the Geography textbook the issue is poorly rated. The presence of such types of activities give the students a chance to weigh, evaluate and appreciate what they read.

4.5.1.4 Learnability/Motivation

There were five questions in this section. The factors brought under discussion are not the only ones to explain the issue of motivation. But they are sufficient to throw light on the importance of students' reading in subject textbooks (see Appendix R(2)c for the analysis).

When asked whether the teacher's guide provides introductory activities, 89.5% said that the Geography text is good in this regard. 78.9% said that titles and subheadings are concrete, meaningful and interesting. 52.6% reported that the writing style is appealing or attractive to the students and they rate it to be good. 47.4% rate the

text to be adequate in terms of motivating students to pursue the topic further.

47.9% rate the Geography text as good and another 36.8% adequate in showing how the knowledge being learned could be used by the learners in the future. Moreover, 42.1% of the teachers said that the layout of the Geography textbook is good and 36.8% considered the text to be adequate.

As Westphal et al. (1980) quote Klare (1976) and Fass and Schumacher (1978), readability is a much less critical factor when students are highly motivated. According to the opinion of the teachers, this factor is well taken in this section.

4.5.2 Science

The procedure followed to analyze the findings of the readability checklist of the Geography textbook is also used to analyze the findings of the Science readability checklist (see Appendix S for the description of the analysis).

4.5.2.1 Understandability

There were 14 questions in this section. The first five, i.e., item one to item five, were about specific issues that can help understandability. As can be seen in Appendix S(1) when asked whether the assumption about the students' vocabulary knowledge in the Science textbook is appropriate, 40% said that the textbook is poor, whereas 35% rate the text

to be good. 45% said that the texts assumption about the students prior knowledge of the content area is adequate. On the other hand, 30% said that the text is poor. 40% said that the Science textbook's assumption about what the students could have learned from experience is poor and 30% said that it is adequate. When asked whether the teacher's guide provides them with ways to develop and review what they have experienced, 30% rated the text to be good while another 30% rated the Science textbook poor. 40% said that new concepts are related to the students prior knowledge in a good way. On the contrary 30% said that this issue is poorly addressed.

From the responses of the teachers, it is evident that the assumption of the Science textbook about students' vocabulary knowledge and their prior knowledge about the content area is not well treated. It is only when the students have the above factors that they can understand what is presented to them. Before introducing new concepts students should be provided with background which is familiar to them. They can then associate what they face as a new concept in line with the old concept they are refreshed.

In the second group of questions under <u>understandability</u> i.e., item 6 to item 8, 30% of the teachers said that the text is good in presenting abstract concepts with examples. But, 35% said that the text is poor in this regard. 35% rated the Science textbook to be adequate in presenting new

concepts one at a time with sufficient amount of examples. On the contrary 30% rate the text to be poor. Asked whether the Science textbook provides definitions in simple terms, 55% rate the textbook to be poor and 33% rate it to be adequate.

As can be seen in Appendix S(1), the general rating of the teachers of Science was that the textbook is poor in providing examples to introduce new concepts and giving definitions in simple words. This is a crucial issue. As there are many abstract concepts in Science the need to provide sufficient examples is paramount so that the students can understand what they read. The first contact the students can have with concepts is through definitions. All the three steps to develop new concepts in Science start with definitions followed by classification and then illustration. According to the reaction of the teachers, none of the three factors are handled well.

The third group of items of under <u>understandability</u> was from item 9 to item 12. These items have to do with sentence complexity, the importance of stating a clear cause and effect. 45% rated the appropriacy of sentence complexity to be poor and 30% rated the textbook to be adequate. When asked if the main ideas of paragraphs, chapters and subsections are clearly stated, 45% of the teachers rated the text to be poor. On the contrary, 40% said that text is rather good. 45% of the teachers rated the textbook to be

poor in avoiding irrelevant details. But 25% claimed that the text is good. 50% of the teachers rated the textbook to be good in stating important complex relationships. On the other hand, 45% said that the text is poor in this respect.

From the response so far made in this group, it is clear that the seventh grade Science text lacks other important factors that a textbook should have. Lack of simple sentences to explain concepts, inability to clearly state cause and effect relationships and above all lack of clearly stated ideas in paragraphs, chapters and subsections were observed by the teachers. These factors like the remaining factors are important to understand the textbook.

The last two items in <u>understandability</u> were item 13 and item 14. These have to do with possible alternative reading suggested for poor or advanced readers. 40% rated the textbook to be poor and 25% said that it is adequate. The other point was the readability of the Science textbook. 45% of the teachers rated the readability level of the textbook to be adequate whereas 30% said that the text is poor.

The opinion of the teachers about the readability of the textbook is almost similar with what is obtained in this chapter, section 2. But while their rating of the textbook in many of the issues that are important for readability was poor, their opinion about the readability of the text should have gone in line with the various rating they made so far.

4.5.2.2 Learnability/Organization

This part of the checklist has to do with Learnability of the Science textbook. Under this part many issues that influence the readability of a given textbook are brought forward for rating. The items are put in groups. The first group deals with questions related with organization. There were five questions in this group (item 15 - item 19).

As can be seen in appendix S(2)a, 35% rate the Science text to be poor for its lack of introduction for each chapter whereas 30% said that the text is good in this regard. When asked whether the textbook has a clear and simple organization pattern relating the chapters to each other, 45% said that it is adequate while 35% said that it is poor.

The variation in the response of the teachers about the presence of introduction is surprising. This could have been clear to all of them. If the introductions are there in every chapter, everyone of them should have said so. If not, all should have rejected it. But as can be seen in the response more or less equal respondents were in different alternatives. This should not have been the case. As a matter of fact the text doesn't have introductions in the beginning of each chapter.

Moreover, 55% rated the textbook to be poor because the chapters and units lack a clear and explicit and simple

organizational structure. 25% said that the text is adequate. With regard to index, glossary and table of contents, 35% rated it good, 25% said the textbook is adequate and another 25% rated it poor.

50% of the teachers rated the textbook adequate in questions and activities drawing attention to organizational pattern of the material. Moreover, 30% said that it is good in this respect. 45% of the teachers rated the text to be good with respect to the interrelation of teaching aids and text reinforcement. 25% rated the text to be adequate and another 25% said that the text is poor.

4.5.2.3 Learnability/Reinforcement

There were nine questions in this section. As can be seen in Appendix S(2)b, 35% rated the Science textbook to be good and another 35% adequate in providing opportunities for students to practice using new concepts or ideas. When asked about summaries at the end of each unit, 40% rated the text to be adequate and 35% rated it to be good. 45% rated the textbook to be good in providing diagramatic aids and 30% said that it is adequate. On the issue of supplementary activities, 35% rated the text to be good and 30% adequate and another 20% poor. But when asked whether these activities are prepared according to the abilities of students, 40% rated it to be poor while 35% said that it is adequate.

As can be seen in the responses, the issue of reinforcement seems to be fairly treated in the textbook. Two issues that are important in this part are summaries and supplementary activities. Well designed and clearly thought summaries are basically important. On the other hand, in the science text, the importance of supplementary activities is given due consideration.

40% and 35% of the teachers rated the textbook to be good and adequate respectively in providing direct questions for the students' self review. In the same way, 40% rated the textbook to be adequate in providing students with types of questions which encourage them to draw inferences or conclusions. On the other hand, 27% rated the text to be poor. When asked whether questions set help to encourage creative thinking, 45% rated the text to be adequate and 25% said that it is good. 45% of the teachers and another 35% rated the Science textbook adequate and good respectively, in clearly wording questions.

4.5.2.4 Learnability/Motivation

In this part there were five questions. As can be seen in Appendix S(2)c, 30% rated the teachers' guide adequate and another 30% poor in providing introductory activities. When asked if the unit titles and subheadings are concrete, meaningful or interesting, 50% said that the text is adequate while 35% rated the text to be good. 55% rated the writing style to be poor and 30% said that it is adequate.

When asked whether the activities in the text book are motivating, 35% rated it poor; 25% said that it is adequate and 30% rated it to be good. 35% rated the text to be adequate and 30% good and 25% poor in providing a means as to how the knowledge learned can be used by the students in the future. 30% rated the layout poor and 25% said that the textbook is adequate and another 25% rated the textbook to be good in this regard.

The general assessment of the two textbooks by the teachers is that, seen in the light of the various issues in the readability checklist, the Geography textbook is rated to be adequate. It is in fact not a good one to be used as it is, so there is a need for improving many aspects where the text is rated to be poor or even adequate. On the other hand, although there are instances where the Science text is rated to be good, in many of the issues it is rated to be poor. Thus there is the need to improve it.

4.6 Simplified Note

After considering the reaction of the teachers and the students about the current Geography and Science textbooks used in the seventh grade, the researcher attempted to see the effect of simplification by taking only a unit from one of the two texts, i.e., the Geography text. While simplifying, the researcher has tried to properly address both the linguistic and the textual factors that affect the

readability of the text based on the teachers and the students opinions. The unit is then prepared following the procedure outlined in chapter 3.7 (see Appendix J for the unit). After the note was prepared and verified for its content validity by the Geography Panel of the Ministry of Education, Curriculum Division, the readability difficulty level of the new unit was calculated using the Fog Index stated in chapter 3.1. Three passages of 100 words long were taken from the beginning, the middle and end of the new versions of the unit from the Geography text (see Table 9 below).

TABLE 9

READABILITY FINDINGS OF THE SIMPLIFIED UNIT

PAGE	NO. OF WORDS	D.L*
2	100	6.00
4	100	7.80
7	100	5.88
M = 6.54		

* D.L - Difficulty level.

As can be seen in the table, the mean was calculated to be 6.54. This means that the new prepared note has a readability difficult level of 6.54. This shows that the note can be read and understood by the seventh grade students.

A sample for the cloze test was prepared from the new note (see Appendix K) using the same procedure; the sample was given to 60 students. The papers were collected and the same grading and interpretation was used (see the answer key for the cloze text in Appendix T). The average score of the students was 10.42 out of hundred.

Compared with the previous cloze test finding in this chapter, section 2, there is no difference in the level of comprehension of the students even though the unit is a simplified one. The comprehension level is still at a frustration level.

4.7 Content Area Teachers' Attitude Towards Teaching Reading

The responses of the teachers in the content area given to the twelve items in the attitude measurement scale were analyzed (see Appendix U for the analysis). Moreover, for detailed information, the items and the percentage responses of the teachers are put in Appendix U(1). The analysis of the finding was done in accordance with the procedure stated in chapter 3.8. The response of the teachers in percentage is described as follows.

As can be seen in Appendix U(1), 70% of the teachers agreed that teachers should be obliged to help the students to improve their reading ability. 85.3% strongly agreed that technical vocabulary should be presented before the lesson.

67.6% agreed that content teachers should be responsible only to impart knowledge about the subject matter. 70% agreed that only few students can learn all they need to read in six years.

37% agreed that only teachers of English are responsible for the teaching of reading. On the other hand, 29.4% disagreed and 23.5% were neutral. 67.6% believed that content teachers should be trained in reading courses. This is opposite to what they said about the duty of content teachers where 67.7% said that they should be responsible for teaching content areas only. Almost 50% disagreed with the statement that only English teachers should be responsible for the teaching of reading. 23.5% agreed and 17.6% were neutral.

55% disagreed with the statement that content teachers should teach content and leave English to English teachers. Moreover, 90% believe that every content area teacher should be familiar with theoretical concepts of reading.

As can be seen in Appendix U(2), the overall attitude of each teacher towards the twelve items is computed in percentages. The minimum was 53%, the maximum being 93%.

According to the procedure stated in chapter 3.8, 53% means that the teacher has a low attitude and 93% means that the teacher has a high attitude towards the teaching of

reading in the content area. When working the average attitude of all the teachers towards the teaching of reading in the content area, it was computed to be 70%. This means that the average attitude of the teachers in teaching reading skills in the content area is below average.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 General Summary

5.1.1 Readability

As can be seen in chapter 4.1, the readability level of the seventh grade Geography and Science textbooks was calculated to be 7.35 and 9.17 grade level respectively. Using the frame of reference stated in chapter 2.1, the Geography textbook is appropriate to the seventh grade students. On the other hand, the Science textbook is slightly above the seventh grade level.

5.1.2 Cloze Test/Geography and Science

According to the finding in chapter 4.2, the seventh grade students who took the Geography cloze test scored an average of 16.40%. On the other hand, the average score for the cloze tests on Science was 13.93%. According to the interpretation of cloze test scores in chapter 3.2, any grade which is below 40% is declared to be a frustration level. Students at this level of comprehension can't read and understand their textbook even if they are provided with assistance from their teachers.

5.1.3 Students' Questionnaire

5.1.3.1 The Layout of the Two Texts

The findings in chapter 4.3.2 showed that the students have a positive attitude towards the layout of both the

Geography and Science textbooks, meaning they like the print size, drawings, maps, etc. Moreover the layout of the two textbooks helps them to understand what they read.

5.1.3.2 Students' Attitude Towards Reading and Understanding the Geography and Science Textbooks

From the finding in chapter 4.3.3, it seems that the students read their two textbooks on a regular basis. Students also said that they do understand the two textbooks. Moreover, the majority said that they have no problems in English and so can read and understand their two textbooks. More than 60% said that they could guess meaning of words from the context. This is not, however, borne out by the cloze test results which indicated that the students' level of comprehension in both the Geography and Science tests was at a frustration level. Also the findings from the interview show that the students do have problems in reading and understanding the two textbooks.

5.1.3.3 Assistance Students Get From Content Area Teachers

As indicated in chapter 4.3.4, although the students claim to read the two textbooks before and after the teachers explanation, they partially understand when reading them after the teachers' explanations. Both the Geography teacher and Science teacher give their students notes, consequently, the students depend on their notes for doing their homework and then preparing for examinations.

5.1.4 Interview with Students

From the questionnaire response in chapter 4.4, the students seem to have no problems in reading and understanding their two textbooks. But in the interview many of them changed their opinion in many of the issues. Most of them had said that they liked the layout of the Geography textbook. But here they said the layout of the Science textbook is not interesting. They admitted that they don't understand what they read. They also said that they don't regularly read, and, above all, they said that the English they learn doesn't help them much in reading their textbooks. The students also said that their teachers usually tell them meanings of words and sentences in Amharic.

5.1.5 Readability CheckList

5.1.5.1 Geography

5.1.5.1.1 Understandability

The opinion of the teachers about the Geography text is that it is adequate. This, to a certain extent, means that the text, when seen in the light of the various factors under understandability, is adequate. But, this doesn't in any way mean that the text is suitable to be used for all time. There is a need to improve in relation to some factors under the same group of items.

5.1.5.1.2 Learnability/Organization

Although it may be difficult to separate understandability and learnability factors, careful attention should be given to how well the concept in a textbook is understood and remembered. The main factor for this is the organization of the textbook. The general response of the teachers about the organizational aspect of the seventh grade Geography textbook is that it is adequate.

5.1.5.1.3 Learnability/Reinforcement

In this section, issues which are thought to be important for reinforcement were brought to attention. These include the importance of concept practising, summaries, diagramatic aids, supplementary activities and the presentation of questions. Although such items like supplementary activities and summaries are rated to be poor in the textbook; the general picture we can draw is that according to the teachers the textbook is adequate.

5.1.5.1.4 Learnability/Motivation

There were six questions in this part. The response of the teachers is that the Geography textbook is good in terms of the issues included under this part. A particular instance is that both the students and the teachers have a positive attitude towards the layout of the Geography textbook.

5.1.5.2 Science

5.1.5.2.1 Understandability

The responses of the Science teachers to the 14 items under understandability are varied in nature. Generally the teachers rated the Science text to be poor. In ten of the fifteen items the highest percentage was the "poor" alternative. Only a small percentage of teachers rated the Science textbook to be "excellent" in item 4 and 15. The highest rating was given for item 8 in which 55% rated the textbook to be poor. In another instance, according to the teachers, the readability level of the seventh grade Science textbook is adequate to the grade.

5.1.5.2.2 Learnability/Organization

The response of the teachers towards the organizational aspect of learnability was still varied. The responses by and large concentrated in the "Good", "adequate" and "poor" alternatives. Most of the respondents rated the textbook "poor" and others "good" in respect to organization. The biggest problem in this section was indicated in item 17 where the importance of a single organizational structure in terms of chapters and units was mentioned. Most of the teachers rated the Science textbook to be poor in this regard.

5.1.5.2.3 Learnability/Reinforcement

The majority of the teachers rated the Science textbook as "adequate" and "Good" in terms of reinforcement. Compared

with the Geography text, item No. 24, which was about supplementary activities, was positively rated by the Science teachers. On the issue of question representation, the response about the seventh grade Science textbook was that it is "adequate". Generally, although a very small percentage of teachers rated the Science textbook excellent, most of the teachers rated it as "good" or "adequate" .

5.1.5.2.4 Learnability/Motivation

According to the response of the teachers, the issue of motivation is, to a certain extent, rated to be adequate. Although the majority of responses concentrated in the three alternatives i.e., "Good", "adequate" and "poor" the scale still leans to the "adequate" alternative. This is to mean that according to the responses of the Science teachers the issue of motivation is adequately treated in the textbook. In the last item, i.e., 35, the attitude of teachers about the layout of the Science textbook was equally shared by the students in chapter 4.4. Thus, most of the teachers rated the science textbook to be poor in this respect.

5.1.6 Content Area Teachers' Attitude Towards Teaching Reading

Based on the responses of the teachers, the attitude of the teachers to the positive and negative items stated in chapter 3.8, is fair. What is interesting is that 17.39% were undecided in all the twelve items under consideration.

The minimum attitude score was 53%, meaning that, according to the interpretation of the score discussed in chapter 3.8, the teacher has a negative attitude towards the teaching of content areas. On the other hand, the highest score was 93%, meaning that the teacher has a positive attitude. When we see the response of the teachers as a group, the attitude of the teachers is below average. This means that most of the teachers believe that the teaching of reading should be left to the teachers of English.

5.2 Conclusion

This study attempted to compare the comprehension abilities of the seventh grade students with the levels expected of them in the content areas. For this purpose, the readability level of the seventh grade Geography and Science textbooks was calculated using the Fog Index. Following this, cloze tests on the two texts were prepared and administered to assess the comprehension level of the seventh grade students. Furthermore, questionnaires and interviews were prepared to investigate the kinds of reading habit they have and problems the students face and how they try to overcome the problems. The opinion of the seventh grade Geography and Science teachers about the readability of the two texts was collected and analyzed. Moreover the possible effect of the simplified note was assessed by taking a unit from the Geography textbook and its level of readability difficulty was measured using the Fog Index. In addition, a cloze test was also prepared from the sample unit. Finally

the attitude of content area teachers towards a possible future involvement in the teaching of English, particularly the teaching of reading in the classroom, was also collected and analyzed.

As mentioned in Chapter 1.1.2, there were six questions that were set to guide the study to achieve the main purpose of the research.

The following conclusions are made on the basis of the findings.

5.2.1 The finding of this research indicated that the readability level of the seventh grade Geography textbook is appropriate to the seventh grade students numerically speaking despite the various factors that affect the readability of a text. In contrast, the readability level of the Science textbook of the seventh grade is slightly above the level of the seventh grade students.

5.2.2 The findings from the cloze tests have served two purposes. In the first place, it helped to cross-check the readability difficulty level of the two texts. What is more, it helped to assess the comprehension level of the seventh grade students. As the finding indicated, the comprehension level of the seventh grade students is at the frustration level.

5.2.3 In order to investigate the reading habit and difficulty the seventh grade students face in reading and understanding their texts, a questionnaire was prepared to the seventh grade students. The findings showed that the students claimed to like reading, to have no problem in reading and to understand what they read. In order to verify this responses, interviews were conducted with sample subsets of the questionnaire respondents. The findings showed that they can't really read; they can't understand what they read, they don't like the layout of the Science textbook in particular. They also admitted to have problems as a result of difficult vocabulary and complex sentences. The finding from the interviews appears to be more valid than those from the questionnaire. The cloze test results also corroborate the interview results.

5.2.4 Once the readability level of the two texts was established, the cloze tests were administered and the reading habit and problems of the students were assessed and verified, the next step was to find out the opinion of the content area teachers about the readability level of the Geography and Science textbooks. According to the assessment of Geography teachers, the seventh grade Geography textbook is adequate in its understandability and learnability. In the same way the response of Science teachers on the issue was more or less the same. But teachers feel that the text lacks in many points relating to its understandability and learnability, especially in motivation. However, according

to the expressed opinion of the Science teachers, although it has serious limitations, the seventh grade Science textbook is adequate to be used.

5.2.5 After looking at the various opinions indicated by the content teachers and the students about some of the common shortcomings of the two texts, a sample of a unit from the Geography text was prepared. The findings showed that the simplified unit had eased the readability difficulty of the unit numerically speaking. Cloze test results on the simplified version of a unit showed that students' comprehension was still at the frustration level. Although findings from the cloze test on the simplified unit had no effect on the comprehension level of the students, there are lots of differences between the old unit and the present simplified unit, not only in terms of linguistic aspects, but also in its presentation, language code, understandability and learnability.

5.2.6 Once the above issues were addressed the next question raised was related to the attitude of content area teachers towards the teaching of reading in content areas. As the findings showed the attitude of the majority of teachers that responded to the attitude measurement scale is below average. This means that content area teachers are not willing to teach reading in the content area.

5.3 Recommendations

Based on the findings, the following recommendations could be made regarding ways of raising the level of comprehension of the seventh grade students to the levels expected of them in their content areas.

5.3.1 As the seventh grade is the level where students start learning most of their lessons in English, the proper assessment of the readability difficulty level of each content area subject should be made. This means that both problems which can be quantified and the textual factors (understandability, learnability) which are equally determinant to the readability of a text have to be equally addressed.

5.3.2 The result of the cloze tests showed not only the readability difficulty of the texts, but also the low level of comprehension of the students. To avert this problem, students must be prepared in the primary English classes to develop their vocabulary knowledge, individual reading and understanding, concept understanding and association of what they know with what they don't at a minimum level.

5.3.3 In the preparation of teaching materials, there should always be a close relationship between the curriculum people of different subject panels at the top with the English panel and this relation should be extended to the

classroom level, subject teachers and English teachers should collaborate.

5.3.4 One important suggestion made by the content areas teachers was that subject area teachers should be trained in the teaching of reading skills. This means that teachers would be willing to teach reading if they are trained in the teaching of reading skills. This should extend to include students in Teacher Training Institutions and Higher Education.

5.3.5 What is recommended in 5.3.4 can be of no use unless the teachers in content areas believe or accept the duty of helping their students in their reading problem. To do this, teachers in the content area and those under training should be helped to develop a positive attitude in assisting their students. In order to do this in-service trainings, seminars, workshops, etc. should be organized on a continuous basis to positively influence their attitude towards the teaching of reading in the content areas, by raising their awareness of the problem and some of the ways to solve this.

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APPENDIX A

SEVENTH GRADE - GEOGRAPHY (PAGE 1)

INSTRUCTION

The following passage has certain words missed out. Each gap in the passage stands for just ONE word that is missing. Read the passage carefully and write the missing word. You may find clues in the passage to help you find the missing word. If you can think of more than one word that would fit into the gap, choose the one word that you think the author would have used.

If you look at the sky during a clear night, you will see that there are many stars. They are too many ___1___ you can not count ___2___. If you observe carefully ___3___ will also see that ___4___ of the stars are ___5___, while some are found ___6___ groups. A group of stars ___7___ called a galaxy. The ___8___ in which our sun ___9___ found is called the ___10___. In the milk-way there ___11___about 100 billion stars.

___12___ the stars that we ___13___ in our galaxy are ___14___ a few of the ___15___ in the universe. There ___16___ billions and billions of ___17___ in your galaxies such ___18___ the milky-way. The unvierse ___19___ full of such billions ___20___ group of stars. It ___21___ therefore, limitless or infinite. ___22___ means that it does ___23___ have a beginning or ___24___ end.

Our galaxy, the ___25___, has a shape which ___26___ like a disc. Everything ___27___ universe moves. There ___28___ nothing that does not ___29___in space. So our ___30___ also moves. It moves ___31___ the direction shown by ___32___ arrows in the figure ___33___.

How do we measure ___34___ in space? You can ___35___ understand the distance between ___36___ home and your school. ___37___ may say it is ___38___ or 5 or 8 ___39___. You can also say ___40___ distance between Addis Ababa and ___41___ is 500 kilometres. Distances ___42___ earth are measured in ___43___. But in space they ___44___ very great. Therefore, it ___45___ very difficult to measure ___46___ kilometres. For example, ___47___ star to us other ___48___ the sun, is 42,000,000,000 ___49___ away from us. To ___50___ such a large number is difficult.

APPENDIX B

CLOZE TEST (2)

SEVENTH GRADE - GEOGRAPHY (PAGE 27)

INSTRUCTION

The following passage has certain words missed out. Each gap in the passage stands for just ONE word that is missing. Read the passage carefully and write in the missing word. You may find clues in the passage to help you find the missing word. If you can think of more than one word that would fit into the gap, choose the one word that you think the author would have used.

Volcanic activity is another internal force which changes the surface of the earth. It is also caused ___1___ internal movement. We have ___2___ that inside the earth ___3___ temperature is very very ___4___. This high temperature changes ___5___ rocks into magma. When ___6___ magma comes out to ___7___ surface, we say a ___8___ activity has taken place.

___9___ a volcanic activity, molten ___10___ gases, water vapour, ashes ___11___ other solid materials are ___12___ out to the surface. ___13___ volcanic activities are quiet ___14___ slow. The lava slowly ___15___ out and spreads over ___16___ surrounding area. At other ___17___ the eruption is very ___18___. Therefore, very large amounts ___19___ gases, ashes, and lava ___20___ thrown high into the ___21___. They fall back on ___22___ the surface again.

The ___23___ may come out through ___24___ hole. This hole is ___25___ a vent. The magma ___26___ also come out through ___27___ vents. These are called ___28___. If the magma comes ___29___ into the surface through ___30___ vent a CRATER IS ___31___. A volcano which has ___32___vent is cone-shaped. This ___33___ because the materials that ___34___out through the vent ___35___ collected near the crater. ___36___ a volcano erupts very ___37___.

When this happens the ___38___ part of the volcano ___39___ blown away. This forms ___40___ large creator called a ___41___. When it rains, water ___42___ in the creator or ___43___ the caldera and forms ___44___ lake. We call this ___45___ CREATOR OR CALDERA LAKE. ___46___ Ethiopia on top of ___47___Zequala there is such ___48___ lake.

When eruption begins ___49___ in a caldera, new, ___50___ cone-shaped volcanoes are formed inside the caldera. These are called CALDERA Cones.

APPENDIX C

CLOZE TEST (3)

SEVENTH GRADE - GEOGRAPHY (PP. 35-38)

INSTRUCTION

The following passage has certain words missed out. Each gap in the passage stands for just ONE word that is missing. Read the passage carefully and write in the missing word. You may find clues in the passage to help you find the missing word. If you can think of more then one word that would fit into the gap, choose the one word that you think the author have used.

Running water has a great force to change the surface of the earth. When rivers move they____1____up broken rocks, transport ____2____ deposit them in lower ____3____. The place where a ____4____ begins is its SOURCE. ____5____ source of a river ____6____ be a spring, a ____7____ or a lake. The ____8____ which the river ____9____ a slop from its ____10____ is its COURSE. As ____11____ river flows down the ____12____of the land to ____13____ sea other smaller streams ____14____rivers join it. A ____15____stream or river that ____16____a bigger river is ____17____ a TRIBUTARY. The place ____18____ the smaller stream or ____19____ joins the bigger one ____20____ called the confluence. The ____21____of a river is ____22____ place where it ends. ____23____is usually a sea. ____24____ river may end also ____25____ and INLAND

LAKE, or ___26___ a swamp, or it ___27___ disappear in dry areas. ___28___ river has three different ___29___ in its course, from ___30___ source down to its ___31___. And the work of ___32___ river is different in ___33___ three parts. In its ___34___course a river flows ___35___ fact. So it erodes ___36___land greatly and forms ___37___ valleys, water falls and ___38___.

In the middle course ___39___ river valleys becomes wide ___40___large. The volume of ___41___ increases in this part ___42___ many tributaries join the ___43___ river.

In its lower ___44___the river flows slowly. ___45___ is not straight but ___46___. This bending type is___47___MEANDER. A MEANDER is ___48___when a river takes ___49___ rout following rock layers, ___50___ than harder rock layers. The river erodes, transports and deposits in the part of its course.

APPENDIX D

CLOZE TEST (1)

SEVENTH GRADE - SCIENCE COMES TO LIFE (PAGE 44)

INSTRUCTION

The following passage has certain words missed out. Each gap in the passage stands for just ONE word that is missing. Read the passage carefully and write in the missing word. You may find clues in the passage to help you find the missing word. If you can think of more then one word that would fit into the gap, choose the one word that you think the author have used.

There are many famous examples of this happenings. Sometimes man killed all ___1___ one animal, because it ___2___ an enemy of his ___3___ or domestic animals. This ___4___ the natural PREY of ___5___ the animals to increase ___6___ number. These then become ___7___ worse enemy than the ___8___ PREDATOR. There are many ___9___ in which man destroys ___10___ stable natural community structure. ___11___ will discuss some of ___12___ ways now. Later, you ___13___ find out other ways ___14___ which man affects the ___15___. Also you will discover ___16___ man is trying to ___17___ bad effects.

When man ___18___ the land to grow ___19___, he plants just a ___20___ types of plants. These ___21___ grows in very large ___22___. These organisms are probably ___23___ to the area. The ___24___ has to be

cleared ___25___ its natural plant communities. ___26___ means that he natural ___27___communities can no longer ___28___ the third level feeders ___29___ be most affected. The ___30___ numbers of secondary level ___31___, which survive in uncleared ___32___ will not be enough ___33___ feed these large animals. ___34___ those countries, where most ___35___ the land is used ___36___agriculture, such as in ___37___, there are very few ___38___level feeders left. For ___39___, the wolf used to ___40___ all over Europe. Now ___41___ is only found in ___42___ forests of the far ___43___ and in Russia. In ___44___, the use of the ___45___ for crops takes away ___46___ grass, which is food ___47___the large animals such ___48___ antelope, oryx, and zebra.

APPENDIX E

CLOZE TEST (2)

SEVENTH GRADE - SCIENCE COMES TO LIFE (PAGE 70-71)

INSTRUCTION

The following passage has certain words missed out. Each gap in the passage stands for just ONE word that is missing. Read the passage carefully and write in the missing word. You may find clues in the passage to help you find the missing word. If you can think of more then one word that would fit into the gap, choose the one word that you think the author have used.

Unlike the other animals you have studied, mammals do not lay their eggs. Instead, they are kept ___1___ the body, until the ___2___ mammal has developed sufficiently ___3___ live, eat and breathe ___4___ its own. This ___5___ the same stage as ___6___ a young insect or ___7___ becomes a young adult. ___8___ the case of mammals ___9___ say the young are ___10___.

From your studies of ___11___ toads, you found that ___12___ did not mate or ___13___ their eggs immediately they ___14___ become adults. There is ___15___ period of time before ___16___ became mature. In mammals ___17___ humans, this is also ___18___. When a baby is ___19___ it is not fully ___20___. When a human's body ___21___ finished its development, he ___22___ said to have reached ___23___ stage of puberty. You ___24___ that there are

differences ___25___ in the physical appearance ___26___ young children and adults. ___27___ adult man has hair ___28___ his face, under the ___29___ and around the sexual ___30___. His voice is deep ___31___ women have breasts, which ___32___ provide milk for ___33___ children. She also grows ___34___ but not usually on ___35___ the face. These changes ___36___ the outward signs that ___37___ has been reached. The ___38___ age for reaching puberty ___39___, for boys, 15 years ___40___ for girls 13 years. ___41___, the change for boys ___42___ be anywhere between 12- ___43___ years, and for girls ___44___ -16 years.

In the ___45___, sperm cells are produced ___46___ the two testicles. The ___47___ are covered by a ___48___ of skin called the ___49___. The sperm cells are ___50___ to the female's body by a projection called the penis.

APPENDIX F

CLOZE TEST (3)

SEVENTH GRADE - SCIENCE COMES TO LIFE (PP. 149-51)

INTRODUCTION

The following passage has certain words missed out. Each gap in the passage stands for just ONE word that is missing. Read the passage carefully and write in the missing word. You may find clues in the passage to help you find the missing word. If you can think of more then one word that would fit into the gap, choose the one word that you think the author have used.

Our most important source of wood are forests. There are three kinds ___1___ natural forests in Ethiopia. ___2___ three natural forests are ___3___ than an important source ___4___ wood products. They also ___5___ in which ___6___ and animals can live.

___7___ highlands of Ethiopia were ___8___ covered with forests. Men ___9___ plenty of wood available ___10___ fuel and building. Cows ___11___ sheep could find plenty ___12___ vegetation to eat. Many ___13___ animals (wild life) lived in ___14___ forests. The branches and ___15___ softened the impact of ___16___ rain on the earth ___17___ roots of forest plant ___18___ soil from being ___19___ away. Water was kept ___20___ the soil, and the ___21___ always had plenty of ___22___. Dead leaves fall to ___23___ floor and decayed ___24___

become humus in the ___25___. The trees protected the ___26___from strong winds.

As ___27___number of people increased ___28___ demands for forest products ___29___ farm land also increased. Trees ___30___ cut down for fuel ___31___ building material faster than ___32___trees could grow. More ___33___ more land was cleared ___34___farming. Without the forest, ___35___ fell heavily upon the ___36___ soil. It ran away ___37___ and carried away the ___38___ topsoil. Poor soil with ___39___gallies remained. The soil ___40___ not hold much water. ___41___ the level of water ___42___wells became lower. Dead ___43___no longer added humus ___44___ the soil to make ___45___rich. As the soil ___46___poor, the farmers had ___47___ clear even more forests ___48___ find food land for ___49___ crops. Strong winds could ___50___ damage houses and crops, and became more scarce.

APPENDIX G

QUESTIONNAIRE FOR GRADE SEVEN STUDENTS

EXPLANATION:- This questionnaire is not prepared to examine you. Nor is it intended to get information from you about your teachers. It is designed to get some idea in relation to education.

INSTRUCTION:- In the following part unless you are required to give written answers, you can make a tick (✔) mark in the space provided.

BACKGROUND

1. The school where you attended the six grade _____.
2. Your age 11-13 years _____, 14-16 years _____, above 16 years _____.
3. SEX: male _____ Female _____
4. If you read newspapers, magazines, novels written in Amharic, Yes ☐ No ☐
5. If your answer for question No.4 is yes, show in the table below how much and how frequent you read by using numbers in the appropriate column:

	DAILY AMOUNT	WEEKLY AMOUNT	MONTHLY AMOUNT	YEARLY AMOUNT
Newspapers				
Magazines				
Novels				
Other books				

6. Can you define what a library is?

_____

_____

7. Do you have your own Geography text? or have you borrowed it from the school? or you don't have it?

my own ☐ borrowed ☐ don't have it ☐

8. Do you have your own science text? or have you borrow it from the school? or your don't have it?

my own ☐ borrowed ☐ don't have it ☐

9. If you have borrowed Geography text, is it;

for you alone ☐ for two ☐ for three ☐ for four ☐

10. If you have borrowed science text, is it

for you alone ☐ for two ☐ for three ☐ for four ☐

INSTRUCTION: In the following pages, you are given five alternatives for each suggestions. You can only make a tick (✔) on one of the alternatives. The alternatives are: strongly agree, agree, no opinion, disagree, strongly disagree.

Let us see one example

"Seven grade students read Amharic novels in their spare time"

1. If you strongly agree with the statement mark a tick (✓) in the first column which say <u>strongly agree</u>
2. If you agree with the statement mark a tick (✓) in the second column which says <u>agree</u>
3. If you have no opinion about the statement mark a tick (✓) in the third column which says <u>no opinion</u>
4. If you disagree with the statement mark a tick (✓) in the fourth column which says <u>disagree</u>
5. If you strongly disagree with the statement mark a (✓) in the fifth column which says <u>strongly disagree</u>

If there is anything unclear, you can ask.

Now we can start!

INSTRUCTION 1 The following statements are about the layout of <u>Geography</u> text and <u>Science Comes to Life</u> text.	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1.1 I like the cover design of Geography text					
1.2 I like the cover design of Science text.					
1.3 The words of Geography text are legible.					
1.4 The words of Science text are legible.					
1.5 Drawings and pictures in Geography text are helpful to understand the content.					
1.6 Drawings and pictures in Science text are helpful to understand the content.					

INSTRUCTION 2: The following statements are concerned about the attitude towards reading and understanding subject area textbooks	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
2.1 I always read Geography text.					
2.2 I always read Science text.					
2.3 Even if I read it, I can't understand the Geography text.					
2.4 Even if I read it, I can't understand Science text.					
2.5 I usually read Geography text when I am given a homework.					
2.6 I usually read Science text when I am given a homework.					
2.7 I never read Geography text					
2.8 I never read Science text.					
2.9 I don't usually read Geography text because I am weak in English					
2.10 I don't usually read Science text because I am weak in English.					
2.11 I don't usually read Geography text because the words are difficult to understand.					
2.12 I don't usually read Science text because the words are difficult to understand.					
2.13 Even if I start reading Geography text, when I come across a new word I stop reading the text					

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
2.14 Even if I start reading Science text, when I come across new words I stop reading the text.					
2.15 When I start reading Geography text, if I come across new words I usually try to guess the meaning.					
2.16 When I start reading Science text, if I come across new words, I usually try to guess the meaning.					
2.17 When reading Geography text, if I find new words, I usually try to understand the meaning from the context.					
2.18 When reading Science text, if I come across new words, I usually try to understand the meaning from the context.					
2.19 While reading Geography and Science, if I get new words, I usually refer the meaning in the dictionary.					
2.20 While reading Geography and Science texts, if I get new words, I usually ask my teachers for the meaning of words.					

INSTRUCTION 3: The following Statements are related to the type of assistance you get from your teachers.	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
3.1 I usually read Geography text before the teacher explains it.					
3.2 I usually read Science text before the teacher explains it.					
3.3 I always read Geography text after the teacher's explanation.					
3.4 I usually read Science text after the teacher's explanation.					
3.5 I usually understand Geography text when reading it before the teacher's explanation.					
3.6 I usually understand Science text when reading it before the teacher's explanation.					
3.7 I do understand Geography text when reading it after the teacher's explanation.					
3.8 I do understand Science text when reading it after the teacher's explanation.					
3.9 Our Geography teacher always gives us notes.					
3.10 Our Science teacher always gives us notes.					

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
3.11 Because the Geography teacher gives us notes, there is no need for me to read the text.					
3.12 Because the Science teacher gives us notes, there is no need for me to read the text.					
3.13 When I am given homework on Geography, I usually do it by reading the note given to us by our teacher.					
3.14 When I am given homework on Science, I usually do it by reading the note given to us by our teacher.					
3.15 Our Geography teacher usually teaches us from the notes he prepared.					
3.16 Our Science teacher usually teaches us from the notes he prepared.					
3.17 Our Geography teacher always tells us meanings of some words or sentences in Amharic.					
3.18 Our Science teacher always tells us meanings of some words or sentences in Amharic.					

APPENDIX H

A SCHEDULE OF INTERVIEW FOR SEVENTH GRADE STUDENTS

1. What is your opinion about the cover design, maps, diagrams, pictures, print size of your
   a) Geography text? b) Science text?
2. How far do you think the maps, diagrams, pictures, print size help you to read and understand the text?
3. Do you usually read Geography text by yourself? If so, do you understand what you read? If you don't read, what is the reason?
4. Do you usually read Science texts by yourself? If so, do you understand what your read? If you don't what is the reason?
5. What do you do when you get new words in your reading?
6. Does the English you are learning, especially the reading part, help you in any way to read and understand your Geography and Science texts?
7. What kind of support do you get from your subject teachers in order to read and understand the two texts?
8. If you are given homework, which of the following do you use in doing your homework?

a) Textbook b) Notes c) Both textbook and notes

APPENDIX: I

READABILITY CHECKLIST

Dear Teacher,

The checklist is designed to help you evaluate the readability of your classroom text. It can be best used if you rate your text while you are thinking of a specific class. Be sure to compare the textbook to a fictional ideal rather than to another text. Your goal is to find out what aspects of the text are or are not less than ideal.

Rate the questions below using the following rating system.

5 - Excellent

4 - Good

3 - Adequate

2 - Poor

1 - Unacceptable

NA - Not applicable

Textbook title _____

Publishers _____

Copyright date _____

UNDERSTANDABILITY

1. _____ Are the assumptions about the students' vocabulary knowledge appropriate?
2. _____ Are the assumptions about students' prior knowledge of this content area appropriate?

3. _____ Are the assumptions about what the students could have learned in practice appropriate?

4. _____ Does the teacher's guide provide the teacher with ways to develop and review what the student knows and what he has experienced?

5. _____ Are new concepts clearly linked to the students' prior knowledge or to their experiential background?

6. _____ Does the text introduce abstract concepts by accompanying them with many concrete examples?

7. _____ Does the text introduce new concepts one at a time with sufficient number of examples for each one?

8. _____ Are definitions understandable and at lower level of abstractions so that they are more concrete?

9. _____ Is the level of sentence complexity appropriate for the students?

10. _____ Are the main ideas of paragraphs, chapters and subsections clearly stated?

11. _____ Does the text avoid irrelevant details?

12. _____ Does the text clearly state important complex relationships (e.g., causality, conditionality, etc.) rather than always expecting the reader to get them from the context?

13. _____ Does the teacher's guide provide list of accessible resources containing alternative readings for the very poor or advanced readers?

14. _____ Is the readability level appropriate to the class?

LEARNABILITY

ORGANIZATION

15. _____ Is an introduction provided for in each chapter?

16. _____ Is there a clear and simple organization pattern relating the chapters to each other?

17. _____ Does each chapter or unit have a clear, explicit and simple organizational structure?

18. _____ Does the text include resources such as an index, glossary, and table of contents?

19. _____ Do questions and activities draw attention to the organizational pattern of the material (e.g., chronological, cause and effect, spatial, topical, etc.?)

20. _____ Do teaching aids interrelate well with the text reinforcement?

REINFORCEMENT

21. _____ Does the text provide opportunities for students to practice using new concepts or ideas?

22. _____ Are there summaries at the end of each unit?

23. _____ Does the text provide adequate diagramatic aids such as maps, graphs, illustrations, etc. to reinforce concepts?

24. _____ Are there adequate suggestions for usable supplementary activities such as field trip, cite inspections, group observations, etc?

25. _____ Are these activities prepared according to abilities of students in a class?

26. _____ Are direct questions provided for the students' self review?

27. _____ Do some of the questions encourage the students to draw inferences or conclusions?

28. _____ Are there discussion questions which encourage creative thinking?

29. _____ Are questions clearly worded?

MOTIVATION

30. _____ Does the teacher's guide provide introductory activities?

31. _____ Are unit titles and subheadings concrete, meaningful, or interesting?

32. _____ Is the writing style of the text appealing or attractive to the students?

33. _____ Are the activities motivating? Will they make the students want to pursue the topic further?

34. _____ Does the book clearly show how the knowledge being learned might be used by the learner in the future?

35. _____ Are the cover, format, print size and pictures appealing or attractive to the students?

(adapted form Juditn Westphal, Irwin Carol A. Davis, "Readability Checklist." Journal of Reading Volume 24 No.2 1980)

APPENDIX: J

SIMPLIFIED NOTE ON UNIT FOUR GEOGRAPHY

FORCES THAT CHANGE THE SURFACE OF THE EARTH

PURPOSE FOR READING

In this unit we are going to learn about the major factors that change the surface of the earth. At first we will examine the effect of temperature, frost, animals and plants action on the surface of the earth. Next we will learn about the different types of erosion and also how underground water is formed.

Can you answer the following questions?

1. Can you think how temperature changes affects rocks?
2. Do you know what frost is? Have you ever seen frost? Where can we find frost?
3. Do you remember in your own area a type of plant which has long and strong roots? Have you observed the effect on the rock and the soil where the plant grows?
4. Do you know what erosion is?
5. What type of erosion can you remember?
6. Have you ever seen a spring? How is it formed?

Words to Know

WEAR AWAY - መሸርሸር
LAYER - ሽፋን
DEPOSIT - ክምችት
RUNNING WATER - ወራጅ: ውኃ
TRIBUTARY - መጋቢ: ወንዝ
INLAND LAKE - በመሬት: የተከበበ: ሐይቅ
CRACK - ስንጥቅ
SPRING - ምንጭ

When we read the word EROSION, we remember many things related with it. Erosion can be defined as the wearing away of the cover of the land surface by:

a) running water
b) wind
c) sea waves

Rocks are broken down into pieces by change of:

a) Temperature
b) Frost
c) Animals and plants

Let us see how the above things affect the rocks.

a) TEMPERATURE CHANGE

Do you know what temperature is? Do you know the definition of temperature? In hot areas the temperature increases and in cold areas the temperature falls. At day time the temperature increases or rises up. Can you guess as to what happens to the temperature in a hot area at night? Yes, the temperature decreases or falls down.

In hot areas rocks are usually very hot during the daytime. Because of this, the surface layer of the rocks expands. During the night, when the temperature decreases, the rocks which expanded during the daytime, contracts. The expansion and contraction of rocks happens every day. This results in the rocks to crack and then the upper layer is broken. As you know a rock is a solid stony part of the earth's crust. At daytime when the outer layer is heated, what do you think happens to the inner layer of the rock? Yes, the inner layer remains cool. This happens during the daytime. What do you think

of the temperature of the rocks at night? The opposite happens. The inner layer becomes warmer and the outer layer becomes colder. This change of temperature during daytime and nighttime directly affects the rocks and as a result the outer layer is broken easily. After the outer layer is broken, the next layer is exposed again. This new layer is still exposed to the changes in temperature and wears away gradually. Due to this continual action, rocks which were once very big will be reduced to smaller sizes in the long time.

b) FROST ACTION

Have you ever seen frost? If you are living in a very cold place you may have a chance to see it. But, if you are living in a warm place you may not see it. Frost is a weather condition with temperature below the freezing-point of water.

Rain water usually collects and fills the crack of rocks during the rainy season. What do you think will happen to the water collected in the crack of rocks when the temperature falls sharply? The water will freeze. Does this have any effect on the rocks? Yes, the freezed water turns to ice and occupies a large space. The ice pushes the crack into two directions. Then cracks will get larger and the rocks will break.

C) PLANT AND ANIMAL ACTION

Plants have different types of roots. Some are short, soft and flexible while others are long and strong. You can compare the root of a flower plant in your compound with the root

of an eucalyptus tree. Some plant roots go into the crack of rocks. As the root of these trees grow, they push the rock into two directions like the ice in the cracks; we have learnt. Then due to this action, the rocks begin to break. In addition to plants, there are also animals which make holes in the ground. Worms and rabbits are good examples. Why do you think they make holes and break? They don't do it knowingly but they do this while looking for food or shelter. Do you remember another animal who break up rocks? It is man himself. He breaks rocks for building houses, roads, etc.

We have so far seen the main forces that act on the rocks on the surface of the earth. The big rocks are reduced to smaller pieces which we call soil. This soil is again carried away and deposited by:

1) Running water
2) Wind and
3) Sea waves

1. RIVER EROSION AND DEPOSITION

Running water has a great force to change the surface of the earth. But how? When river moves it carries the broken rocks transport and deposits them in lower areas.

The place where a river begins is its SOURCE. What kind of place do you think can be a source of a river? It is usually a spring, a marsh or a lake. Do you remember any river in Ethiopia whose source is a spring, a marsh or a lake? The path or way that the river follows is known as

the COURSE of a river. As a river flows down slope of land to the sea, it is joined by smaller rivers or streams. These smaller streams or rivers are called TRIBUTARIES. They may join the big river at different points of the course of the big river. The point where a small stream or river joins or meets the big river is called the CONFLUENCE. And the place where a river ends is known as the MOUTH of a river. Usually rivers end at sea. But this is not always the case. Do you know a river in Ethiopia that ends at a sea? What about in an inland lake? Do you know any river which disappears in a dry area? So there are rivers that also end in an inland lakes, or in swamps, or which disappear in dry areas.

You may well know that a river has a long course from its source to its mouth. It has three different parts in its course.

The three parts are:

A. The upper course

B. The middle course

C. The lower course

What do you think will be the speed of the flow of water at the upper course? It will be very fast. It is not only fast but also powerful. As a result it erodes the land greatly. The river erodes the land greatly and forms V-shaped valleys, waterfall and gorges. Can you name any valley, waterfall or gorges in Ethiopia?

As a river continues to flow in its long journey, the power and the speed decreases slowly. As a result the river valleys

become wide and large. The amount of water increases at this stage. We call this part of a river the middle course. Do you know why the river at this part has a big amount of water? In this middle course the river is joined by many tributaries. This makes it big in amount.

The last part of a river course is known as the lower course of a river. Can you say anything about the speed of the flowing river at this part? It is slower compared with the upper and the middle course. The river at this course doesn't flow in a straight course but forms a bend. This bending of a river caused by erosion and deposition is called a meander.

The formation of meander results in what we call an OX-Bow lakes, Flood plain, alluvium. Because the river at this course is flowing slowly, a wide bend is formed against the hard rock layer. When the power of the river at this course increases, the bend becomes narrower and narrower. Finally the meander separates from the main land forming what we call an ox-bow lake. The river in its lower course sometimes carries with it large quantities of sediments. The sediments spread over the lower part of the flat plain. Because this deposition takes place during every flood period, the plain gradually becomes a fertile region or place known as FLOOD PLAIN. Through a long period of time, SILT may be deposited to a great thickness. Under the layer of the flood plain, the silt and the sand

form what is known as the ALLUVIUM. When a river reaches the lower course which may be a sea, it deposits sediments at the mouth of the lower course. This sediment is usually made up of sand dirt, gravel, etc. If you happen to be in a plane and look down the mouth of such a river it looks like a bird's foot. This place of the mouth of a river is called DELTA. So far we have seen the river erosion and deposition in detail. We are now going to see another kind of erosion.

2. WIND EROSION AND DEPOSITION

Wind erosion is not always common to all places. It is usually great in deserts and semideserts. Do you know the difference between a desert and semidesert? A desert is an area where the yearly amount of rainfall is very little and the temperature is very high. It has usually sandy soil. Semidesert means an area where it is not like the desert, it may have rain fall and the temperature is mild.

In these areas, wind blows very greatly. Do you know why? When the wind blows it takes with it small particles and carries them away. Sometimes the wind, while carrying these particles smashes them against rocks. As a result of this action the rocks are worn out. On the other hand, , the eroded materials are carried away and deposited by the wind. A common deposition of the material carried by the wind is known as Barkhan and Sanddune.

3. EROSION AND DEPOSITION BY THE SEA

Usually wind blows strongly on the sea. Do you know why? Due to the strongly blowing wind, the water of the sea clashes against the coastland. The water overflows its Bank and spreads on the coastland with force. When the overflowed water returns back to the sea, it picks up rock particles and brings the rock to sea as sediments. As a result of this action of the water, some land features are formed along the shores. They are known as beaches, spit, bars and lagoons.

4. UNDER GROUND WATER AND ITS EROSIONAL WORK

Underground water means all the water found immediately below the surface or deep in the ground.

There are times when water flows between layers of limestone rocks. When the water flows between this rock, it erodes part of this rock. Then a hole is formed in the rock. This hole becomes larger and wider as the underground water continues to erode the layer of the rock. At last very large underground holes are formed. We call these holes CAVES. Have you ever seen caves around the river course in your village?

SPRINGS

Do you know what a spring is? Have you ever seen a spring? A spring is a place where water freely flows out from an underground source. When water comes out to the surface we say a spring is formed. You know that when rainfalls, it erodes the soil and other particles.

But, some amount of water sinks down through the porous rock layers. The water will continue to sink down until it reaches a non-porous rock. A non-porous rock is a type of rock which is hard and doesn't allow water to sink any deeper. When the water reaches this type of rock it stops. We call the porous rock permeable rock. This is because it allows water to sink in it. We call the non-porous rock impermeable rock. It is because it doesn't allow water to sink in it. A spring will occur at a point where the ends of the permeable and impermeable rock layers meet.

ARTESIAN WELLS

This is a kind of well which gives a continuous flow of water. It is usually found in low lying areas. In such places it is possible to find a permeable rock in between two layers of impermeable rocks. The two ends of permeable rocks are exposed to the surface. Remember it is only the two ends. When rain water enters the permeable rock through the two ends, this layer of rock becomes completely filled with water. If a hole is formed through the impermeable upper layer, water is forced out to the surface. This is known as an artesian well.

SUMMARY

In the first part of this unit we saw two actions that change the surface of the earth. These actions can be presented as follows:

1. The effect of temperature, frost, animal and plant action. These all factors crack and break rocks in different ways into

smaller sizes changing the surface of the earth.

2. The second action is erosion. It is the washing away of the broken rocks and particles by water. The major kind of erosion is the river water; while there are also other kinds of erosion such as wind and sea erosion.

In the last part we learnt how underground water forms caves through a long process. Finally, we have also learnt how springs and artesian wells are formed.

REVIEW QUESTIONS

I Words to Practice

1. Match the words in 'A' with one of the definitions in 'B'.

A		B
a) PERMEABLE	1.	Make of become greater in size, number, degree, etc.
b) SWAMP	2.	Curve or turn
c) SLOPE	3.	Break, be broken Violently into small pieces.

d)	EXPAND	4.	Soft wet land.
e)	INCREASE	5.	area of rising and falling ground.
f)	BEND	6.	Farther from the middle or outside.
g)	SMASH	7.	Make or becoming larger.
h)	OUTER	8.	Pass, flow or spread into every part of.

2. Try to guess the meaning of the following words with your neighbour using the note.

   A. DECREASE

   B. CLASH

   C. INNER

   D. CONTRACT

   E. IMPERMEABLE

II MULTIPLE CHOICE

Choose the answer you think is best.

1. In which place do you think erosion by frost action is common?

   A. CANADA

   B. SAUDI ARABIA

   C. ETHIOPIA

2. The place where the smaller stream or river joins the bigger one is called

   A. SOURCE B. MOUTH C. CONFLUENCE

3. If the volume of water increases in the course of a river, it is:

   A. THE UPPER COURSE

   B. THE MIDDLE COURSE

   C. THE LOWER COURSE

4. One of the following is not a feature of sea erosion,

   A. DELTA B. BEACHES C. BARS

5. The first thing that should happen for spring to be formed is:

   A. RAIN FALL B. POROUS ROCK C. NON POROUS ROCK

III TRUE/FALSE QUESTIONS

1. In hot areas the temperature decreases quickly at night.
2. The inner part of a rock layer becomes hot at daytime.
3. Some plant roots grow in the cracks of rocks and push it sideways when they grew.
4. Erosion of the running water type is common in Ethiopia.
5. The river in the lower course takes a bend. This is because it doesn't have force.

IV ANSWER THE FOLLOWING BRIEFLY

A) If you see a river on a map what three parts can you observe?

b) Do you know how a water fall is formed? Can you give an example in Ethiopia?

c) Explain the three layers of rock in the formation of artesian wells.

APPENDIX K

CLOZE TEST

SEVENTH GRADE - NOTE ON UNIT FOUR (P.4)

INSTRUCTION

The following passage has certain words missed out. Each gap in the passage stands for just ONE word that is missing. Read the passage carefully and write in the missing word. You may find clues in the passage to help you find the missing word. If you can think of more than one word that would fit into the gap, choose the one word that you think the author would have used.

What do you think will be the speed of the flow of water at the upper course? It will be very fast. It is not only ___1___ but also powerful. As ___2___ result it erodes the ___3___ greatly. The river erodes ___4___ land greatly and forms ___5___ valleys, waterfalls and gorges. ___6___ you name any valley, ___7___ or gorges in Ethiopia?

___8___ a river continues to ___9___ in its long journey, ___10___ power and the spread ___11___ slowly. As a result ___12___ river valleys become wide ___13___ large. The amount of ___14___ increase at this stage. ___15___ call this part of ___16___ river the middle course. ___17___ you know why the ___18___ at this part has ___19___ big amount of water? ___20___ this middle course the ___21___ is joined by

many ___22___ this makes it big ___23___ amount.

The last part ___24___ a river course is ___25___ as the lower course ___26___ a river can you ___27___ anything about the speed ___28___ the flowing river at ___29___ part? It is slower ___30___ with the upper and ___31___ middle course. The river ___32___ this course doesn't flow ___33___ straight course but ___34___ a bed. This bending ___35___ a river caused by ___36___ and deposition is called ___37___ meander.

The formation of___38___ results in what we___39___ an Ox-Box lakes. Food plain ___40___. Because the river at ___41___ course is flowing slowly ___42___ wide bend is formed ___43___the hard rock layer___44___ the power of the ___45___ at this course increases, ___46___ bend becomes narrower and ___47___. Finally, the meander separates ___48___ the main land forming what___49___ call on Ox- Bow lake. ___50___ river in its lower course sometimes carry with it large quantities of sediments.

APPENDIX: L

A SCALE TO MEASURE

THE ATTITUDE OF TEACHERS TOWARDS TEACHING ENGLISH

IN CONTENT CLASSROOMS

	DIRECTION: Mark with a tick (✓) what your opinion is with respect to every statement in only one of the five space.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
1	A content area teacher is obliged to help students improve their reading ability.						
2	Technical vocabulary should be introduced to students in content classes before they meet those terms in a reading passage.						
3	The responsibility of a content teacher should be to impart subject matter knowledge.						
4	Few students can learn all they need to know about how to read in six years of schooling.						
5	The sole responsibility for teaching students how to read should lie with English teachers.						
6	Knowing how to teach reading in content areas should be required for the completion of teacher training programme.						
7	Only English teachers should be responsible for teaching English in junior schools.						
8	A teacher who wants to improve students' interest in reading should show them that he or she likes to read.						

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
9	Content teacher should teach content and leave English instruction to English teacher.						
10	Content area teachers should help students learn to set purpose for reading.						
11	Every content area teacher should teach students how to read material in his or her content speciality.						
12	Content area teachers should be familiar with theoretical concepts of reading process.						

Adapted from A Reading Journal

Vol. 20 No.7 April 1977

APPENDIX: M

ANSWER KEYS FOR THE CLOZE TESTS

TEST 1

GEOGRAPHY (PAGE 1)

1.	THAT	18.	FROM	35.	EASILY
2.	THEM	19.	IS	36.	YOUR
3.	YOU	20.	OF	37.	YOU
4.	SOME	21.	IS	38.	2
5.	SCATTERED	22.	THIS	39.	KILOMETRES
6.	IN	23.	NOT	40.	THE
7.	IS	24.	AN	41.	DIRE DAWA
8.	GALAXY	25.	MILKY-WAY	42.	ON
9.	IS	26.	LOOKS	43.	KILOMETRES
10.	MILK-WAY	27.	IN	44.	ARE
11.	ARE	28.	IS	45.	IS
12.	BUT	29.	MOVE	46.	IN
13.	FIND	30.	GALAXY	47.	NEAREST
14.	ONLY	31.	IN	48.	THAN
15.	STARS	32.	THE	49.	KILOMETRES
16.	ARE	33.	BELOW	50.	MEASURE
17.	STARS	34.	DISTANCE		

TEST 2

GEOGRAPHY (PAGE 27)

1.	BY	18.	STRONG	35.	ARE
2.	LEARNED	19.	OF	36.	SOMETIMES
3.	THE	20.	ARE	37.	STRONGLY
4.	HOT	21.	SKY	38.	TOP
5.	THE	22.	TO	39.	IS
6.	THIS	23.	MAGMA	40.	A
7.	THE	24.	ONE	41.	CALDERA
8.	VOLCANO	25.	CALLED	42.	COLLECTS
9.	DURING	26.	MAY	43.	IN
10.	LAVA	27.	MANY	44.	A
11.	AND	28.	FISSURES	45.	LAKE
12.	THROWN	29.	OUT	46.	IN
13.	SOMETIMES	30.	A	47.	MOUNTAIN
14.	AND	31.	FORMED	48.	A
15.	FLOWS	32.	ONE	49.	AGAIN
16.	THE	33.	IS	50.	SMALL
17.	TIME	34.	COME		

TEST 3

GEOGRAPHY (PP. 35-38)

1.	PICK	18.	WHERE	35.	VERY
2.	AND	19.	RIVER	36.	THE
3.	AREAS	20.	IS	37.	V-SHAPED
4.	STREAM	21.	MOUTH	38.	GORGES
5.	THE	22.	THE	39.	THE
6.	MAY	23.	THIS	40.	AND
7.	MARSH	24.	A	41.	WATER
8.	PATH	25.	IN	42.	BECAUSE
9.	DOWN	26.	IN	43.	MAIN
10.	SOURCE	27.	MAY	44.	COURSE
11.	THE	28.	A	45.	ITS
12.	SLOPE	29.	PARTS	46.	BENDING
13.	THE	30.	ITS	47.	CALLED
14.	OR	31.	MOUTH	48.	FORMED
15.	SMALLER	32.	THE	49.	A
16.	JOIN	33.	THESE	50.	RATHER
17.	CALLED	34.	UPPER		

APPENDIX N

RAW SCORES OF THE CLOZE TESTS
(GEOGRAPHY)

Code No.	Test1 Mark	Test2 Mark	Test3 Mark	Test4 Mark
1		12	10	
2	20	14	14	
3	12	22	20	
4	4	26	8	
5	16	9	14	
6	10	10	20	
7	12	8	12	
8	20	6	14	
9	10	14	22	
10	14	20	32	
11	6	18	16	
12	58	16	14	
13	12	14	14	
14	26	12	20	
15	12	8	10	
16	20	16	44	
17	16	20	24	
18	20	18	12	
19	16	16	10	
20	6	16	16	
21	20	12	26	
22	4	20	40	
23	18	10	14	
24	16	8	16	
25	14	14	16	
26	8	20	10	
27	12	16	8	
28	18	24	22	
29	14	14	28	
30	12	20	12	
31	20	18	44	
32	6	22	22	
33	24	10	8	
34	18	8	18	
35	12	16	10	
36	16	10	26	
37	22	22	20	
38	18	18	40	
39	16	14	18	
40	12	12	12	
41	14	26	42	
42	8	30	22	
43	16	14	8	
44	24	16	12	
45	18	8	8	
46	16	12	16	
47	14	20	14	
48	24	10	24	
49	26	14	18	
50	14	26	10	
51	9	32	16	
52	8	20	20	

53	6	18	14
54	14	14	18
55	10	12	8
56	18		12
57	8		20
58	10		16
59	14		14
60	16		20
61			10
62			18
63			24
64			20
65			14
TOTAL	915	875	1174
MEAN	15.25	15.90909	18.06153
GRAND MEAN		16.40687	

APPENDIX O

ANSWER KEYS FOR THE CLOZE TESTS

TEST 1

(SCIENCE) (PAGE 44)

1.	OF	18.	FARMS	35.	OF
2.	WAS	19.	CROPS	36.	FOR
3.	CROPS	20.	FEW	37.	EUROPE
4.	CAUSED	21.	HE	38.	THIRD
5.	THE	22.	NUMBERS	39.	EXAMPLE
6.	WAYS	23.	FOREIGN	40.	LIVE
7.	A	24.	LAND	41.	IT
8.	ORIGINAL	25.	OF	42.	THE
9.	WAYS	26.	THIS	43.	NORTH
10.	THE	27.	ANIMAL	44.	AFRICA
11.	WE	28.	EXIST	45.	LAND
12.	THESE	29.	WILL	46.	THE
13.	WILL	30.	SMALL	47.	FOR
14.	IN	31.	FEEDERS	48.	AS
15.	ENVIRONMENT	32.	AREAS		
16.	HOW	33.	TO		
17.	REDUCE	34.	OF		

TEST 2

SCIENCE (PP. 70-71)

1. INSIDE	18. TRUE	35. THE
2. YOUNG	19. BORNE	36. ARE
3. TO	20. DEVELOPED	37. PUBERTY
4. ON	21. HAS	38. AVERAGE
5. ROUGHLY	22. IS	39. IS
7. TOADS	23. A	40. AND
8. IN	24. KNOWN	41. HOWEVER
9. WE	25. IN	42. COULD
10. BORN	26. OF	43. 18
11. INSECTS	27. AN	44. 10
12. THEY	28. ON	45. MALE
13. LAY	29. ARMPITS	46. IN
14. BECAME	30. ORGANS	47. TESTICLES
15. A	31. A	48. BAG
16. THEY	32. WILL	49. SCROTUM
17. INCLUDING	33. HER	50. TRANSFERRED

TEST 3

SCIENCE (PP. 149-51)

1.	OF	18.	PREVENTED	35.	RAIN
2.	THESE	19.	WASHED	36.	BARE
3.	MORE	20.	IN	37.	QUICKLY
4.	OF	21.	WELLS	38.	GOOD
5.	FORM	22.	WATER	39.	MANY
6.	MEN	23.	THE	40.	DID
7.	THE	24.	TO	41.	IN
8.	ONCE	25.	SOIL	42.	AND
9.	HAD	26.	ENVIRONMENTS	43.	LEAVES
10.	FOR	27.	THE	44.	TO
11.	AND	28.	THE	45.	IT
12.	OF	29.	AND	46.	BECAME
13.	WILD	30.	WERE	47.	TO
14.	THE	31.	AND	48.	TO
15.	LEAVES	32.	NEW	49.	RAISING
16.	THE	33.	AND	50.	NOW
17.	THE	34.	FOR		

APPENDIX P

RAW SCORES OF THE CLOZE TESTS
(SCIENCE)

Code No.	Test1 Mark	Test2 Mark	Test3 Mark
1	6	12	18
2	8	14	10
3	4	20	16
4	10	22	20
5	12	16	8
6	6	12	10
7	8	8	20
8	12	6	12
9	14	10	16
10	8	12	20
11	12	14	22
12	16	16	18
13	8	22	14
14	6	14	6
15	10	12	20
16	12	8	10
17	8	6	8
18	6	20	20
19	16	12	10
20	14	14	16
21	10	8	18
22	20	20	22
23	24	12	24
24	16	18	8
25	18	16	10
26	6	10	16
27	8	14	10
28	10	20	8
29	12	22	18
30	6	14	10
31	10	18	22
32	12	6	12
33	14	10	16
34	20	22	8
35	18	18	10
36	14	24	12
37	8	20	18
38	14	12	20
39	16	18	12
40	16	10	10
41	20	16	20
42	10	16	10
43	12	14	22
44	8	20	18
45	12	10	16
46	14	8	14
47	6	6	20

48	24	10	24
49	16	16	18
50	12	22	18
51	6	18	20
52	18	14	14
53	20	20	16
54	12	18	20
55	6	16	14
56	12	10	10
57	18	12	6
58		18	20
59		20	14
60			12
61			14
Total	688	868	916
Mean	12.07017	14.71186	15.01639
Grand Mean	13.93281		

ANALYSIS OF THE STUDENTS' RESPONSES OF THE QUESTIONNAIRE

	5		4		3		2		1				
Questions	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%	Total	%	Mean
1.1	28	37.33333	20	26.66666	10	13.33333	11	14.66666	6	8	75	100	3.706666
1.2	24	32	35	46.66666	9	12	6	8	1	1.333333	75	100	4
1.3	40	53.33333	16	21.33333	8	10.66666	4	5.333333	7	9.333333	75	100	4.04
1.4	27	36	20	26.66666	16	21.33333	10	13.33333	2	2.666666	75	100	3.8
1.5	59	78.66666	9	12	5	6.666666	2	2.666666	0	0	75	100	4.666666
1.6	37	49.33333	26	34.66666	8	10.66666	3	4	1	1.333333	75	100	4.266666
2.1	20	26.66666	35	46.66666	6	8	10	13.33333	4	5.333333	75	100	3.76
2.2	16	21.33333	34	45.33333	12	16	8	10.66666	5	6.666666	75	100	3.64
2.3	12	16	18	24	12	16	25	33.33333	8	10.66666	75	100	3.013333
2.4	15	20	14	18.66666	10	13.33333	23	30.66666	13	17.33333	75	100	2.933333
2.5	13	17.33333	17	22.66666	5	6.666666	30	40	10	13.33333	75	100	2.906666
2.6	12	16	13	17.33333	8	10.66666	27	36	15	20	75	100	2.733333
2.7	8	10.66666	10	13.33333	13	17.33333	30	40	14	18.66666	75	100	2.573333
2.8	9	12	5	6.666666	10	13.33333	20	26.66666	31	41.33333	75	100	2.213333
2.9	9	12	9	12	13	17.33333	30	40	14	18.66666	75	100	2.586666
2.10	14	18.66666	8	10.66666	9	12	29	38.66666	15	20	75	100	2.693333
2.11	9	12	10	13.33333	7	9.333333	26	37.33333	21	28	75	100	2.44
2.12	10	13.33333	7	9.333333	10	13.33333	26	34.66666	22	29.33333	75	100	2.426666
2.13	5	6.666666	3	4	9	12	30	40	28	37.33333	75	100	2.026666
2.14	4	5.333333	8	10.66666	16	21.33333	27	36	20	26.66666	75	100	2.32
2.15	12	16	38	50.66666	8	10.66666	12	16	5	6.666666	75	100	3.533333
2.16	20	26.66666	33	44	5	6.666666	8	10.66666	9	12	75	100	3.626666
2.17	30	40	20	26.66666	8	10.66666	9	12	8	10.66666	75	100	3.733333
2.18	30	40	32	42.66666	13	17.33333	0	0	0	0	75	100	4.226666
2.19	34	45.33333	25	33.33333	4	5.333333	5	6.666666	7	9.333333	75	100	3.986666
2.20	25	33.33333	29	38.66666	10	13.33333	10	13.33333	1	1.333333	75	100	3.893333
3.1	20	26.66666	19	25.33333	7	9.333333	20	26.66666	9	12	75	100	3.28
3.2	21	28	15	20	9	12	19	25.33333	11	14.66666	75	100	3.213333
3.3	21	28	25	33.33333	10	13.33333	15	20	4	5.333333	75	100	3.586666
3.4	20	26.66666	20	26.66666	13	17.33333	15	20	7	9.333333	75	100	3.413333
3.5	7	9.333333	17	22.66666	6	8	27	36	18	24	75	100	2.573333
3.6	6	8	12	16	7	9.333333	30	40	20	26.66666	75	100	2.386666
3.7	37	49.33333	14	18.66666	9	12	6	8	9	12	75	100	3.853333
3.8	26	34.66666	30	40	6	8	5	6.666666	8	10.66666	75	100	3.813333
3.9	17	22.66666	22	29.33333	6	8	24	32	6	8	75	100	3.266666
3.10	27	36	13	17.33333	10	13.33333	14	18.66666	11	14.66666	75	100	3.413333
3.11	6	8	10	13.33333	5	6.666666	30	40	24	32	75	100	2.253333
3.12	8	10.66666	6	8.666666	8	10.66666	25	33.33333	29	38.66666	75	100	2.173333
3.13	29	38.66666	32	42.66666	4	5.333333	6	8	4	5.333333	75	100	4.013333
3.14	21	28	37	49.33333	6	8	4	5.333333	7	9.333333	75	100	3.813333
3.15	12	16	10	13.33333	24	32	23	30.66666	6	8	75	100	2.986666
3.16	0	0	12	16	15	20	19	25.33333	29	38.66666	75	100	2.133333
3.17	40	53.33333	35	46.66666	0	0	0	0	0	0	75	100	4.533333
3.18	15	20	13	17.33333	11	14.66666	13	17.33333	23	30.66666	75	100	2.786666

APPENDIX Q (1)

FINDINGS OF THE RESPONSES OF THE STUDENTS ABOUT

THE LAYOUT OF THE TEXTS IN (%)

NO.	ITEM	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	M
1.1	I like the cover design of Geography text	37.3	26.6	13.3	14.6	3	3.7
1.2	I like the cover design of Science text	32	46.6	12	8	1.3	4.0
1.3	The words of Geography Text are legible	53.3	21.3	10.6	5.3	9.3	4.04
1.4	The words of Science Text are legible	36.0	26.6	21.3	13.3	2.6	3.8
1.5	Drawing, pictures, maps, etc in Geography are helpful to understand the text	78	12	6.6	2.6	0	4.6
1.6	Drawing, pictures, maps, etc in Science text are helpful to understand the text	49.3	34.6	10.6	4	1.3	4.26

APPENDIX Q (2)

FINDINGS OF THE ATTITUDE OF STUDENTS TOWARDS READING AND UNDERSTANDING SUBJECT AREA TEXTBOOKS IN (%)

No.	ITEM	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	M
2.1	I always read Geography text.	26.6	46.6	8	13.3	5.3	3.76
2.2	I always read Science Text.	21.33	45.33	16	10.66	6.66	3.64
2.3	Even if I read it, I can't understand the Geography Text.	16	24	16	33.33	10.66	3.01
2.4	Even if I read Science Text, I can't understand it.	20	18.66	13.33	30.66	17.33	2.93
2.5	I usually read Geography Text when I am given a homework.	17.33	22.66	6.66	40.0	13.33	2.90
2.6	I usually read Science Text when I am given a homework.	16.0	17.33	10.66	36	20	2.73
2.7	I never read Geography Text.	10.6	13.3	17.3	40	18.6	2.57
2.8	I never read Science Text.	12	6.6	13.3	26.6	41.33	2.21
2.9	I don't usually read Geography text because I am weak in English.	12	12	17.3	40	18.6	2.58
2.10	I don't usually read Science text because I am weak in English.	18.6	10.6	12	38.6	20	2.69
2.11	I don't usually read Geography text because the words are difficult to understand.	12	13.3	9.3	37.3	28	2.44
2.12	I don't usually read Science test because the words are difficult to understand	13.33	9.33	13.3	34.6	29.3	2.42
2.13	Even if I start reading Geography text, when I come across a new word, I stop reading the text.	6.66	4	12	40	37.33	2.02

		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	M
2.14	Even if I start reading Science text, when I come across a new word, I stop reading the text	5.33	10.66	21.33	36.00	26.66	2.32
2.15	When I start reading Geography text, if I come across a new word, I usually try to guess the meaning	16	50.66	10.6	16	6.66	3.53
2.16	When I start reading Science text, if I come across a new word, I usually try to guess the meaning	26.6	44	6.66	10.6	12	3.62
2.17	When reading Geography text, if I find new words, I usually try to understand the meaning from the context	40	26.66	10.66	12	10.66	3.73
2.18	When reading Science text, if I find new words, I usually try to understand the meaning from the context	40	42.66	17.33	0	0	4.22
2.19	While reading Geography and Science texts, if I get a new word, I usually refer the meaning in a dictionary	45.33	33.33	5.33	6.66	9.33	3.98
2.20	While reading Geography and Science texts, if I get new words, I usually ask my teachers for the meaning of the words	33.33	38.66	13.33	43.33	1.33	3.89

APPENDIX Q (3)

FINDINGS ABOUT THE ASSISTANCE STUDENTS GET FROM CONTENT AREA TEACHERS: IN REFERENCE TO GEOGRAPHY AND SCIENCE TEACHERS IN (%)

No.	ITEM	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	M
3.1	I usually read Geography text before the teacher explains it.	26.66	25.33	9.33	26.66	12	3.28
3.2	I usually read Science text before the teacher explains it.	28	20	12	25.33	14.66	3.21
3.3	I always read Geography text after the teacher's explanation.	28	33.33	13.33	20	5.33	3.58
3.4	I always read Science text after the teacher's explanation.	26.66	26.66	17.33	20	9.33	3.14
3.5	I usually understand Geography text when reading it before the teacher's explanation.	9.33	22.66	8	36	24	2.57
3.6	I usually understand Science text when reading it before the teacher's explanation.	8	16	9.33	40	26.66	2.38
3.7	I do understand Geography text when reading it after the teacher's explanation.	49.33	18.66	12	8	12	3.85
3.8	I do understand Science text when reading it after the teacher's explanation.	34.66	40	8	6.66	10.66	3.81
3.9	Our Geography teacher always gives us notes.	22.66	29.33	8	32	8	3.26
3.10	Our Science teacher always gives us notes.	36	17.33	13.33	18.66	14.66	3.41

		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	M
3.11	Because the Geography teacher gives us notes, there is no need for me to read the text.	8	13.33	6.66	40	32	2.25
3.12	Because the Science teacher gives us notes, there is no need for me to read the text.	10.66	66	10.66	33.33	38.66	2.17
3.13	When I am given homeworks on Geography, I usually do it by reading the notes given to us by our teacher.	38.66	42.66	5.33	8	5.33	4.01
3.14	When I am given homework on Science, I usually do it by reading the note given to us by our teacher.	28	49.33	8	5.33	9.33	3.81
3.15	Our Geography teacher always teaches us from the notes he prepared.	16	13.33	32	30.66	8	2.98
3.16	Our Science teacher usually teaches us from the notes he prepared	0	16	20	25	38.66	2.13
3.17	Our Geography teacher always tells us meanings of some words or sentences in Amharic.	53.33	46.66	0	0	0	4.53
3.18	Our Science teacher always tells us meanings of some words or sentences in Amharic.	20	17.33	14.66	17.33	30.66	2.78

APPENDIX R

DESCRIPTION OF ANALYSIS OF READABILITY CHECK LIST (GEOGRAPHY)

V1

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	1	5.3	5.3
poor	2	4	21.1	26.3
adequate	3	5	26.3	52.6
good	4	8	42.1	94.7
excellent	5	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V2

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	21.1	21.1
adequate	3	5	26.3	47.4
good	4	9	47.4	94.7
not applicable	6	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V3

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	2	6	31.6	31.6	31.6
adequate	3	7	36.8	36.8	68.4
good	4	3	15.8	15.8	84.2
excellent	5	2	10.5	10.5	94.7
not applicable	6	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

Valid cases 19 Missing cases 0

V4

101

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	2	10.5	10.5
poor	2	1	5.3	15.8
adequate	3	7	36.8	52.6
good	4	7	36.8	89.5
excellent	5	1	5.3	94.7
not applicable	6	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V5

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	21.1	21.1
adequate	3	11	57.9	78.9
good	4	2	10.5	89.5
excellent	5	1	5.3	94.7
not applicable	6	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V6

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	2	8	42.1	42.1	42.1
adequate	3	4	21.1	21.1	63.2
good	4	5	26.3	26.3	89.5
excellent	5	1	5.3	5.3	94.7
not applicable	6	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

Valid cases 19 Missing cases 0

V7

Value Label	Value	Frequency	Percent	Cum Percent
	1	1	5.3	5.3
	2	5	26.3	31.6
	3	6	31.6	63.2
	4	5	26.3	89.5
	5	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V8

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	21.1	21.1
adequate	3	7	36.8	57.9
good	4	5	26.3	84.2
excellent	5	3	15.8	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V9

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	1	5.3	5.3
poor	2	4	21.1	26.3
adequate	3	8	42.1	68.4
good	4	5	26.3	94.7
excellent	5	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V10

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.8	15.8
adequate	3	3	15.8	31.6
good	4	8	42.1	73.7
excellent	5	5	26.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V11

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.8	15.8
adequate	3	3	15.8	31.6
good	4	6	31.6	63.2
excellent	5	7	36.8	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V12

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	6	31.6	31.6
adequate	3	6	31.6	63.2
good	4	7	36.8	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V13

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	1	5.3	5.3
poor	2	5	26.3	31.6
adequate	3	5	26.3	57.9
good	4	8	42.1	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V14

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	1	5.3	5.3
poor	2	4	21.1	26.3
adequate	3	6	31.6	57.9
good	4	6	31.6	89.5
excellent	5	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V15

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	2	10.5	10.5
adequate	3	7	36.8	47.4
good	4	5	26.3	73.7
excellent	5	4	21.1	94.7
not applicable	6	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V16

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	1	5.3	5.3
adequate	3	6	31.6	36.8
good	4	9	47.4	84.2
excellent	5	3	15.8	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V17

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	2	10.5	10.5
adequate	3	7	36.8	47.4
good	4	7	36.8	84.2
excellent	5	3	15.8	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V18

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	21.1	21.1
adequate	3	4	21.1	42.1
good	4	6	31.6	73.7
excellent	5	5	26.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V19

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	1	5.3	5.3
adequate	3	8	42.1	47.4
good	4	9	47.4	94.7
excellent	5	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V20

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	21.1	21.1
adequate	3	5	26.3	47.4
good	4	7	36.8	84.2
excellent	5	3	15.8	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V21

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	2	10.5	10.5
adequate	3	11	57.9	68.4
good	4	6	31.6	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V22

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	8	42.1	42.1
adequate	3	4	21.1	63.2
good	4	4	21.1	84.2
excellent	5	1	5.3	89.5
not applicable	6	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V23

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	1	5.3	5.3
adequate	3	4	21.1	26.3
good	4	8	42.1	68.4
excellent	5	6	31.6	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V24

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	9	47.4	47.4
adequate	3	5	26.3	73.7
good	4	3	15.8	89.5
not applicable	6	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V25

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.8	15.8
adequate	3	10	52.6	68.4
good	4	2	10.5	78.9
excellent	5	2	10.5	89.5
not applicable	6	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V26

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.8	15.8
adequate	3	2	10.5	26.3
good	4	12	63.2	89.5
excellent	5	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V27

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	2	10.5	10.5
adequate	3	9	47.4	57.9
good	4	6	31.6	89.5
excellent	5	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V28

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	2	10.5	10.5
adequate	3	8	42.1	52.6
good	4	8	42.1	94.7
excellent	5	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V29

Value Label	Value	Frequency	Percent	Cum Percent
adequate	3	9	47.4	47.4
good	4	8	42.1	89.5
excellent	5	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V30

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	5	26.3	26.3
adequate	3	4	21.1	47.4
good	4	8	42.1	89.5
excellent	5	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V31

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	1	5.3	5.3
adequate	3	8	42.1	47.4
good	4	6	31.6	78.9
excellent	5	4	21.1	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V32

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	2	10.5	10.5
adequate	3	5	26.3	36.8
good	4	10	52.6	89.5
excellent	5	2	10.5	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V33

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.8	15.8
adequate	3	9	47.4	63.2
good	4	6	31.6	94.7
excellent	5	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V34

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	2	10.5	10.5
adequate	3	7	36.8	47.4
good	4	4	21.1	68.4
excellent	5	5	26.3	94.7
not applicable	6	1	5.3	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

V35

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	1	5.3	5.3
adequate	3	7	36.8	42.1
good	4	8	42.1	84.2
excellent	5	3	15.8	100.0
	Total	19	100.0	100.0

Valid cases 19 Missing cases 0

APPENDIX R(1)

FINDING OF THE READABILITY CHECKLIST FOR GEOGRAPHY IN (%)

V	UNDERSTANDABILITY	Excellent	Good	Adequate	Poor	Un-acceptable	M	S
1	Are the assumptions about the students' vocabulary knowledge appropriaTe?	5.3	42.1	26.3	21.1	5.3	3.21	1.03
2	Are the assumptions about the students' prior knowledge of the content area appropriate?		47.4	26.3	21.1	5.3	3.28	0.83
3.	Are the assumptions about what the students could have learned in practice appropriate?	10.5	15.8	36.8	31.6	5.3	3.06	1.00
4.	Does the teacher's guide provide the teacher with ways to develop and review what the students know and what he has experienced?	5.3	36.8	36.8	5.3	10.5	3.22	1.06
5.	Are new concepts clearly linked to the students prior knowledge or to their experiential background?	5.3	10.5	57.9	21.1	5.3	3.00	0.77
6.	Does the text introduce abstract concepts by accompanying them with many concrete examples?	5.3	26.3	21.1	42.1	5.3	2.94	1.0

		Excellent	Good	Adequate	Poor	Unacceptable	M	S
7.	Does the text introduce new conCepts one at a time with sufficient number of examples for each one?	10.5	26.3	31.6	26.3	5.3	3.11	1.10
8.	Are definitions understandable and at a lower leveL of abstractions so that they are more concrete?	15.8	26.3	36.8	21.1		3.37	1.01
9.	Is the level of sentence complexity appropriate for the students?	5.3	26.3	42.1	21.1	5.3	3.05	0.97
10.	Are the main ideas of paragraphs, chapters and subsections clearly stated?	26.3	42.1	15.8	15.8		3.79	1.03
11.	Does the text avoid irrelevant details?	36.8	31.6	15.8	15.8		3.89	1.10
12.	Does the text clearly state important complex relationships (e.g., causality, conditionality, etc.) rather than always expecting the reader to get them from the context?		36.8	31.6	31.6		3.05	0.85
13.	Does the teacher's guide provide lists of accessible resources containing alternative reading for the very poor or advanced readers?		42.1	26.3	26.3	5.3	3.05	0.97
14.	Is the readability level appropriate to the class?	10.5	31.6	31.6	21.1	5.3	3.21	1.08

APPENDIX R (2)a

FINDINGS OF THE READABILITY
CHECKLIST FOR GEOGRAPHY IN (%)

V	ITEM	Excellent	Good	Adequate	Poor	Unacceptable	M	S
	LEARNABILITY/ORGANIZATION							
15	Is an introduction provided for in each chapter?	21.1	26.3	36.8	10.5	5.3	3.61	0.98
16	Is there a clear and simple organization pattern relating the chapters to each other?	15.8	47.4	31.6	5.3		3.74	0.81
17	Does each chapter or unit have a clear, explicit and simple organizational structure?	15.8	36.8	36.8	10.5		3.58	0.90
18	Does the text include resources such as an index, glossary, and a table of contents?	26.3	31.6	21.1	21.1		3.63	1.12
19	Do questions and activities draw attention to organizational pattern of the material (e.g., chronological, cause and effect,spatial, topical, etc?)	5.3	47.4	42.1	5.3		3.53	0.70
20	Do teaching aids interrelated well with the text reinforcement?	15.8	36.8	26.3	21.1		3.47	1.02

APPENDIX R (2)b

FINDINGS OF THE READABILITY CHECKLIST FOR GEOGRAPHY IN (%)

V	ITEM	Excellent	Good	Adequate	Poor	Un-acceptable	M	S
	LEARNABILITY/REINFORCEMENT							
21	Does the text provide opportunities for students to practice using new concepts or ideas?		31.6	57.9	10.5		3.21	0.63
22	Are there summaries at the end of each units?	5.3	21.1	21.1	42.1	10.5	2.88	0.99
23	Does the text provide adequate diagramatic aids such as maps, graphs, illustrations, etc to reinforce concepts?	31.6	42.1	21.1	5.3		4.00	0.88
24	Are there adequate suggestions for useable supplementary activities such as field trip, cite inspections, group observations, etc?		15.8	26.3	47.4	10.5	2.65	0.79
25	Are these activities prepared according to abilities of students in a class?	10.5	10.5	52.6	15.8	10.5	3.18	0.88
26	Are direct questions provided for the students' self review?	10.5	63.2	10.5	15.8		3.68	0.89
27	Do some of the questions encourage the students to draw inferences or conclusions?	10.5	31.6	47.4	10.5		3.42	0.89
28	Are there discussion questions which encourage creative thinking?	5.3	42.1	42.1	10.5		3.42	0.77
29	Are questions clearly worded?	10.5	42.1	47.4			3.63	0.68

APPENDIX R (2)c

FINDINGS OF THE READABILITY

CHECKLIST FOR GEOGRAPHY IN (%)

V	ITEM	Excellent	Good	Adequate	Poor	Un-acceptable	M	S
	LEARNABILITY/MOTIVATION							
30	Does the teacher guide provide introductory activities?		89.5	47.4	26.3		3.37	1.01
31	Are unit titles and subheadings concrete, meaningful, or interesting?	21.1	31.6	42.1	5.3		3.68	0.89
32	Is the writing style of the text appealing or attractive to the students?	10.5	52.6	26.3	10.5		3.63	0.83
33	Are the activities motivating? Will they make the students want to pursue the topic further?	5.3	31.6	47.4	15.8		3.26	0.81
34	Does the book clearly show how the knowledge being learned might be used by the learner in the future?	26.3	21.1	36.8	10.5	5.3	3.67	1.03
35	Are the cover, format, print size and pictures appealing or attractive to the students?	15.8	42.1	36.8	5.3		3.68	0.82

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	6	30.0	30.0
adequate	3	5	25.0	55.0
good	4	6	30.0	85.0
excellent	5	3	15.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V5

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	6	30.0	30.0
adequate	3	8	40.0	70.0
good	4	4	20.0	90.0
excellent	5	2	10.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V6

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	7	35.0	35.0
adequate	3	6	30.0	65.0
good	4	6	30.0	95.0
excellent	5	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V4

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	6	30.0	30.0
adequate	3	5	25.0	55.0
good	4	6	30.0	85.0
excellent	5	3	15.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V5

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	6	30.0	30.0
adequate	3	8	40.0	70.0
good	4	4	20.0	90.0
excellent	5	2	10.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V6

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	7	35.0	35.0
adequate	3	6	30.0	65.0
good	4	6	30.0	95.0
excellent	5	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V7

Value Label	Value	Frequency	Percent	Cum Percent
	2	6	30.0	30.0
	3	7	35.0	65.0
	4	7	35.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V8

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	11	55.0	55.0
adequate	3	6	30.0	85.0
good	4	3	15.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V9

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	1	5.0	5.0
poor	2	9	45.0	50.0
adequate	3	6	30.0	80.0
good	4	4	20.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V10

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	9	45.0	45.0
adequate	3	2	10.0	55.0
good	4	8	40.0	95.0
excellent	5	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V11

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	9	45.0	45.0
adequate	3	3	15.0	60.0
good	4	5	25.0	85.0
excellent	5	3	15.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V12

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	9	45.0	45.0
adequate	3	10	50.0	95.0
good	4	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V15

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	2	10.0	10.0
poor	2	8	40.0	50.0
adequate	3	5	25.0	75.0
good	4	2	10.0	85.0
excellent	5	1	5.0	90.0
not applicable	6	2	10.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V16

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	6	30.0	30.0
adequate	3	9	45.0	75.0
good	4	5	25.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V17

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	7	35.0	35.0
adequate	3	5	25.0	60.0
good	4	6	30.0	90.0
excellent	5	2	10.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V16

Value Label	Value	Frequency	Percent	Cum Percent
Poor	2	7	35.0	35.0
Adequate	3	9	45.0	80.0
Good	4	3	15.0	95.0
Excellent	5	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V17

Value Label	Value	Frequency	Percent	Cum Percent
Poor	2	11	55.0	55.0
Adequate	3	5	25.0	80.0
Good	4	3	15.0	95.0
Excellent	5	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V18

Value Label	Value	Frequency	Percent	Cum Percent
Poor	2	5	25.0	25.0
Adequate	3	5	25.0	50.0
Good	4	7	35.0	85.0
Excellent	5	3	15.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V19

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	20.0	20.0
adequate	3	10	50.0	70.0
good	4	6	30.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V20

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	1	5.0	5.0
poor	2	5	25.0	30.0
adequate	3	5	25.0	55.0
good	4	9	45.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V21

Value Label	Value	Frequency	Percent	Cum Percent
unacceptable	1	2	10.0	10.0
poor	2	2	10.0	20.0
adequate	3	7	35.0	55.0
good	4	7	35.0	90.0
excellent	5	2	10.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V22

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	1	5.0	5.0
adequate	3	8	40.0	45.0
good	4	7	35.0	80.0
excellent	5	4	20.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V23

Value Label	Value	Frequency	Percent	Cum Percent
adequate	3	6	30.0	30.0
good	4	9	45.0	75.0
excellent	5	5	25.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V24

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	20.0	20.0
adequate	3	6	30.0	50.0
good	4	7	35.0	85.0
excellent	5	2	10.0	95.0
not applicable	6	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V25

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	8	40.0	40.0
adequate	3	7	35.0	75.0
good	4	3	15.0	90.0
excellent	5	1	5.0	95.0
not applicable	6	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V26

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	4	20.0	20.0
adequate	3	7	35.0	55.0
good	4	8	40.0	95.0
excellent	5	1	5.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V27

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	2	5	25.0	25.0	25.0
adequate	3	8	40.0	40.0	65.0
good	4	5	25.0	25.0	90.0
excellent	5	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Valid cases 20 Missing cases 0

V28

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.0	15.0
adequate	3	9	45.0	60.0
good	4	5	25.0	85.0
excellent	5	3	15.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing Cases 0

V29

Value label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.0	15.0
adequate	3	9	45.0	60.0
good	4	7	35.0	95.5
excellent	5	1	5.0	100.0
	Total	20	100.0	100.0

Valid Cases 20 Missing cases 0

V30

Value label	Value	Frequency	Percent	Cum Percent
poor	2	6	30.0	30,0
adequate	3	6	30.0	60.0
good	4	5	25.0	85.0
excellent	5	1	5.0	90.0
not applicable	6	2	10.0	100.0
	Total	20	100.0	100.0

Valid Cases 20 Missing cases 0

V31

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	3	15.0	15.0
adequate	3	10	50.0	65.0
good	4	7	35.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V32

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	11	55.0	55.0
adequate	3	6	30.0	85.0
good	4	3	15.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V33

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	7	35.0	35.0
adequate	3	5	25.0	60.0
good	4	6	30.0	90.0
excellent	5	2	10.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V34

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	5	25.0	25.0
adequate	3	7	35.0	60.0
good	4	6	30.0	90.0
excellent	5	2	10.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

V35

Value Label	Value	Frequency	Percent	Cum Percent
poor	2	6	30.0	30.0
adequate	3	5	25.0	55.0
good	4	5	25.0	80.0
excellent	5	4	20.0	100.0
	Total	20	100.0	100.0

Valid cases 20 Missing cases 0

APPENDIX S(1)

FINDINGS OF THE READABILITY
CHECKLIST FOR SCIENCE IN (%)

V	ITEM	Excellent	Good	Adequate	Poor	Un-acceptable	M	S
	UNDERSTANDABILITY							
1	Are the assumptions about the students' vocabulary knowledge appropriate?		35.0	25.0	40.0		2.95	0.89
2	Are the assumptions about the students' prior knowledge of this content area appropriate?		25.0	45.0	30.0		2.95	0.76
3	Are the assumptions about what the students could have learned in practice appropriate?	5.0	25.0	30.0	40.0		2.95	0.94
4	Does the teacher's guide provide the teacher with ways to develop and review what the students know and what he has experienced?	15.0	30.0	25.0	30.0		3.30	1.08
5	Are new concepts clearly linked to the students prior knowledge or to their experiential background?	10.0	20.0	40.0	30.0		3.10	0.97
6	Does the text introduce abstract concepts by accompanying them with many concrete examples?	5.0	30.0	30.0	35.0		3.05	0.94
7	Does the text introduce new concepts one at a time with sufficient number of examples for each one?		35.0	35.0	30.0		3.08	0.83

		Excellent	Good	Adequate	Poor	Unacceptable	M	S
8	Are definitions understandable and at a lower level of abstractions so that they are more concrete?		15.0	30.0	55.0		2.60	0.75
9	Is the level of sentence complexity appropriate for the students?		20.0	30.0	45.0	5.0	2.65	0.88
10	Are the main ideas of paragraphs, chapters and subsections clearly stated?	5.0	40.0	10.0	45.0		3.05	1.05
11	Does the text avoid irrelevant details?	15.0	25.0	15.0	45.0			1.17
12	Does the text clearly state important complex relationships (e.g., causality, conditionality, etc.) rather than always expecting the reader to get them from the context?		5.0	50.0	45.0		2.60	0.60
13	Does the teacher's guide provide lists of accessible resources containing alternative readings for the very poor or advanced reader?	5.0	10.0	25.0	40.0	10.0	2.56	1.04
14	Is the readability level appropriate to the class?		25.0	45.0	30.0		2.95	0.76

APPENDIX S(2)a

FINDINGS OF READABILITY

CHECKLIST FOR SCIENCE IN (%)

V	ITEMS	Excellent	Good	Adequate	Poor	Un-acceptable	M	S
	LEARNABILITY/ORGANIZATION							
15	Is an introduction provided for in each chapter?	10.0	30.0	25.0	35.0		3.15	1.04
16	Is there a clear and simple organization pattern relating the chapters to each other?	5.0	15.0	45.0	35.0		2 90	0.[illegible]
17	Does each chapter or unit have a clear explicit and simple organizational structure?	5.0	15.0	25.0	55.0		2.70	0.99
18	Does the text include resources such as an index, glossary and a table of contents?	15.0	35.0	25.0	25.0		3.40	1.05
19	Do questions and activities draw attention to organizational pattern of the material(i.e., chronological, cause and effect, spatial, topical, etc.?)		30.0	50.0	20.0		3.10	0.72
20	Do teaching aids interrelated well with the text reinforcement?		45.0	25.0	25.0	5.0	3.10	0.97

APPENDIX S(2)b

FINDINGS OF THE READABILITY CHECKLIST FOR SCIENCE IN (%)

V	ITEMS	Excellent	Good	Adequate	Poor	Unacceptable	M	S
	LEARNABILITY/REINFORCEMENT							
21	Does the text provide opportunities for students to practice using new concepts or ideas?	10.0	35.0	35.0	10.0	10.0	3.25	1.12
22	Are there summaries at the end of each unit ?	20.0	35.0	40.0	5.0		3.70	0.86
23	Does the text provide adequate diagramatic aids such as maps, graphs, illustrations, etc. to reinforce concepts?	25.0	45.0	30.0			3.95	0.76
24	Are there adequate suggestions for usable, supplemtary activities such as field trip, cite inspections, group observations, etc.?	10.0	35.0	30.0	20.0	50.0	3.37	0.96
25	Are these activities prepared according to abilities of students in a class?	5.0	15.0	35.0	40.0	5.0	2.84	0.90
26	Are direct questions provided for the students' self review?	5.0	40.0	35.0	20.0		3.30	0.86
27	Do some of the questions encourage the students to draw inferences or conclusions?	10.0	25.0	40.0	27.0		3.20	0.95
28	Are there discussion questions which encourage creative thinking?	15.0	25.0	45.0	15.0		3.40	0.94
29	Are questions clearly worded?	5.0	35.0	45.0	15.0		3.30	0.80

APPENDIX S(2)c

FINDINGS OF THE READABILITY CHECKLIST FOR SCIENCE IN (%)

V	ITEMS	Excellent	Good	Adequate	Poor	Un-acceptable	M	S
	LEARNABILITY/MOTIVATION							
30	Does the teacher's guide provide introductory activities?	5.0	25.0	30.0	30.0	10.0	3.06	0.94
31	Are unit titles and subheadings concrete, meaningful, or interesting?		35.0	50.0	15.0		3.20	0.70
32	Is the writing style of the text appealing or attractive to the students?		15.0	30.0	55.0		2.60	0.75
33	Are the activities motivating? Will they make the students want to pursue the topic further?	10.0	30.0	25.0	35.0		3.15	1.04
34	Does the book clearly show how the knowledge being learned might be used by the learner in the future?	10.0	30.0	35.0	25.0		3.25	0.97
35	Are the cover, format, print size and pictures appealing or attractive to the students?	20.0	25.0	25.0	30.0		3.35	1.14

APPENDIX T

ANSWER KEY FOR THE SIMPLIFIED NOTE

1.	FAST	18.	RIVER	35.	OF
2.	A	19.	A	36.	EROSION
3.	LAND	20.	IN	37.	A
4.	THE	21.	RIVER	38.	MEANDERS
5.	V-SHAPED	22.	TRIBUTARIES	39.	CALL
6.	CAN	23.	IN	40.	ALLUVIUM
7.	WATER VALLEY	24.	OF	41.	THIS
8.	AS	25.	KNOWN	42.	A
9.	FLOW	26.	OF	43.	AGAINST
10.	THE	27.	SAY	44.	WHEN
11.	DECREASES	28.	OF	45.	RIVER
12.	THE	29.	THIS	46.	THE
13.	AND	30.	COMPARED	47.	NARROWER
14.	WATER	31.	THE	48.	FROM
15.	WE	32.	AT	49.	WE
16.	A	33.	IN	50.	THE
17.	DO	34.	FORMS		

APPENDIX U

DESCRIPTION OF THE ANALYSIS OF THE ATTITUDE MEASUREMENT SCALE

V1

Value Label	Value	Frequency	Percent	Cum Percent
disagree	2	2	5.9	5.9
neutral	3	8	23.5	29.4
agree	4	13	38.2	67.6
strongly agree	5	11	32.4	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V2

Value Label	Value	Frequency	Percent	Cum Percent
disagree	2	2	5.9	5.9
neutral	3	3	8.8	14.7
agree	4	17	50.0	64.7
strongly agree	5	12	35.3	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V3

Value Label	Value	Frequency	Percent	Cum Percent
strongly disagree	1	1	2.9	2.9
disagree	2	5	14.7	17.6
neutral	3	5	14.7	32.4
agree	4	14	41.2	73.5
strongly agree	5	9	26.5	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V4

Value Label	Value	Frequency	Percent	Cum Percent
strongly disagree	1	1	2.9	2.9
disagree	2	4	11.8	14.7
neutral	3	5	14.7	29.4
agree	4	14	41.2	70.6
strongly agree	5	10	29.4	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V5

Value Label	Value	Frequency	Percent	Cum Percent
strongly disagree	1	3	8.8	8.8
disagree	2	10	29.4	38.2
neutral	3	8	23.5	61.8
agree	4	9	26.5	88.2
strongly agree	5	4	11.8	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V6

Value Label	Value	Frequency	Percent	Cum Percent
disagree	2	4	11.8	11.8
neutral	3	7	20.6	32.4
agree	4	15	44.1	76.5
strongly agree	5	8	23.5	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V7

Value Label	Value	Frequency	Percent	Cum Percent
strongly disagree	1	6	17.6	17.6
disagree	2	11	32.4	50.0
neutral	3	6	17.6	67.6
agree	4	8	23.5	91.2
strongly agree	5	3	8.8	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V8

Value Label	Value	Frequency	Percent	Cum Percent
strongly disagree	1	2	5.9	5.9
neutral	3	5	14.7	20.6
agree	4	13	38.2	58.8
strongly agree	5	14	41.2	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V9

Value Label	Value	Frequency	Percent	Cum Percent
strongly disagree	1	5	14.7	14.7
disagree	2	14	41.2	55.9
neutral	3	8	23.5	79.4
agree	4	3	8.8	88.2
strongly agree	5	4	11.8	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V10

Value Label	Value	Frequency	Percent	Cum Percent
disagree	2	1	2.9	2.9
neutral	3	2	5.9	8.8
agree	4	23	67.6	76.5
strongly agree	5	8	23.5	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V11

Value Label	Value	Frequency	Percent	Cum Percent
strongly disagree	1	1	2.9	2.9
disagree	2	1	2.9	5.9
neutral	3	5	14.7	20.6
agree	4	17	50.0	70.6
strongly agree	5	10	29.4	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

V12

Value Label	Value	Frequency	Percent	Cum Percent
neutral	3	4	11.8	11.8
agree	4	18	52.9	64.7
strongly agree	5	12	35.3	100.0
	TOTAL	34	100.0	100.0

Valid Cases 34 Missing Cases 0

APPENDIX U(1)

FINDINGS OF THE ATTITUDE

MEASUREMENT SCALE IN (%)

V	ITEMS	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	M
1	A content area teacher is obliged to help students improve their reading ability.	32.4	38.2	13.5	5.9		3.97
2	Technical vocabulary should be introduced to students in content classes before they meet those terms in a reading passage.	35.3	50.0	8.8	5.9		4.15
3	The responsibility of a content teacher should be to impart subject matter knowledge.	26.5	41.2	14.7	14.7	2.9	3.74
4	Few students can learn all they need to know about how to read in six years of schooling.	29.4	41.2	14.7	11.8	2.9	3.82
5	The sole responsibility for teaching students how to read should lie with English teachers.	11.8	26.5	23.5	29.4	8.8	3.03
6	Knowing how to teach reading in content areas should be required for the completion of teacher training programme.	23.5	44.1	20.6	11.8		3.79
7	Only English teachers should be responsible for teaching English in Junior schools.	8.8	23.5	17.6	32.4	17.6	2.74

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	M
8	A teacher who wants to improve students' interest in reading should show them that he or she likes to read.	41.2	38.2	14.7		5.9	4.09
9	Content teachers should teach content and leave English instruction to English teachers.	11.8	8.8	23.5	41.2	14.7	2.62
10	Content area teachers should help students learn to set purpose for reading	23.5	67.6	5.9	2.9		4.12
11	Every content area teacher should teach students how to read material in his or her content speciality.	29.4	50.0	14.7	2.9	2.9	4.00
12	Content area teachers should be familiar with theoretical concepts of reading.	35.3	52.9	11.8			4.24

APPENDIX U (2)

THE ATTITUDE OF INDIVIDUAL TEACHERS IN (%)

NUMBER OF RESPONDENTS	1	2	3	4	5	6	7	8	9	10	11	12	GRADE OUT OF 60	GRADE OUT OF 100
1	2	4	1	5	2	4	2	4	2	4	5	5	40	66.66
2	5	4	1	4	3	4	1	4	3	5	2	4	40	66.66
3	3	4	3	4	3	4	1	3	1	4	1	4	35	58.33
4	2	5	1	5	4	5	3	5	4	5	1	5	45	75
5	5	5	5	5	5	4	5	5	5	5	2	5	56	93.33
6	5	5	2	3	3	5	4	3	4	5	1	3	43	71.66
7	4	4	2	4	2	3	4	4	4	4	2	4	41	68.33
8	4	5	2	5	3	4	2	5	3	4	2	5	44	73.33
9	3	5	3	4	3	4	3	4	3	4	1	4	41	68.33
10	4	4	3	4	3	4	3	5	3	4	1	4	42	70
11	4	5	3	4	1	4	3	4	3	4	1	3	39	65
12	4	3	2	5	2	3	2	3	1	4	1	4	34	56.66
13	3	4	4	3	2	3	2	4	3	4	4	4	40	66.66
14	5	4	3	4	3	3	2	3	2	4	3	4	40	66.66
15	4	3	2	3	1	4	3	3	2	2	2	3	32	53.33
16	4	4	4	3	2	3	4	4	3	4	3	3	41	68.33
17	4	2	4	4	4	2	4	5	4	5	2	5	45	75
18	3	5	2	4	2	5	2	5	1	4	2	5	40	66.66
19	5	5	1	4	2	3	5	4	5	4	2	5	45	75
20	3	4	2	4	4	2	3	4	4	4	3	4	41	68.33
21	5	4	1	4	4	5	4	5	4	4	2	5	47	78.33
22	4	3	2	5	4	3	5	5	4	4	2	4	45	75
23	4	4	1	2	1	4	5	1	4	4	2	4	36	60
24	4	5	1	3	2	4	2	5	3	4	2	4	39	65
25	5	5	4	1	5	2	5	1	4	5	2	5	44	73.33
26	5	5	2	4	3	5	1	5	1	4	1	5	41	68.33
27	4	2	2	5	4	5	4	5	5	4	1	5	46	76.66
28	5	4	2	5	4	2	4	5	4	5	3	5	48	80
29	5	4	2	4	1	4	4	4	4	4	2	4	42	70
30	3	5	2	5	4	5	5	4	5	5	1	4	48	80
31	5	4	2	2	4	4	4	4	5	4	2	4	44	73.33
32	3	4	4	2	5	3	4	5	4	3	2	4	43	71.66
33	3	4	1	5	2	5	2	4	4	3	2	4	39	65
34	4	4	1	4	4	2	4	5	4	4	3	4	43	71.66
												MEAN OUT OF 100 =		70.04