READABILITY INDEX ASSESSMENT OF NON-PRESCRIBED SUPPLEMENTARY ENGLISH LANGUAGE TEXTBOOKS IN SELECTED GHANAIAN PRIVATE SENIOR HIGH SCHOOLS

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DECLARATION

I, Vera Esenam Fordjour hereby declare that the thesis hereby submitted by me, has not previously been submitted to this or any other university and that it is my own work in design and execution and that all reference materials contained therein have been duly acknowledged.

Signature:  Date: 8th March, 2021

DEDICATION

This thesis is dedicated in great honour of my most cherished mother, Elizabeth Ama Xatse, for her countless sacrifices.

To my soul mate, Ben, and my little Angels- Roy, Renee-Ann and Randelle Baahom Aidoo.

To my late dad, Mr. E.M.K. Akali, who did not live to see this success story he was so passionate about.

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LIST OF ACRONYMS

ARI:	Automated Readability Index
CLI:	Coleman-Liau Index
FKGL:	Flesh-Kincaid Grade Level
FRE:	Flesh Reading Ease
GES:	Ghana Education Service
G-FOG:	Gunning Fog Readability
LWF:	Linsear Write Formula
MOE:	Ministry of Education
NaCCA:	National Council for Curriculum and Assessment
SHS:	Senior High School
JHS:	Junior High School
SMOG:	Simple Measure of Gobbledygook

ABSTRACT

Considering students' reading level when choosing text is a crucial decision for teachers and authors to make if, their goal is to get their readers to read with ease and comprehend the text that match their readability levels. The ability to match texts to the readability levels of readers requires knowledge of the readability levels of reading materials. Readability of English Language textbooks has thus attracted the attention of researchers and textbook evaluators. In Ghana, a number of studies have been conducted on readability of prescribed textbooks however, those studies did not focus on supplementary English Language readers in private SHSs. This study thus assessed the readability levels of non-prescribed supplementary English Language textbooks used by some private Senior High Schools (SHSs) in Ghana and how they affect the learning outcomes of their students. To achieve this, the study adopted the mixed method approach specifically, the concurrent nested design. The sources of data used were responses from interviews conducted for with twelve participants from five private SHSs, three Monitoring and Supervision officers from GES-Adentan and a Curriculum Officer for Languages. The study subjected ninety-one comprehension passages from four commonly used supplementary English Language textbooks to seven readability formulas to determine their readability levels and age appropriateness for SHS students. The results were further subjected to descriptive statistical analysis using SPSS version 21 and compared to comprehension tests scores obtained from a test administered to a sampled size of 492 SHS 1-3 students from five selected private SHSs. It was found that most of the comprehension passages were either too high or too low for the readability levels of the SHS students. In addition, the criteria used by National Council for Curriculum and Assessment (NaCCA) and private SHSs to prescribe and select the textbooks are not scientific. It was also found that readability could not predict the overall performance of SHS students based on the comprehension tests. Based on these findings it is recommended that NaCCA should collaborate with the District Education Offices to enforce the use of prescribed textbooks in all pre-tertiary institutions especially private schools.

Keywords: readability, readability index, non-prescribed supplementary textbooks, assessment, senior high school.

CHAPTER ONE
GENERAL INTRODUCTION

1.0 Introduction

It has been argued that the most important pedagogic decision that teachers make is choosing appropriate reading materials for their students, in whatever subject, at an appropriate level of reading for them (Fry, 2006). If students are given reading materials that are too easy, they are not challenged and their learning growth can be stunted (Oakland & Lane, 2004). On the other hand, if the reading materials chosen for students are too difficult, they can fail to make progress (Janan & Wray, 2014). This is because when students are given text that is too difficult, they are frequently off task and they may exhibit behaviour problems (Oliviera et al, 2020).

Furthermore, students faced with difficult texts may become so frustrated that they simply give up (Feller et al., 2020). Considering students' reading level when choosing text is therefore a crucial skill for teachers and authors alike if, their goal is to get their readers to read and understand the text with ease. It has long been considered that the successful exercise of this skill requires knowledge of the readability level of materials. The Bullock Report (Santos et al., 2020) observed that a particularly important teaching skill is that of assessing the level of difficulty of books by applying measures of readability. The teacher who can do this is in a better position to match students to reading materials that answer their needs.

On this score, the study assessed the readability of supplementary English language textbooks used by private Senior High Schools (SHSs) in Adenta, a Municipality in Accra, the capital city of Ghana. This Chapter defines and explores the concept of readability and its use as a scientific tool to measure and determine the appropriateness of textbooks in order to match reading levels of students. The Chapter further highlights textbook selection and readability studies conducted in Africa and in Ghana. The Chapter outlines the rationale behind the study and further presents a summary of the conceptual framework that underpins the study. It finally discusses briefly, the core literature reviewed in Chapter Two and the

research methodology used in Chapter Three. The Chapter ends with the structure of the succeeding chapters of the study.

1.1 Background of the study

The aim of any textbook is to help students improve their language competence and to facilitate easy comprehension of text. This aim cannot be achieved when students are unable to read and comprehend texts meant for them. (Burke & Greenberg, 2010; Owu-Ewie, 2014). The ease with which a reader reads a text and comprehends it depends greatly on the style of the author and vice versa (Du Toit, 2017). .

Moley, Bandre and George (2011) describe readability as when a text is easy to read as a result of the simplicity of its wording and sentence structure. It can be considered as a process of measuring how difficult a text is to the reader (Davids, 2015). Davids further explains that how well students succeed in academia, depends largely on their ability to comprehend texts intended for them. For this reason, it is important to select texts based on the readability level of readers. Text selection based on readability is an attempt to match the level of a written text to the understanding level of the reader (Johnson, 2000; Feather, 2004).

Thus, text readability is crucial for educational achievement because readable texts motivate students to read texts and acquire information, skills, values, attitudes, and knowledge when the text is easy to comprehend (Fry, 2006; De Oliveira Jr, Jung, Mccaffery, McCarthy & Wolf, 2015). Easy reading in effect helps to promote effective learning; hence, the need to select textbooks that match a readers' comprehension level.

According to Feather (2004), readability of a textbook helps students to enjoy reading the text, and this makes them acquire more knowledge to improve their academic performance. For a textbook to be clear and unambiguous, it should be easy for its intended readers to comprehend (Sholeh, 2012). In other words, textbooks can only serve their purpose when students are able to read and understand the text. Comprehension of a text is therefore a powerful weapon for students to excel in academic work (Alderson, 2001). However, there are texts

that are not easy to read and comprehend. This de-motivates students to read and prevents them from acquiring useful knowledge and skills (Plucinski, 2011; Fang, Ye, Kucukusta & Law, 2016). Davids (2002) affirms that a good number of authors have failed to provide readers with texts that are accessible and well matched to reader's abilities and the solution to this problem has been the creation and use of readability formulas.

A significant body of research on the concept of readability was developed between the 1920's and the early part of the 1990s. One of the major outcomes of which was the production of a large number of readability formulas. The evolution of interest in this research area was due to the motivation to highlight quantification in producing a curriculum that is scientifically based (Wray & Janan, 2012). As it were, the readability formulas were used as approaches to analysing texts which were designed to give a quantitative measure of the level a reader would need to be at in order to read and understand a particular text successfully.

The earliest readability formulas which were developed between 1921 and 1934 were those from Thorndike in 1921 and Vogel and Washburne in 1928. During this era, readability formulas focused on vocabulary as the foundation for predicting readability. As observed by Klare (1963), *Thorndike's Teacher's Word Book* was the main source for measuring difficulties in vocabulary. Then came readability formulas produced by Dale and Tyler in 1934, and McClusky also in 1934. This era also saw the advent of Flesch in 1948, Dale and Chall in 1948, and Gunning's 1952 formulas, whose current and modified works are still in use today.

There are over 200 computerized readability formulas which have been developed and used for more specialized purposes (DuBay, 2015), and this has led to the development of new criteria, new formulas, computerized versions, and the continued testing of text variables (Dubay, 2004). A detailed review of the seven readability formulas used for this study; Flesch Reading Ease, Flesch-Kincaid Grade Level, Gunning Fog Readability, SMOG Readability, Linsear Write Formula, Coleman-Liau and Automated Readability Index is contained in the literature review section (Chapter 2.14) of this study.

As mentioned earlier, one of the major reasons for readability studies is to match text with readers' abilities based on text features. One text that is of keen interest to scholars and educators is the textbook. Studies have established that using readability formulas as a tool in determining textbook suitability and selection will yield better results than other criteria. Many studies on readability index analyses of textbooks, thus, have been explored by several researchers on textbooks in general and a few in English language (Plucinski, 2011; Stewart, 2011; Kolahi & Shirvani, 2012; Owu-Ewie, 2013, 2014; Tinkler & Woods, 2013; Gyasi, 2013, 2017; Essuman & Osei-Poku, 2015; Fosu, 2016; Gulati, Nawaz, Lam & Pyrsopoulos, 2017; Krige & Reid, 2017).

Ozasa and Hettiarchchige (2004) evaluated the English Language textbooks used in China, Korea, and Japan in terms of content, structure and complexity, coherence and cohesion, and sentence difficulty using quantitative approach. The study revealed that the Chinese textbook was most readable, followed by Korean textbooks and Japanese textbooks were the least readable. This had been attributed to the fact that in China, students were taught more English in a natural setting whereas in Korea and Japan, they were taught less English in a more artificial setting.

Also, quite a number of readability studies have been conducted on the use of approved textbooks in Africa. For instance, Sibanda (2014) in her study, analysed the readability levels of two Natural Science textbooks approved for 4th Graders in South African schools. Her study showed that the books were higher than the reading levels of its targeted readers. According to Sibanda, the unsuitable nature of text could be attributed to vocabulary that was not clarified. She further argued that many writers were unaware of the context of the young users of the textbooks.

Readability studies were conducted in Botswana by Kasule (2011) on an English textbook meant for two hundred and seventy-eight (278) 7th graders. In Kasule's study, readability formulas were applied, and a cloze test was administered to the 7th graders. The results showed that only 18 percent of the students could engage with the text unaided while the others were frustrated by the text.

Using Cloze test, Ereke and Okonkwo (2016) explored the readability level of Nigerian SHS students' expository writings. According to Ereke and Okonkwo (2016), cloze test is a scale for assessing students' comprehension in English Language. The researchers found that the students' performance in the comprehension of expository texts over the period had been low. They therefore recommended that educators should implement cloze procedure as a means to help counter the students' challenge with expository texts.

In Ghana, where this study was conducted, to the best knowledge of the researcher, there seems to be three (3) scholars who conducted studies on readability. One of the studies- Fosu (2016), researched on press document while the other two- Gyasi (2013; 2017) and Owu-Ewie (2014) focused on textbooks analyses. Gyasi (2013) investigated the readability index analysis of Ghana Association of Science Teachers' textbooks for Senior High Schools. His findings revealed that with the exception of the Chemistry textbook for SHS students, which was fairly difficult, all the others–Physics, Integrated Science and Biology--were very difficult to read and comprehend. Besides, they were quite above the students' grade levels though these textbooks had been prescribed by Ghana Education Service (GES).

Another study was conducted by Gyasi (2017) where he examined the readability of four English language textbooks used in Ghanaian Senior High Schools. Gyasi used the Flesch Reading Ease and Flesch-Kincaid Grade level to determine the readability and grade level of the readers. The results showed that the textbooks were very difficult to read because the readers required at least 11 years of formal education to comprehend the text.

Gyasi's (2018) study examined the readability of three course books used by diploma students at the College of Distance Education, University of Cape Coast. The study used Flesch Reading Ease and Flesch-Kincaid Grade Level in measuring the readability of the textbooks. Gyasi discovered that the average course book was largely difficult to read with each requiring students to have acquired at least 17 years of education in order to understand the course book.

Owu-Ewie (2014), the third scholar, conducted a readability test on approved JHS English language textbooks in Ghana. The study concluded that a considerable number of the passages read by students were difficult and above their age level. Gyasi's (2018) study showed that the passages in the English language textbooks were difficult to understand by the students because the levels of the text were higher than the age of the students. Moreover, the passages had complex sentences and foreign backgrounds that students could not easily relate to.

The West African Examination Council (WAEC), has over the past decades, in the Chief Examiner's Report, (2016, 2017 & 2018) consistently attributed the persistent decline in performance in almost all subject areas to candidates' poor command over the English language. This situation thus, has the potential to impede the smooth transition and integration of SHS graduates into Ghana's higher institutions of learning- the universities- where the situation may become complicated to repair.

Additionally, stakeholders of the educational sector have blamed the poor performance of students on teachers, parents and students without considering the role 'difficult to read' instructional materials or textbooks play in students' acquisition of knowledge, skills and competence in English language (Hudelson, 1994; Crossley, Allen & McNamara, 2011). Meanwhile, the studies conducted so far in Ghana, as cited in paragraph 12; Gyasi (2013, 2017 & 2018), Owu-Ewie (2014), Essuman and Osei-Poku (2015) did not focus on the difficult nature of non-prescribed supplementary English language textbooks used by private schools. These studies examined approved textbooks used by public schools.

It is worth noting that Owu-Ewie's study was conducted on English language textbooks prescribed by the GES as the main course book for use in JHSs. GES is a body under the Ministry of Education (MOE) in Ghana, and they are responsible for implementing national educational policies and programmes for pre-tertiary institutions, both public and private. As part of their core mandate and function, GES, is responsible for the registration, supervision, and inspection of private and public pre-tertiary education institutions. This is provided in the Section 3 Subsection 2(b) of Ghana Education Service Act, 1995 (Act 506).

Most importantly, the National Council for Curriculum and Assessment (NaCCA), a Unit of the GES is empowered and mandated by Ministry of Education (MOE) to recommend and prescribe textbooks for use at the pre-tertiary institutions (public/private) per the same GES Act. This, however, does not seem to be the case in Adenta as it was observed that most of the textbooks used were not the ones recommended and prescribed by NaCCA.

The situation is alarming because through Owu-Ewie's (2014) study, it was revealed that even the prescribed English language textbooks by the NaCCA, were not readable for its targeted students. If this is a seemingly established fact, then the gap created to be filled and the question to be answered by this study is, whether the NaCCA Unit of MOE/GES has a scientific criteria that considers and determines the readability level and age appropriateness of English language textbooks (whether coursebooks or supplementary) before they are recommended and prescribed for students' use in SHSs.

With reference to the readability studies conducted so far in Ghana, coupled with the researcher's previous experiences and observations made while on the field as an English Co-ordinator of the Adentan Education Directorate, it is clearly evident that there is an over reliance on supplementary English language textbooks that have not been officially recommended and prescribed by NaCCA but are used by most private SHS in the teaching and learning of English language (see attached as appendix K: the prescribed supplementary readers booklist from NaCCA). Apart from private SHSs, these books are equally used by a good number of public SHS in Adentan as supplementary readers in an effort to meet the curricula demands.

This study is, therefore, aimed at assessing the readability levels of the commonly used supplementary English language textbooks that have not been prescribed by NaCCA but are used in the private SHSs in Adenta. The reason for this choice is that the readability of supplementary textbooks is relevant to either recommend their approval or suggest their revision in order to meet the target users' needs. This is in line with Graves's (1995) suggestion that using multiple textbooks in teaching and learning is efficient in meeting every student's need since that will

create an opportunity for students to access books that match their readability and comprehension levels.

1.2 Statement of the problem

From the literature discussed in paragraph 12 to 18 of the background of the study, it appears that readability of textbooks in general is difficult even in the Ghanaian context. Despite the feat in discovering the difficult nature of prescribed English language textbooks as confirmed in the findings of Gyasi (2013, 2017 & 2018), Ewu-Ewie (2014), and textbook evaluators like Essuman and Osei-Poku (2015) it appears there is no readability study on the subject specific in Ghana and more particularly, on non-prescribed supplementary English language textbooks used by private SHSs in Ghana. Each of the study cited above seems to be silent on the subject. GES in collaboration with NaCCA is authorized to assess and prescribe textbooks (course books and supplementary) for use by students at the pre-tertiary institutions (SHSs inclusive) both public and private. These textbooks whether (coursebooks or supplementary) are expected to suit the readability levels of students. Thus, the prescribed textbooks are recommended for use in the teaching and learning of English language in all pre-tertiary institutions. Some private SHSs however, use supplementary English language textbooks that are not prescribed and whose readability levels are unknown hence, the problem investigated was three-fold. First, there is an over reliance on non-prescribed supplementary English language textbooks in private SHSs in Adentan and this is an issue of non-compliance and a violation of Section 3 Subsection 2 (b) of the Ghana Education Service Act, 1995 (Act 506). This subsection provides that ‘it shall be the duty of the service to register, prescribe books, supervise and inspect their use in pre-tertiary educational institutions’. Secondly, it is doubtful whether the non-prescribed supplementary English language textbooks have undergone any scientific assessment to ascertain their appropriateness for use by SHS students. Finally, the issue of quality assurance and coverage of content of the SHS syllabi in these textbooks is equally unknown. This situation requires enquiry hence the need to investigate the readability levels of passages of non-prescribed supplementary English language textbooks, to determine their suitability to the reading levels of students and most importantly, their impact on students’ performance in English language.

1.3 Objectives of the study

The purpose of the research is to assess the readability levels of non-prescribed supplementary English language textbooks used by private senior high schools in Adentan and how the books affect students' learning outcomes.

The specific objectives are to:

1. Apply readability formulas to selected passages of non-prescribed supplementary English language textbooks to determine their readability levels and age appropriateness.
2. Determine the criteria used by authorities of private SHSs to select non-prescribed supplementary English language textbooks.
3. Find out whether officials of GES-Adenta are aware of the use of non-prescribed supplementary English language textbooks by private SHSs in Adentan.
4. Investigate whether measures are put in place by NaCCA to ensure compliance with the usage of suitable and prescribed supplementary English language textbooks at the SHS level.
5. Examine the relationship between readability levels of non-prescribed supplementary English language textbooks and students' performance in English language.

1.4 Research Questions

The study is guided by the following research questions:

1. What are the readability levels of selected passages of non-prescribed supplementary English language textbooks used by private SHS students in the Adentan Municipality?
2. Which scientific criteria are used by the authorities of private SHSs to select non-prescribed supplementary English language textbooks for their students?
3. To what extent are the officials of GES- Adentan aware of the use of non-prescribed supplementary English language textbooks by private SHSs in Adenta?

4. What measures have been put in place by NaCCA to ensure the usage of suitable and prescribed supplementary English language textbooks at the SHS level?
5. What is the relationship between readability levels of non-prescribed supplementary English language textbooks and performance of SHS students in English language?

1.5 Assumptions underpinning the study

The study operates on the following assumptions:

I. The criteria used by authorities of private SHS and NaCCA officials to select English language textbooks for SHS students may not be scientific.
II. Some passages in non-prescribed supplementary English language textbooks used by privately-owned SHSs may not match the grade levels or age of the students.
III. There is no significant relationship between the readability levels of non-prescribed supplementary English language textbooks and students' level of comprehension and performance.

1.6 Justification of the study

This study would be useful to stakeholders of education (that is) National Council for Curriculum and Assessment- NaCCA Unit of MOE, authors, editors and publishers in-charge of approving textbooks for SHS students. The in-depth knowledge on the use of readability formulas and tools required to determine the appropriateness of textbooks for the various levels of students is relevant to educators.

Further, the result of the study would serve as a guide for members of school management boards, proprietors, headteachers and teachers of English language in selecting and designing reading text materials that are suitable for students' readability levels. In effect, the selection of appropriate texts for study would enhance students' interest and comprehension, and ultimately improve their learning outcome.

Additionally, the findings of the study would enrich and strengthen the knowledge on readability of English language textbooks used in teaching and learning.

Finally, the research findings would help other educators to select passages suitable for their students considering their grades and age.

1.7 De-limitation of the study

This study assessed the readability levels of passages in non-prescribed English language textbooks used by private SHS students in Adenta Municipality using seven readability formulas. The study operated on the premise that some passages in non-prescribed English language textbooks used by students of private SHSs may be difficult to read and comprehend as the ones prescribed by NaCCA were confirmed to be difficult based on the findings of Gyasi (2013) and Owu-Ewie (2014). Even though reading difficulties may be associated with textbooks of other subjects, the study is limited to non-prescribed supplementary English language textbooks and only those used by private SHSs within the Municipality of Adentan. This is because, based on observations, the problem was prevalent in those schools.

1.8 Literature Review: A summary

1.8.1 The concept of readability

Flesch (1949) provides a simple and clear definition of readability as a text that is easy or interesting to read. Klare (1984) sees readability as the ease of understanding or comprehension due to the style of writing. In agreement to this, Pikulski (2002) opines that readability is the level of ease or difficulty with which text materials can be understood by a particular reader who is reading that text for a specific purpose (Roy et al., 2015). According to Dubay (2004), readability is what makes some texts easier to read than others. Richards and Schmidt (2002) also define readability as how easily, written materials can be read and understood.

Over 200 readability formulas have been proposed and utilized (DuBay, 2004). Some of these formulas include Spache, Flesch reading Ease, Gunning Fog, SMOG, Kincaid Grade Level and many others. Readability can be considered as

a means to measure the difficulty level of a text to the reader (Davids, 2002) or to estimate the level of comprehensibility of written texts.

Readability formulas also estimate the number of years of education one needs to have to read and understand a text (Kincaid, Fishburne, Rogers & Chissom, 1975). These formulas are capable of measuring the relationship between the difficulty experienced when reading a text and the linguistic features, specifically word meaning and sentence structure, of that text (McLaughlin, 1969) on the web and the one found in a word processing program.

The ability of a test to consistently measure what it is supposed to measure depends on its readability (Atcherson, 2012; Bitgood, 1996; Reece & Walker, 1992). This definition is concerned with the interaction between the reader and the text. This implies that when a text cannot be read and easily understood by a reader, it is unreadable. Therefore, in readability, there is relationship between a text and the reader (Fountas & Pinell, 2001). However, from the writer's perspective, Klare (1963) defines readability as the ease of understanding due to the style of writing. However, Dubay (2004), writing on the principles of readability, noted that the definition by Klare separates writing style from issues such as content and organization of the text.

In another way, McNamara and Magliano (2009) define readability as the degree to which a given group of readers finds certain reading materials compelling and comprehensible. Dubay (2004) indicates that readability is the sum of the total of all those elements which a given piece of printed material has that affects the success of a group of readers. The success is the extent to which they understand it, read it at an optimal speed and find it interesting. The implication of the definitions above is that comprehensibility is essential in readability. Thus, good written material should be highly readable to be clearly understood by a wide audience.

Based on the definition above, it can be concluded that readability is the degree of difficulty or ease of a text to the reader. It deals with how easily a text conveys its intended meaning to the reader of that text.

1.8.2 Factors Affecting Readability of Texts

The ability to read and understand a text depends on a range of factors including content, structure, style, layout and design. These factors can be semantic or syntactic. Semantic factors are concerned with words, while syntactic factors involve the length and structure of sentences (Owu-Ewie, 2014).

Crawly and Mountain (1995:22) believe that "the readability level should be the determining factor in choosing a particular book". In their opinion, Richards and Schmidt (2002) assert that readability is influenced by some factors including: (a) the average length of sentences in a passage, (b) the number of new words a passage contains, and (c) the grammatical complexity of the language used. Pikulski (2002) mentions factors that influence readability to include content, vocabulary, structure, typography and illustration. Therefore, readability is a critical factor in textbook selection. Moreover, sentence structure and vocabulary must equally be considered.

According to Stephens (2000), factors likely to affect the readability of a text are the number of pronouns, average number of words in sentences, percentage of difficult words and number of prepositional phrases. Essem Educational Limited (2007) has indicated a number of factors that influence the readability of a text. These include physical factors (such as typeface, font size, spacing and layout), reader factors (such as prior knowledge, reading ability, and motivation of the reader), vocabulary difficulty, text structure, text coherence and cohesion, and syntax. In this study, words and structure of sentences (Stephens, 2000; Pikulski, 2002; & Schmidst, 2002) were examined as well as physical factors, reader factors, difficulty of vocabulary, coherence and cohesion. The significance of age was also part of this study. It must also be noted that the age of the reader is crucial to readability. Age appropriateness of academic material is also crucial to effective learning. If the content of a text is above the age of the learner or reader, there is bound to be difficulty in reading such a text.

Additionally, Stephens (2000) seems to advance the perspective of Richards and Schmidt (2002). According to Stephens (2000), the use of language that is complex, indirect, uneconomical, and unfamiliar affects readability of a text. In

addition, the inclusion of needless words, the use of sentence structures that are ambiguous, and the haphazard and illogical organization of the material affect readability.

Generally, a text is readable when it is age appropriate and presents concrete issues that clear all doubts and questions by readers. Additionally, the text should be reader friendly and it should be familiar and acceptable to the reader's cultural background (Braught, 2003). A critical look at the definitions earlier indicates that generally readability factors can be categorized into the visual layout of the text, and the ease of understanding of words and sentences in the text. In this study, the latter is the focus.

1.8.3 The Readability formulas

There are different readability formulas. Some common readability indexes include Gunning FOG Index, Flesch Reading Ease, SMOG Readability, Automated Readability Index, Linsear Write Formula, Coleman-Liau Index and Flesch-Kincaid Grade Level (Gyasi, 2011). This study will use the seven formulas cited above to ascertain the readability levels of some selected commonly used and non-prescribed supplementary English Language textbooks.

Table 1. 1: Flesch Reading Ease Score/Flesch Kincaid Grade Level

Flesch Reading Ease Score	Description	Flesch Kincaid Grade Level
0-29	Very difficult	Post graduate grade
30-49	Difficult	College grade
50-59	Fairly difficult	10th-12th grade
60-69	Standard	8th-9th grade
70-79	Fairly easy	7th grade
80-89	Easy	5th-6th grade
90-100	Very Easy	4th-5th grade

Source: Wyath and Schnelbach (2008)

The Gunning FOG Index is simply referred to as FOG Index. It was developed by Robert Gunning in 1952. According to Gunning, the reading problem was largely a

writing problem. He was of the view that written materials were full of “fog” and unnecessary complexities. The fog test is used commonly to confirm that a text can be read easily by the intended user (Dubay 2004; Owu-Ewie, 2013).

This formula is a popular one because it is easy to use. This formula only uses two variables, average sentence length (ASL) and the number of words with more than two syllables for each 100 words. The underlying principle of the Gunning Fog Index formula is that short sentences achieve better scores than long sentences written in complicated language (Kolahi, 2012).

A Fog index of 1-8 is for elementary school students, while 9-12 is for high school students. A document that scores a fog index of 13-16 is for post-secondary school students. The lower the number, the less difficult the text is to be understood. The ideal score for readability with the Fog index is 7 or 8. Anything above 12 is too hard and difficult for most people to read (Grundner, 1978). Though the fog index gives a sign of hard and difficult-to- read text, it has some limitations. Firstly, it must be noted that not all complex words are difficult since some short words can be difficult if they are not used very often. The same can be said about sentences (Pikulski, 2002; Dubay 2004; Ulusoy, 2006).

Another common readability formula is Flesch-Kincaid Grade Level. Flesch-Kincaid Grade Level was co-authored by Rudolph Flesch and John P. Kincaid. It is an improvement of Flesh grade level score. This formula is known by different names, like Flesch-Kincaid Index, Flesch-Kincaid Grade Level Score, Flesch-Kincaid Scale, Flesch-Kincaid Score, Flesch-Kincaid Readability Score, Flesch-Kincaid Readability Statistics, Flesch-Kincaid Grade Level Index, Flesch-Kincaid Readability Index and Flesch-Kincaid readability equation (Doak & Doak, 2010).

Flesch’s reading ease formula became the most widely used formula and one of the most tested and reliable (Dubay, 2004). According to Braught (2003), the Flesch-Kincaid Grade Level is a number usually between 0-100 indicating how difficult the text is to read. The higher the number, the less difficult it is to read the text. In terms of the level of reading difficulty, documents that score a Flesch Reading Ease of 0-30 are considered very difficult while those that score 30-50

are considered difficult. A Flesch Kincaid Grade Level of 50- 60 is for documents that are fairly difficult and 60-70 score is for standard documents. A Flesch-Kincaid Grade Level score of 70-80 and 90-100 are considered to be easy and very easy documents respectively. Therefore, writers are encouraged to aim for a score of approximately 60 to 70 (Braught, 2003).

The formula is based on the average number of syllables per word and the number of words per sentence (DuBay, 2007). The Flesch Reading Ease Test is calculated by the following method: average sentence length is multiplied by 1.015, and average number of syllables is multiplied by 84.6. These two products are subtracted, and the difference is subtracted from 206.835, resulting in a score ranging from 0 to 100. That is, 206.835 – 1.015 (total words/total sentences) – 84.6 (total syllables/total words) (Braught, 2003 & Dubay 2004).

1.8.4 Textbook analysis

There is a growing body of literature assessing the readability of textbooks (Flory, Phillips, & Tassin, 1992; Tinkler & Woods, 2013; Plucinski, 2011). More particularly, studies on textbook selection in schools are being conducted by organisations and individual teachers. A study of Schultz (2014) indicated that a number of teachers select a certain textbook based on their subject coverage, appropriate level for student, inclusion of supplemental material, reputation of the author, and other reasons.

When organisations and teachers find a textbook that they like and believe is effective, they adopt that textbook until either the selector's criteria changes or perhaps is presented with a product that is perceived as "better" (Durwin & Sherman, 2008).

Some researchers argue that teachers are not always the best judges when it comes to selecting textbooks for their schools (Landrum, Gurung, and Spann, 2012). Their perception is that teachers were exceptional students during their school days and do not necessarily represent the audiences they are teaching. Besides, their assessment may also be disadvantaged by their past knowledge of the subject material, of which, most of their students are lacking (Durwin &

Sherman, 2008). Since teachers are the best judges of textbook selection, one main factor that should guide textbook selection is student preference (Schultz, 2014). This is because many studies have shown a decrease in the amount of time students spend reading; therefore, any factor that can encourage students to read should be considered (Berry et al., 2011; Clump, Bauer & Bradley, 2004). The role of student preference in motivating them to read is important. Thus, some studies have shown that student preference is a factor that affects how much time students spend reading their textbooks and that readability is one of the factors that lead to higher levels of student satisfaction with their assigned textbook (Durwin & Sherman, 2008).

Whereas student interest has been considered vital as an impetus for reading, some scholars hold the view that there is an inverse relation between student performance and what they read. For instance, Spinks and Wells (1993) have mentioned that readability research has shown an inverse relationship between student performance and the texts they read. They found that students who use textbooks with higher readability scores had lower course averages. Spinks and Wells also found a strong relationship between the difficulty of the course textbook and the number of withdrawals from the course. The readability of a textbook could become increasingly important because the number of students who need reading and writing remediation is increasing.

A study by Owu-Ewie (2014) on the readability of junior high school textbooks revealed that most of the passages used were above the age of readers and were therefore difficult to read. The study also identified that the nature of sentences, unfamiliar background of passages were some contributing factors of the difficult nature of the textbooks and recommends that textbook writers should have training in textbook writing in general and writing for second language learners in particular. Inferring from Spinks and Wells argument, the difficulty levels of junior high school textbooks pointed out by Owu-Ewie can be contributing factor to the low level of performance in English among senior high school students.

In the views of this study, the respondents interviewed in Owu-Ewie's (2014) study were not directly related to textbook production at the junior high school level.

Lecturers in the university who teach textbook production and evaluation were interviewed rather than the teachers who teach English at the JHS level and who are the essential stakeholders.

On the contrary, this current study interviewed stakeholders namely English language teachers who use the English textbooks in teaching as well as headteachers and their assistants thus, the study adds to existing literature on the readability of English Language textbooks particularly in Ghana by exploring the readability of non-prescribed supplementary English Language textbooks used by private SHSs.

1.9 Research Methodology

1.9.1 Study Design

This research relies on the mixed method approach as it satisfies the conditions explained by Bormuth (2007:23). Bormuth defines mixed method research as the type that combines elements of both qualitative and quantitative research approaches for broad in-depth comprehension and justification. Johnson and Onwuegbuzie (2004), and Greene (2007) consider the mixed method as one that exposes the researcher with opportunities to the weaknesses and strengths within the method to avoid biases. Simply put, a mixed methodology is a blend of both qualitative and quantitative methods of data collection for the same study (Creswell, 2013). This method was chosen for the study because of its advantages of exposing the researcher to variety of data needed to draw objective conclusions to findings (Creswell, 2013).

According to Creswell (2013), there are six types of mixed method research design: sequential explanatory; sequential exploratory; sequential transformative; concurrent triangulation; concurrent nested; and concurrent transformative. This study used the concurrent nested design. The concurrent nested design indicates that both qualitative and quantitative data are collected at the same time (Kroll et al, 2005).

The concurrent nested design is found appropriate for the current research because the design gives precedence to one stage of data collection which

controls the project, while the second stage is embedded or nested into the project and plays a supporting role.

Often, the embedded approach answers a different question in the main research question. The choice of the concurrent nested design by the researcher was informed by its relevance to the present study. For instance, the design is helpful in determining the level of reading comprehension difficulty of sampled passages in textbooks and as well assess practices that account for the selection and approval of these textbooks for use in private SHS.

The qualitative design for this study involved the collection of data from knowledgeable respondents through interviews to determine factors responsible for the difficult nature of non-prescribed supplementary English Language textbooks and the poor performance in English language by SHS students in private schools. This was necessary to obtain detailed information from knowledgeable subjects like GES staff responsible for monitoring and supervision in private schools, the NaCCA Curriculum Officer for Languages and selected staff of private schools to answer the research questions 2, 3 and 4.

1.10 Population, Sampling and Sample Size

Research population refers to all subjects of the research (Arikunto, 2010). Sugiyono (2010) also defines population as the entire research subject or object that has certain characteristics and quality at the disposal of the researcher to the study. In the context of this research, the general population was all private SHS in the Adentan Municipal Education Directorate within Accra capital, whose students use non-prescribed supplementary English language textbooks and all Subject Coordinators of NaCCA, and the Supervision and Monitoring Team of Adentan Municipal Education Directorate. The target population was divided into five categories and two main sample sizes were chosen for this research (See table 3.1 & 3.2). The sample sizes included the respondents for interview (qualitative approach), readability test and comprehension test (quantitative approach).

The first category included all the students in the private SHS in the Adentan Municipal Education Directorate within Accra, the national capital, who use supplementary English language textbooks which were not prescribed by NaCCA. The total sampled student population of the study was four hundred and ninety-two (492) out of a total enrollment of 872 from five (5) selected private SHSs in the Adentan Municipal Education Directorate within Accra. The students were included in the study because they use supplementary English language textbooks that were not prescribed by NaCCA. This target population is significant in achieving objective 5 because the textbooks being assessed are used by the SHS students in the five selected schools. This data was used for the quantitative analysis which is reported in detail in Chapter 4 of this study.

The second category, where qualitative data was gathered, was made up of 4 headteachers, 2 deputy headteachers and 5 English language teachers of private SHSs. These participants were chosen because they select textbooks for their students. The third category is the NaCCA Curriculum Officer of Languages who was purposely chosen to answer research question 4 because it is the NaCCA Unit of GES that is mandated to evaluate, assess and prescribe textbooks for use at the SHS. The fourth target population are three (3) members of the Supervision and Monitoring Team of Adentan Municipal Education Directorate whose responsibility it is to ensure all schools use the textbooks prescribed by NaCCA (See table 3.1. and 3.2). Interviews were conducted for these participants and analysed qualitatively. The findings are reported in Chapter 4 of the study.

The fifth target population which is meant to answer research question 1, are Ninety-one (91) comprehension passages between 150-600 words selected from four non-prescribed supplementary English language textbooks. These passages are needed to undergo the scientific readability test to determine the readability levels and age appropriateness of passages in the English language textbooks used by the SHS students.

The choice of 150-600 words in a comprehension passage is based on the fact that it is the suggested length of a text for the electronic version of the various readability formulas used in this study (Johnson, 2000).

1.11. Research Instruments

The research instruments used in this research are semi-structured interviews, comprehension test and passages selected from the following four non-prescribed supplementary English language textbooks:

1) *Global/Approacher's- Book 2 Series English for Senior High Schools Comprehension, Summary and Essays*

2) *Aki-Ola Series- Book 1 Series English language for SHS*

3) *A Comprehensive Core for English Languages – Book 4 for Senior High Schools and Colleges*

4) *West Africa Book Project- Book- 3 for Senior Secondary Schools (SSS*)

In all, ninety (91) comprehension passages extracted from the four books were subjected to seven readability measures to determine their readability levels. Instruments used in the study are well elaborated in Chapter Four (4.6

1.12 Data Analysis Procedure

Ninety-one (91) passages were extracted from the four non-prescribed supplementary readers and they were analysed using tables and statistics models with the help of online computer readability software (Microsoft Word 2013 version). Each readability formula was used to determine the readability level of each passage in each of the four selected textbooks. The outcomes of the seven formulas applied to the ninety-one (91) passages from the non-prescribed supplementary English language textbook are compared and reported in Chapter 4 of the study. Thereafter, the averages were calculated from the results of the various passages from each textbook to find the readability level of the books. The Gunning FOG, Flesch-Kincaid Grade Level, Flesch Reading Ease Formulas, Simple Measure of Gobbledygook (SMOG) Index, Automated Readability Index, Colman-Liau Index and Linsear Write Formula were applied to the passages and their results compared, following same procedure.

Discussions were made with regard to the breakdown of results produced by the online readability formulas. Furthermore, based on various responses received from respondents, the researcher grouped, classified and described the various

criteria used by NaCCA personnel and private schools to select textbooks for their schools. Chapter 4.8 gives further details on this section.

1.13 Ethical consideration

Conducting research can be problematic, especially when the researcher has to involve people in order to access data from them. In this regard, the researcher must be guided by ethics to avoid participants being exposed to danger, their rights being taken away from them, confidential information about the participants released to the public among others (Bickman & Rog, 2019). To this end, ethical issues were addressed at each phase of the research. To ensure that no unethical practices were involved in this study the following ethical related practices were observed:

Ethical clearance was duly sought from the Research and Innovation Directorate of the University of Venda, South Africa and approval was received in July, 2020 (See Appendix 1: 228).

Permissions were sought through formal letters to the Director of Adentan Municipal Education Directorate, the Executive Officer of NaCCA, the Proprietors and Headteachers of the five selected private SHSs in Adentan Municipal Education Directorate.

Approval was received from these persons in order to meet the rights of participants to free consent, voluntary participation, confidentiality, anonymity, and informed consent as spelt out by Burns and Grove (2001). A detailed discussion is further presented in Chapter 3.

1.14 Structure of the Study

The study is divided into six chapters.

Chapter One includes the background of the study, statement of problem, objectives of the study, research questions, justification of the study, delimitation of the study, limitations of the study and the structure of the study.

Chapter Two explores the conceptual framework of the study which includes the concept of readability, readability formulas, their strengths, weaknesses, and the

justification for selecting these formulas. The Chapter focuses on empirical literature and discusses factors affecting reading, readability, and effects of readability on users. The chapter also reviews literature on the responses of authors and comments made by researchers concerning the difficult nature of their books including reviews of other works done on readability studies across the globe.

The data collection methodology of the study is discussed in Chapter three. This includes the research design, population, sample and sampling, research instruments, data collection, procedure and analysis.

In Chapter Four, data is presented, analysed and discussed in statistical tables, graphs, and charts.

Chapter Five provides summaries of findings, draws conclusions, and gives practical recommendations for further studies.

1.15 Chapter Summary

This Chapter presented a general overview of the whole study. Particular attention was paid to the evolution of readability studies in Africa and in Ghana specifically. It presented the problem, objectives, research questions, justification and assumptions underpinning the study. In addition, the Chapter provided a summary of literature on readability studies, the methodology adopted and the various stages of the research process. It concluded with how the thesis is organized.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter reviews extant and empirical literature that is relevant to the study and it covers discussions on readability studies, textbook analyses and evaluation, factors that affect readability and critical analysis of readability formulas. The study adopted the Text and Reader Interactive Model (TRI) as the conceptual framework and grounded by the Schema theory (SMT).

2.1 Conceptual Framework

A conceptual framework is a unified established model about how a certain phenomenon operates or how it is connected to its parts (Yan, 2017). It can also be considered as an investigative tool with many distinctions and settings used to make conceptual variations and to establish new ideas. The framework serves as the foundation for comprehending the causal or correlational patterns of interconnections across events, ideas, observations, concepts, knowledge, interpretations, and other components of experience. The conceptual framework suitable for this study is centred on concepts such as text, reader, reading, readability (text-based), and comprehensibility (reader-centred). The topics of readability and comprehensibility are intertwined hence the use of the Text and Reader Interactive Model (TRI) grounded by Schema Theory (SMT).

2.1.1 Text and Reader Interactive Model (TRI)

This framework is suitable for this study because it shows the relationship between readability and comprehensibility which are the pivot of this research. According to Doherty (2012), there exists a relationship between readability and comprehension though they are different concepts. Doherty explains that to ascertain the reader's understanding of text it is important to examine the relationship between comprehensibility and readability. Therefore, this research examined the relationship between readability and comprehensibility and how it affects students' performance in English language. The key concepts of this study which include text, reader, readability and comprehensibility were effectively discussed in Doherty's TRI model.

In agreement with Doherty (2012), Kolahi (2012) indicated that there is a difference between readability and comprehensibility. While readability is an attribute of text and focuses on textual difficulty, comprehensibility is an attribute of the reader. In support of Kolahi (2012), DuBay (2015) indicated that readability is a text-centred variable while comprehensibility is a reader-centered variable. This means that readability of text depends on the text variables such as syntax, word complexity, font and coherence whereas comprehensibility of a text depends on the readers' motivation, abilities, environment and the state of mind. Doherty (2012), similarly, opines that readability when defined in terms of linguistic elements is operationalized as a text-dependent attribute, whereas comprehensibility (characterized as the extent to which a text was understandable) is classified as an attribute of the text which is reader-dependent.

Zamanian and Heydari (2012) were of the view that text readability depends on factors such as the average length of sentences, the number of new words it contains, and the grammatical complexity of the language used in the passage. There is however a link between readability and comprehensibility. Kolahi (2012) noted that the relationship between the two is that readability results in comprehensibility in that it is a prerequisite for comprehension.

Consequently, interaction exists between the reader and the text during the process of reading a text. As a result, readability and comprehensibility could be measured during the interaction process (Doherty, 2012). Adding to the discussion, Springer, Dole and Hacker (2017) hold the view that there is a close relationship between readers' interest, readability, and comprehension. To Springer, Dole and Hacker, when the interest of a reader is high, readability may not be a determiner of comprehension, but when the interest of a reader is low, the readability of the text tends to influence the comprehension of the text by the reader.

The relation between text readability and its comprehensibility, as well as the respective text and reader, is illustrated in Figure 1. Figure 1 provides a visual description of the conceptualisation of both readability and comprehensibility as operationalised in the current study.

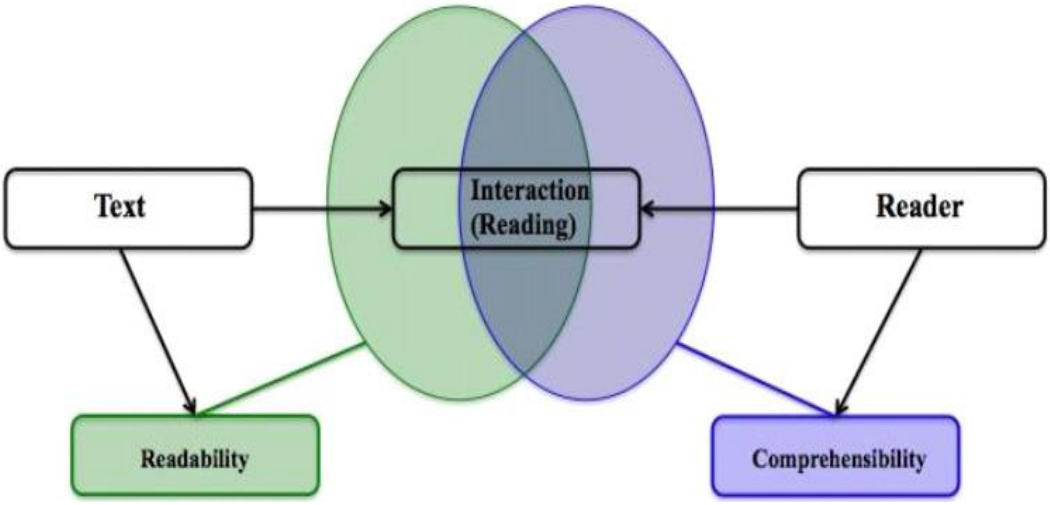

Figure 2. 1: Interaction of attributes of text and reader (Doherty, 2012:93)

A number of researchers such as Wolfer (2012) and Göpferich (2009) have paid more attention to finding out variables responsible for understanding of a text. For instance, Wolfer (2015) was interested in studying the comprehensibility of chunks of texts to answer the basic question: "Which linguistic constructions are too complex for which audience?" In order to answer such a question, Schriver (1989) classified methods of text comprehensibility assessment into three basic categories: text-focused method, expert-judgment-focused method, and reader-focused method. Göpferich (2009:32) preferred the reader-focused method which, according to him, undoubtedly provided the most reliable results on text comprehensibility because it was dependent more on the audience, whose comprehension problems were the focus of its evaluation.

Implementing such a method, Göpferich (2009:40) found that text comprehensibility could be considered from the perspectives of "the cognitive sciences, educational psychology, linguistics, communication theory, and semiotics." He suggested that comprehensibility analysis could be focused on four comprehensibility dimensions of structure, concision, motivation, and simplicity as well as two further dimensions of correctness and perceptibility. He added that the text comprehensibility was determined by the correctness of a text and the ease or difficulty (readability) with which it could be perceived and transferred to the reader's cognitive systems. In addition, Calixto (2016) emphasized that comprehension was ordinarily dependent on a wide range of perceptual, linguistic,

and cognitive processes. It could be deduced from the discussion of Doherty's (2012) Text and Reader Interactive model that there are a number of factors that affect readability and comprehensibility of a text. This makes the model relevant for the study.

Readability depends on the nature of the text. That is, readability of a text depends on the text variables such as syntax, word complexity, font, coherence among others. However, comprehensibility depends on the background and condition of the reader. In other words, comprehensibility of a text depends on readers' motivation, abilities, environment, and state of mind among others. This means that apart from readability factors, other factors such as learner's background, motivation, abilities, interest, state of mind and environment determine the understanding of a text by a reader. The model is suitable because the researcher explored other factors apart from readability that affect students understanding of a text through qualitative data.

Doherty (2012)'s Text and Reader Interactive model is related to the Schema theory. The Schema theory is built on the premise that the reader of a text makes significant contribution to the meaning conveyed by the text. That means understanding of a text depends much on the reader. That is, a text provides directions for readers as to how they should construct or retrieve the intended meaning of a text from their own previously acquired knowledge; so, comprehension is the interactive process between the reader's background knowledge and the text (Doherty, 2012; Beneyto, 2019). The background knowledge here refers to a set of related concepts useful in describing language comprehension. These concepts emanated from basic research by the combination of artificial intelligence, cognitive psychology and linguistics which is also known as the new discipline of Cognitive Science. The theory as the name suggests, is based on one of its commonly used terms- *'schemata'* which is the plural form of *'schema'*. *Schema* means a generalized description or conceptual system for understanding knowledge, how it is represented and how it is used (Beneyto, 2019).

Schemata have been called '*interacting knowledge structures' These* interacting knowledge structures are hierarchically related to one another, from the most general at the top of the hierarchy to the most specific at the bottom. According to this theory, schemata represent the knowledge about concepts and their relationship with other objects, situations, events, sequences of events, actions and sequences of actions. In effect, individuals have schemata for everything and long before they start school, they develop schemata about their experiences and these schemata become theories about reality. These theories affect how they interpret information to aid comprehension and also, the changes that occur when they receive new information (Baker, 2020).

Schema theory has several models based on reading comprehension as cognitive-based processing. A few of these models are LaBerge-Samuels Model of Automatic Information Processes: which emphasizes internal aspects of attention (alertness, selectivity and limited capacity) as crucial to comprehension (Samuels, 1994).

Another example of the models is Rumelhart's (1994) Interactive Model which states that in comprehension, information from several sources is considered concurrently so when information from one source is deficient, the reader will rely on information from another source to make meaning. Tiffin-Richards and Schroeder (2020) terms this kind of comprehension processing as Interactive-Compensatory. The Interactive-Compensatory Model claims that the reader will rely on higher-level processes when lower-level processes are inadequate for comprehension and vice versa.

The Socio-Cognitive Processing Model is another reading comprehension model of schema theory which takes the constructivists view of reading comprehension. That is, the reader, the text, the teacher and the classroom community are all involved in the construction of meaning. In support of the constructivists' view, Ruddell and Ruddell (1994:813) emphasize that 'the role of the classroom social context and the influence of the teacher on reader's meaning negotiation and construction are central to this model…'

For the purpose of this study, the Transactional and the Transactional-Socio-psycholinguistic Models of the schema theory are found the most appropriate. The Transactional model by Rosenblatt (1994) takes into account the dynamic nature of language, and aesthetic and cognitive aspects of reading. According to Rosenblatt, 'every reading act is an event, or a transaction involving a particular reader and a particular pattern of signs and a text which occurs at a particular time, in a particular context' (Rosenblatt, 1994:1063).

Rosenblatt further explains that instead of two fixed entities acting on one another, the reader and the text are two aspects of a total dynamic situation. This is based on the fundamental assumption of the schema theoretic view of language comprehension that the process of comprehending a text is an interactive one between the reader's background knowledge of content and structure, and the reader's knowledge of the text itself. It follows that the text alone does not carry meaning; it rather provides guidance for the readers as to how intended meaning should be constructed from their own background knowledge (Rosenblatt, 1994 & Beneyto, 2019). As a result, schemata are viewed as active, developing and ever changing rather than static. In effect, when readers transact with text, they are changed or transformed, as is the text. Similarly, 'the same text takes on different meanings in transactions with different readers or even with the same reader in different contexts or times' (Rosenblatt, 1994:1078). Therefore, in understanding of a text, the reader plays a very significant role.

The second model of schema theory adopted for this study is the Transactional-Socio-psycholinguistic model of reading comprehension. Building on Rosenblatt's transactional model, Goodman (1994) conceptualizes literacy processing as one that includes reading, writing, and written texts. According to Goodman, texts are constructed by authors to be comprehended by readers. The meaning is in the author and the reader. The text has a potential to evoke meaning but has no meaning in itself. How well the writer constructs the text and how well the reader reconstructs it to make meaning is what will influence comprehension. Meaning however, does not pass between the writer and the reader. It is represented by a writer in a text and constructed from a text by a reader. A combination of factors

like the ‘characteristics of the writer, the text and the reader will all influence the resultant meaning’ (Goodman, 1994:1103).

In the Transactional-socio-psycholinguistic view, the reader and the writer have important roles to play in comprehension. It is the individual transactions between a reader and the text characteristics that results in meaning. These characteristics are classified into four. The first one includes the physical characteristics such as orthography, the alphabetic system, spelling and punctuations. The second includes format characteristics such as paragraphing, lists, schedules and biographies. The third on the other hand is made of macrostructure or text grammar such as those found in telephone books, recipe books, newspapers, and letters. The fourth includes wording of texts such as the differences found in narrative and expository text. Understanding is limited, however, by the reader’s schemata, making what the reader brings to the text as important as the text itself.

Additionally, readers’ and writers’ schemata are changed through transactions with the text as meaning is constructed. Whereas readers’ schemata are changed as new knowledge is assimilated and accommodated, writers’ schemata are changed as new ways of organizing text to express meaning is developed. Relatively, Goodman (1994), explains that ‘how well the writer knows the audience and has built the text to suit that audience makes a major difference in text predictability and comprehension. However, since comprehension results from reader-text transactions, what the reader knows, who the reader is, what values guide the reader, and what interests the reader has, play vital roles in the reading process. It follows that what is comprehended from a given text varies among readers. (Goodman, 1994:1127).

2.2 The Concept of Readability

One of the eminent contributors to readability studies, Edgar Dale in 1972, asserted that readability is an old concept. Various definitions of the concept of readability have emphasised the elements in a text which were associated with comprehension (or lack of it) on the part of the reader: that is, the understanding of words, phrases and ideas in the passage.

Parts of the concept also referred to a person's ability to read a given text at an optimum speed. The concept also included motivational factors which affected a reader's interest in reading a text. According to Chen and Meurers (2018) these three elements of the definition of readability were not separate, but interacted with each other.

According to Zamanian and Heydari (2012), the work of Thorndike, '*Teachers' Work Book',* which provided a formula for assessing difficult words is one of the first extant work on readability because it was based on the assumption that words that are frequently encountered and familiar are easy to comprehend than words that are hardly encountered. This assumption therefore made word familiarity a determiner of readability of a text (Zamanian & Heydari, 2012).

Kitson (1921) was the next to publish his work- '*The Mind of the Buyer*'. In this text, Kitson explained how and why readers of different magazines and newspapers differed from one another. He also discovered that the length of words and sentences (as measured by syllables) were good indicators of readability. Kitson (1921) therefore, proposed sentence length as a determiner of readability. The proposal of word and sentence as key variables for determining readability prompted the question- how is readability measured?

The seminal works of Thorndike (1921) and Kitson (1921) were far the preliminaries to classic readability pioneered by Dale and Chall (1948), Rudolf Flesch (1948) and Robert Gunning (1952). These scholars found readability as a tool that can facilitate the production of good educational materials as well as business materials such as newspapers that will meet the abilities of the target users. As a result, readability studies began with the development of readability formulas for measuring the readability of a text based on the sentence and word length variables postulated by Thorndike and Kitson respectively.

Readability has been defined variously. Flesch (1949), provides a simple and clear definition of readability as a text that is easy or interesting to read. Similarly, Wang, (2016) views readability as the ease of understanding or comprehension due to the style of writing. Additionally, Roy, et al., (2015) opine that readability is

the level of ease or difficulty with which text materials can be understood by a reader who is reading that text for a specific purpose. Accordingly, DuBay (2004; 2015) explains readability as what makes some texts easier to read than others while Richards and Schmidt (2002), and Mavasoglu and Dincer, (2014) also define readability as how easily written materials can be read and understood.

Readability can also be considered as a means to measure the difficult nature of a text to the reader or to estimate the level of comprehensibility of written texts (Davids, 2004; 2015). Readability estimates the number of years of education one needs to have, to read and understand a text (Atcherson, DeLaune, Hadden, Zraick, Kelly-Campbell & Minaya, 2014). In addition, readability formulas are capable of measuring the relationship between the difficulty experienced when reading a text and the linguistic features, specifically word meaning and sentence structure, of that text (Du Toit, 2017 & Niemiec et al., 2018) on the web and also in a word processing programme. Biler (2019) agrees with Wang (2015) that word length, sentence length, number of syllables, and number of affixes, prepositional phrases, and frequency of difficult words account for reading difficulty.

The ability of a test to consistently measure what it is supposed to measure depends on its readability (Bitgood,1996; Reece & Walker, 1992; Atcherson et al., 2014). This definition is concerned with the interaction between the reader and the text. This implies that when a text cannot be read and easily understood by a reader, it is unreadable. Therefore, in readability, there is a relationship between a text and the reader (Fountas & Pinell, 2001; Szabo & Sinclair, 2019). However, from the writer's perspective, Mushtaq, Shakir and Ahmad (2020) defines the term readability as the ease of understanding due to the style of writing. DuBay (2004), noted that the definition by Klare separates writing style from issues such as content and organisation of the text.

DuBay (2004) indicates that readability is the sum of all those elements which a given piece of printed material has that affects the success of a group of readers. The success is the extent to which they understand it, read it at an optimal speed and find it interesting. The implication of the definitions above is that comprehensibility is essential in readability. Thus, good written material should be

highly readable in order to be clearly understood by a wide audience. In summary, readability is the degree of difficulty or ease of a text to the readers and it deals with how easily a text conveys its intended meaning to the reader of that text.

2.3 Readability and Comprehensibility

The conception of readability in terms of comprehension is captured by Crossley, Skalicky and Dascalu (2019) argue that readability is the totality (including all the communications) of all the essentials within a printed material that affects the achievements of a group of readers. The success is the degree to which they comprehend it, read it at an optimum speed, and find it interesting. Crossley et al. (2019) states the parameters that readability seeks to achieve which are comprehension, fluency, and interest. A readable text therefore reduces boredom while an unreadable text, in the words of DuBay (2015), leads to disinterest in reading. The link between readability and comprehension is much emphasized by scholars who see reading as an engaging process between a learner and a reading material. To them, a text is supposed to communicate with a reader. This informs the gradual conception of readability in terms of communication in recent times.

According to Sampson, Valmont, and Allen (2012), readability is the ability of a receiver to read and understand information from a message source. This definition considers the text's producer as the sender and the text's user as the receiver, so the authors used terms which are associated with communication model. The definition follows the general assumption about readability that presupposes that a text is readable if the receiver can read the text and understand, otherwise it is not readable.

Based on the definition by Sampson et al (2012), Okafor (2014) draws a link between reading and communication by asserting reading as one of the main sources of interaction between a text and a reader. Although readability and comprehensibility are different terms, DuBay (2015) asserts that they have a close relationship. He further explains that one main variation between readability and comprehensibility is that readability is a text-centered variable while

comprehensibility is a learner-centered variable. This means that readability resides with the text while comprehensibility resides with the reader.

Adding to the discussion, Gutierrez (2015) holds the view that readability has been seen as an intersection between writing style and ease of comprehension. Thus, a good writing style which is readable, is the bridge to comprehension. Hence, Gutierrez (2015) and Wang (2016) define readability as the ease of comprehension due to a writer's style of writing.

Torku (2012) also postulates readability as the variations between reader ability and text readability. Therefore, where a text is composed to match readers' grade, there is a great possibility that the text will be comprehensible to the reader. The concept of readability, consequently, is a key factor in teaching and learning especially with regard to selecting learning materials that are used as instructional and reference materials for teachers and students alike.

Worded differently, the readability of a text depends on the text centered variables such as syntax, word complexity, font, coherence among others but how comprehensible a text is to readers depends on readers' motivation, abilities, prior knowledge among others. DuBay (2004) considered the link between readability and comprehension as features of the new readability studies.

Adding to the discussion, Springer, Dole and Hacker (2017) hold the view that there is a close relationship between readers' interest, readability, and comprehension. To Springer, Dole and Hacker, when the interest of a reader is high, readability may not be a determiner of comprehension, but when the interest of a reader is low, the readability of the text tends to influence the comprehension of the text by the reader.

Fatirwati and Syarif (2017) also argue that it is essential to select texts that are readable to improve students' reading comprehension since a very (too) difficult text stresses readers while a too easy one does not challenge readers' abilities. Similarly, Gyasi (2017) supports the fact that the readability of a text enhances comprehension. The basic assumption here is that when a text is readable,

readers tend to understand it better than when a text is unreadable. Therefore, readability is a determiner of text comprehension.

Even though readability of a text has a bearing on readers' comprehension of textbooks, the readability formulas which are basically text-based formulas are weak in determining how comprehensible a text is to a group of readers. Therefore, the purpose of the development of cloze test by Wilson Taylor to measure the readers' comprehension of a text. It is therefore clear that when readability formulas predict that the text is difficult to comprehend, a cloze test provides reader-centered results to buttress the result. This has been used in studies such as Gyasi (2013) and Omebe (2015).

In addition, the new readability formulas such as Coh-Metrix formula measures linguistic complexity, narrative features, and the coherence of the text to assign a grade score. Flesch Kincaid Grade Level and Automated Readability Formulas for instance, focus on the grade level readers required to find text readable. All these improvement on the variables predicted using readability formulas are geared towards enhancing the link between readability and comprehension.

As established by Reichenberg (2014), Sinaga, Kaniawati and Setiawan, (2017), multiple textbooks selection with different readability measures can also help appeal to diverse students' abilities and thereby encouraging understanding of text by each student. This, to the most extent, clearly draws a positive liaison between readability and comprehensibility, even though it is undeniable that readability is a text-based variable and comprehensibility is a reader-based variable.

2.4 Readability of Online resources

In today's society, the study of readability is not limited to printed materials such as printed books, leaflets and textbooks as stated by Crossley et al. (2019), but also digitised text such as tweets, web pages among others are studied. The internet has become the primary knowledge source where numerous anxious students, patients, job seekers, travelers and teachers get their information.

Accessible as they may be, online resources that are available for users may be easy or difficult to read. This can only be determined by readability specialists.

Statista (2019), a market and consumer data company, estimated that more than half the world's population (>four billion people) were active internet users. One major sector that has much interest in consuming internet information is health. It is now the first line source of health information for many people worldwide. Similar views of Langford et al. (2019) showed that patients are increasingly accessing available information to better understand and participate in their healthcare with the expansion of health-related educational materials for patients.

Worrall et al. (2020) evaluated the readability of online information relating to COVID-19 in four English speaking regions: Ireland, the UK, Canada and the United States and compared readability of the website sources. The study revealed that only 17.2% of webpages are universally readable. Public and government organizations provided the most readable while digital media sources were significantly less readable. They recommended that since majority of the general public relied on online information during the COVID-19 pandemic, writing webpages and information tools should ensure information on COVID-19 is universally accessible and readable to increase understanding and adherence to health guidelines.

Rainie and Fox (2020) indicated that 70% of responders reported that web information influenced their decision about how to treat a condition or illness, and 81% found the information they desired through an Internet search rather than their healthcare provider. However, improved access to information does not guarantee patients a better understanding of their diseases or treatment options. Not only can they be exposed to misinformation, but comprehensible and readable educational materials are also lacking Loeb et al. (2019); Prabhu et al. (2016); Berkman et al. (2011).

A study by Kamath et al. (2020) indicates that the Readability Studio composite of eight readability assessments determined the average reading level (or grade level) of the 492 online sources, which were patient-specific educational materials

on interventional pain procedures, were examined and scored to be 12.1, with a range of 10.9 to 13. The Flesch Reading Ease assessment, which is commonly used in health literacy literature, found the text to be difficult to read.

Greywoode et al. (2009) investigated the readability of patient information on the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) website. They concluded that the average reading level for each article on the AAO–HNS site was higher than the recommended sixth grade reading level. Although the AAO–HNS site is written at a higher level than that suggested for the general public, it is important to realize that readability is just one consideration in the evaluation of OHI comprehension.

Also, Wilson's (2009) readability and patient education materials used for low-income populations showed that the variability in grade levels was noted using all measures. Mean Flesch-Kincaid Grade level was 7.01, and that for SMOG was 9.89. Mean level of Flesch Reading Ease was 63.40, an estimated eighth and nineth grade level. The SMOG consistently measured 2 to 4 grade levels higher than the Flesch-Kincaid Grade Level.

Professionally developed Patient Education Materials (PEMs) had significantly higher reading levels using both SMOG and Flesch-Kincaid Grade Level and they were more difficult to read using Flesch Reading Ease when compared with those prepared by individual providers. Wilson concluded that PEMs were written at a level too high for the average adult.

Walsh and Volsko (2008) analysed the readability assessment of internet-based consumer health information. It was revealed that most of the articles exceeded the 7th-grade reading level and were in the United States Department of Health and Human Services (USDHHS) difficult category. The mean SD readability score ranges were: SMOG 11.80 ± 2.44 to 14.40 ± 1.47, Flesch-Kincaid 9.85 ± 2.25 to 11.55 ± 0.76, and Gunning FOG 13.10 ± 3.42 to 16.05 ± 2.31.

The articles from the American Lung Association had the lowest reading-level scores with each of the readability-assessment tools. They suggested that Web-

based medical information intended for consumer use, is written above USDHHS recommended reading levels. Compliance with these recommendations may increase the likelihood of consumer comprehension.

2.5 Factors affecting Readability of Texts

Freahat (2014) believes that the readability level of a text should be influenced by some factors including: (a) the average length of sentences in a passage, (b) the number of new words a passage contains, and (c) the grammatical complexity of the language used.

Freahat (2014) mentions factors that influence readability to include content, vocabulary, structure, typography, and illustration. Other factors have been discussed by some readability scholars as ones that influence the readability of a text. The traditional variables that have existed over the years are average sentence length and average word per syllables.

In addition, DuBay (2015) asserts that writers can improve the readability of their text by using familiar words, accurate spelling, correct grammatical and simple sentence structures, culture-and-gender-neutral language, punctuation, active voice, and present tense. Even though DuBay's list of factors are all not about average word per syllables, nor average sentence length variables, the fact that the factors still consider the linguistic aspect of readability is undeniable.

Zamanian and Heydari (2012) similarly suggests that a text readability depends on many factors including the average length of sentences, the number of new words it contains, and the grammatical complexity of the language used in the passage. These factors are greatly centered on the fact that writing style is a prime determiner of readability and hence the factors are based on linguistic variables that determine readability.

Critics such as Zantoni (2018) argues that the definition of readability focuses solely on writing style which concentrates on the syntactic and lexical elements and excludes issues such as content, coherence, and organization in the text. This assertion by Zantoni (2018) is weakened when other factors that influence

readability are considered. According to DuBay (2015), coherence, cohesion, illustrations among others are other text-centered variables that influences the readability of a text. For instance, Kasule (2011) argues that the view of reading as an interactive process implies the presence of text-based, reader-based, and author-based factors regarding readability. According to Kasule, the text-based factors are those identified by DuBay (2015) to be content, style, design, and structure. The reader-based factors, are those factors that affect the reader such as motivation, interest, prior knowledge, and the style of reading (DuBay, 2015). The author-based factors as stated by Kasule (2011), are the purpose, the motivation and the beliefs of the author that may influence an author's text production. Kasule explains that these three factors when appropriately handled, will improve readability greatly thereby enhancing effective communication between the author and the reader through the text. This consideration of text-centered factors, reader-centered factors and author-centered factors is of great importance to textbook readability since students are supposed to engage in interactive reading to enhance comprehension of the text.

2.6 Effects of Readability on Readers

The readability level of a text gives impact on reading fluency. If the text is beyond the level of the readers, they become frustrated and feel discouraged to read the text. Some authors believe that the readers should at least understand 97% of words on a page for easy comprehension of the text. (Tasaufy, 2017; Westwood & Holliday, 2019).

Bashir and Mattoo (2012) argue that readability determines the academic achievements of students. According to Bashir and Mattoo, readability of a text involves processing, interpreting, and evaluating ideas in a text and this promotes logical and critical thinking skills. This is because an easy-to-read text, motivates students to learn and this helps them to acquire information, skills, values, attitudes and knowledge. Easy reading therefore helps to improve learning (Fry, 2006). Most students are reluctant to read English texts because they feel that those texts are difficult to understand since many difficult words can be found in them. Some students also argue that certain English texts are too lengthy and too

boring to read. These two problems are related to readability levels as explained by Bashir and Mattoo, (2012).

Other factors as explained by Peng (2015) also affect readability of a text. In his study, Peng (2015) investigated whether adopting a more readable textbook can have a positive impact on students' performance in an online introductory corporate finance class. The study revealed that age, major programme, students' bachelor's degree obtained, and the number of students' working hours appear to significantly affect students' performance.

2.7 Readability of English Language Textbooks

English Language has become one of the most used, if not the most, instructional language in the world 'English has been lauded as the most 'successful' language ever, with 1,500 million speakers worldwide'' (Crystal, 2003:1). Studies have established that the teaching of English Language especially for academic purposes has become relevant especially in ESL countries. Among the studies to be reviewed are general studies on English Language Learning textbooks, Content Subject textbooks and particularly, research conducted on English Language textbooks written in Ghana.

2.7.1 Readability of English Language Learning Textbooks

In most English-speaking countries including Ghana, instructional materials in the form of textbooks are key materials that aid teaching and learning of the Language. Textbooks can be assessed and prescribed by the educators and developers of curriculum to be used for achievement of the goals of the curricula, but majority of these textbooks are also equally important learning materials for students and teachers even if those textbooks are not assessed and prescribed by the appropriate authorities.

In Ghana and many other countries, the readability of these textbooks, whether assessed and prescribed textbooks or not has become an issue worth investigating because of the growing level of abysmal performance of students in the annual national assessment of students (Torku, 2012; Gyasi, 2013; Owu-

Ewie, 2014). This section captures studies on the readability of English Language Learning textbooks.

In the views of Fitrawati and Syarif (2017), readability suggests that content is clear, well expressed, and suited to the readers. The authors studied the readability of English Language textbook for SHS students in West of Sumatera, Indonesia. Fitrawati and Syarif (2017) used the Flesch reading ease to measure nine (9) chapters of the English Language textbook *"Look Ahead: An English Course"* textbook written by Sudarwati and Eudia Grace for SHS students in year twelve (12). Before running the readability test, the researchers prepared the sampled texts to comply with readability test features for easy measurement.

Fitrawati and Syarif discovered that the readability index of the book was within a range of fairly easy to read and fairly difficult to read. Another finding of the study was that two texts were very easy to read with Flesch Reading Ease scores of 94.3 and 82.5; another two text fairly easy to read with Flesch Reading Ease scores of 77.1 and 71.5; and one had standard Flesch Reading Ease score of 62.9. One text was fairly difficult to read with Flesch Reading Ease score of 50.3 and four texts were difficult to read with Flesch Reading Ease scores of 41.0, 31.7, 46.9 and 46.1. These varied scores were based on each chapter's score. Applauding chapter analysis of readability, Kasule (2011) maintains that a readability of textbook should be measured chapter by chapter since each chapter deals with new concepts. The different readability scores for each chapter in the study conducted by Fitrawati and Syarif (2017) reveals the truth in Kasule's (2011) assertion.

The findings of Fitrawati and Syarif's (2017) showed that the textbook was suitable for the readers. Even though the average result showed that the readability index was fairly difficult to read, only one text was appropriate for that level in terms of the individual chapter measure. In accordance with Flesch Reading Ease Formula, the appropriate readability index of a textbook should be 12^{th} grade which is meant for SHS students. The 12th grade level should match a text that is fairly difficult to read with the range of Flesch Reading Ease Score of 50 to 60. The researchers recommended that the texts that are very easy, fairly

easy and difficult to read should be revised to the 12th grade level to meet the learner's ability. The above recommendation of texts is in line with the assertion made by Kasule (2011) that a very difficult text will turn readers off, but a very easy text will not challenge readers enough. In support of Kausle's view, Fitrawati and Syarif (2017) suggests that authors of textbooks and text developers should consider the readability of the texts to determine its suitability for students in order to aid easy comprehension and interest in reading with less overwhelming challenges.

In his doctorate thesis, Torki (2012) explored the relationship between learners' lexical coverage and the readability levels of the Algerian English textbooks. The study covered seven English as a Foreign Language (EFL) textbooks. The researcher's purpose was to examine if the leaners' vocabulary coverage matches with the readability of the textbooks (thus independent reading level), or whether it is below the textbook readability level, (thus frustration reading level) or above the textbook readability level (instructional level). Torku (2012) discovered that the lexical coverage and readability of the textbooks was generally low, hence students read the textbooks at frustration level.

Torku also compared the lexical coverage of the seven EFL textbooks used in Algeria to the standard West's General Service List and Coxhead's Academic Word List. His findings revealed that the lexical coverage of the EFL textbooks was generally insufficient and below international standard. Based on this finding, Torku (2012) recommended a revision of the textbooks to include sufficient lexical base. Torku's recommendations seems to resonate with Kasule's idea that a less challenging text discourages readers while challenging texts can boost readers' interest. However, the suggestion made by Torku (2012) contradicts that of Johnson (2017) in that Johnson proposes the reduction of word load in science textbooks as it affects its readability. Comparatively, it can be concluded that the differences in the two findings may be due to the different subjects' studies. Nevertheless, the two authors-Torku and Johnson seem to suggest that a textbook must not be overly challenging for its targeted reader (Kasule, 2011).

Shah, Majeed, Waheed and Anjum (2013) used two designed questionnaires to collect views of students and teachers on their assessment of the English textbooks used in Pakistan. The responses of students revealed that physical attractiveness of textbooks does not count much to students' use of textbooks, rather the content of the textbooks does. The students, however, stated that the grammatical structures and content of the books were not sufficiently explained. The teachers' responses also indicated that the textbooks were inappropriate and boring to the students. The authors concluded that the books are not written to meet the needs and requirement of learners.

Ereke and Okonkwo (2016) explored Nigerian SHS students' readability and comprehension of expository writings using cloze test. According to Ereke and Okonkwo (2016), cloze test is a scale for assessing students' comprehension in English Language. The researchers found that the students' performance in the comprehension of expository texts over the period has been low. This has reflected in their performance in external examinations hence, there is the need for educators to implement cloze procedure as a means to help counter the learners' challenge with expository texts. The co-authors, Ereke and Okonkwo, therefore established that four effective strategies were needed to boost students' readability and comprehension of expository texts. The strategies included activating background knowledge, questioning, analysing text structure and creating mental images.

The proposed strategies of Ereke and Okonkwo (2016) are in agreement with Lei, Rhinehart, Howard, and Cho's (2010) six practical strategies for improving college students reading comprehension. They suggested providing students with non-reading background knowledge or experience, developing homework and class work that require the use of textbooks, providing study guides and learning aids to students, encouraging students' application of the SQ3R (Survey, Question, Read, Review and Revise) method of reading, organising peer learning and teaching and, finally using the concept of cognitive mapping and outlining. No matter how effective these strategies were to improving reading comprehension, both authors, Ereke and Okonkwo (2016) concluded that readability of the textbooks can render them ineffective. Hence, the efficacy of reading strategies to

achieving reading goals largely depends on the readability of the text (Lei, Rhinehart, Howard & Cho, 2010).

Hidayat (2016) studied the readability of English Language textbooks used in Indonesian secondary schools. The selected textbook which is widely used according to Hidayat is *Kukulum* textbook. Using Flesch Reading Ease, Hidayat determined the readability of the textbook and found that the textbook had a Flesch Reading Ease standard score of 60.69. He then concluded that the textbook was suitable for the eleventh-grade Indonesian students.

In addition, Hassan, Nayernia, Nemati and Mohebbi (2016) described readability of English for Specific Purpose (ESP) textbooks in Iran as a neglected issue or a taken-for-granted one. Hassan et al. (2016) selected 11 ESP textbooks and randomly sampled 51 texts out of the selected 11 textbooks for the readability analysis. Using seven readability formulas namely: Flesch Reading Ease, Gunning Fog Readability, Flesch-Kincaid Grade Level, The Coleman-Liau Index, The SMOG Index, Automated Readability Index, and Linsear Write Formula, Hassan et al (2016) assessed the readability of the texts. They found that the textbooks were fairly difficult, difficult, and very difficult to read according to the readability formulas scores. The results showed that 54% were appropriate for Senior High Schools, while the remaining 46% were above SHS level but appropriate for college level. They concluded that in terms of readability the textbooks were not appropriate for Iranian universities who are Second Language English Learners. This buttress their description of readability of ESP textbooks in Iran as a neglected area and therefore there is a need for in-depth consideration of the area.

This study by Hassan et al (2016) is in line with Torku (2011) who also recommended that ESP books for Zambia should be revised to include sufficient vocabulary. Hassan et al (2016) made some recommendations based on the findings of previous studies they conducted in Iran where the tri-partite problems regarding ESP course in Iran were outlined as: the teacher, time, and the textbooks used. According to Dhomanis, Hayati, and Hambali (2018), Iran has no

specially trained language teachers to teach ESP and the time devoted to ESP course is minimal.

2.7.2 Readability of English Language Textbooks in Ghana

In Ghana, Owu-Ewie (2014) studied the readability of comprehension passages in English language textbooks. The researcher used multiple readability formulas which are Gunning FOG Readability, Flesch Reading Ease, Flesch-Kincaid Grade Level, SMOG Index, Coleman-Liau and Automated Readability Index formulas to determine the readability of 48 comprehension passages of JHS 1-3 English language textbooks.

Owu-Ewie discovered that most of the passages were above the grade level of students and as a result difficult for them to read and comprehend. He, therefore, recommended that the readability of textbooks be considered in the selection of textbooks for studdents. He recommended the use of multiple readability formulas as effective in determining the readability of text because each formula makes for the lapses of the other. Even though analysing multiple readability formulas is complex and relatively demanding compared to using a few, the use of multiple formulas allowed for comparative analysis of the results. In fact, Hassan et al (2016) used seven formulas just like Owu-Ewie (2014) did. Moreover, the use of web assisted sites, such as Automated readability score link to analyse the readability of a texts makes getting the results for more than one formula possible and easier, unlike in the past where researchers used manual calculation to generate readability scores.

Furthermore, Gyasi (2018) examined the readability of four English language textbooks used in Ghanaian Senior High Schools. The researcher used the Flesch Reading Ease and Flesch Kincaid Grade level to determine the readability and the grade level readers required to understand the textbooks. Based on the result of the readability formulas used, the researcher discovered that the readability of the textbooks was in a range of fairly difficult and very difficult to read. Since the researcher examined the readability of the textbooks chapter by chapter as recommended by Kasule (2011), the researcher discovered that the most difficult to read chapters were the summary and objectives parts. This was

consistent with Owu-Ewie's findings that comprehension and summary passages used in textbooks among Junior High Schools in Ghana were also difficult to read.

Gyasi (2018) also discovered in his study that readers required at least 11 years of formal education to read and understand the least readable textbook. He therefore recommended that stakeholders consider the readability of textbooks in order to encourage plain language writing in composing textbooks for students.

In another study by Gyasi (2018), he examined the readability of three course books used by diploma students at the College of Distance Education, University of Cape Coast. He used Flesch Reading Ease and Flesch-Kincaid Grade Level to measure the readability of the textbooks. He discovered that the average coursebook was largely difficult to read with each students requiring at least 17 years of education in order to understand the coursebook. The researcher concluded that the textbooks were inappropriate for the students especially considering the fact that the students are second language learners and, they are not considered as proficient as compared to native language students. The researcher discovered that the average syllables per word was 1.48 across all three manuals, which implies that each sentence in the manuals is between 31 and 37 syllables per sentence. This means that the authors of the manuals used complex sentence structures hence worsening the readability of the manuals.

Gyasi (2018) made another recommendation for the revision of the books to conform to students' grade level of 13th to 16th. This study added the variables of sentence length and average word per sentence as key aspects to recommending revision for textbooks to be readable.

2.7.3 Readability of Content Subject Textbooks

Readability of textbooks that are related to English Language are relevant to provide a complete picture of how textbooks and reports have been studied over the years. According to Scheneider (1991), studying the readability of textbooks is relevant because it reveals how readable textbooks can be in helping increase readers' interest, acquiring learning skills for further studies and ensuring 'at-risk' students cope with textbooks.

Scheneider (2011) examined the readability of college public speaking textbooks. Scheneider sampled 22 nationally published public speaking textbooks for his study. Unlike Kasule (2011) suggestion of measuring textbooks chapter by chapter, Scheneider (2011), observed that in each chapter, the introductory sections and chapter summaries are statements of the concepts hence, they were excluded from the readability analysis because they are not indicative of a writer's style. The mean number of words for all the sampled texts was 2,063.14. Scheneider then prepared the sampled texts from each textbook and run the SMOG readability analysis of each textbook. Schneider (2011) found that the average readability score of all the 22 textbooks was 15.66, meaning an average public speaking textbook requires a reader to have attained 15 years of formal education which is college level to find the texts comprehensible (Mohebbi, 2017; Huang, Chen & Sun, 2018). In specific terms, Schneider found that 22.72% of the sampled textbooks match the 12^{th} grade level of reading, and 45.45% of the sampled textbooks match the college freshmen level of reading, while the remaining 31.81% of the sampled textbooks was above the college sophomore level of reading. This implies that the textbooks spanned three grade levels.

2.8 Readability of Exam Related Materials

Most textbooks help students in their preparation for examination. Readability scholars tried to examine the exam texts. Dragan and Woo (2010) studied the readability of National Nurse Aide Assessment Program (NNAAP) examination texts. According to the authors, the NNAAP test is designed to assess the knowledge, skills, and abilities that are crucial for safe and effective work as a certified entry to nurse aid or nursing assistant in Iran. Dragan and Woo used the Flesch-Kincaid Grade Level readability formula to measure the multiple-choice item of the test to determine the grade level candidates require to find the text readable. The researchers found that the Flesch-Kincaid Grade score was between fourth grade to sixth grade. This means that the test was very readable for the candidates. The researchers therefore proposed that readability analysis be included in all licensing and certification of testing programmes.

Aziz and Uri (2018) explored the readability of national exam on English passages in Malaysia. The researchers used Flesch Reading Ease, Gunning Fog Index and

Coh-metrix Reading Index to measure the readability of the selected passages. The scores of the formulas revealed that the sampled passages were readable with Flesch score of 66.4-80.6, Gunning score of 6-10.1 and very readable Coh-metrix score. The researchers validated the scores of the formulas by allowing five expert readers to examine how easy the text is to read and understand. The independent experts confirmed the scores of formulas that the texts were readable and interesting. The researchers concluded that the selected passages were appropriate for the test. This finding is consistent with the finding of Dragan and Woo (2010) that the multiple test questions were very easy read and comprehend.

2.9 Textbooks Selection

Selecting the right textbook at the right time for the right reader is a difficult task for teachers, educators, parents, librarians and even students themselves. This is due to the non-uniformity of criteria used. While the content, the purpose, the author, and many factors are critical in textbook selection, so is the fact that textbooks are mostly measured to be difficult to read and hence, worth suggesting that readability be considered a factor in the criteria for selecting textbooks for students. It has been stated that over ninety five percent (95%) of teachers rely on textbooks for science instruction (Groves 1994; Kher, et al., 2017).

Groves (1994) discovered that the average science student thinks of science as a body of facts to be memorised therefore, using textbook becomes the best option to understanding the concepts and scoring good grades. It is evident that textbooks therefore are primary sources of information to students and teachers alike. Furthermore, Groves stated that most criteria for textbooks selection is based on how the book covered the syllabus, pedagogical approach, supplementary materials, and faculty's past experience. This list however, sidelined readability. Groves (1994) therefore concluded that owing to the vocabulary complexity of the science textbooks, the need to select multiple science textbooks with different readability levels to meet readers' abilities is very cogent. The same can be said of other textbooks for different subjects. This is because, readability studies of English textbooks produce similar results of the books as being difficult to read (Gyasi, 2013; Owu-Ewie, 2014).

With regard to the above, Pulido (2007) suggests that in selecting a textbook, the following variables should be considered: the readability level of texts, appropriate use of illustrations, using clear subtitles, and using appropriate connective words and phrases. Pulido's list considered coherence and readability in a mild way as factors to be considered in selecting textbooks for students.

Still adding to the topic, Arias (2007) found three factors to be considered in selection of textbooks for students. These factors are suitability of content, that is how the content meets the needs of students; the exploitability of the textbooks, that is how the content helps students to explore the language skills as well as other allied skills; and finally, the readability of the textbooks, that is the text should have lexical and structural difficulty that will challenge without overwhelming students.

In Aria's view, the suitability, exploitability, and readability are the three encompassing variables for textbooks selection while Richardson (2012) posits that the selection of textbooks should consider factors such as student's interest, students' needs, students' background knowledge, relevance of the content, and authenticity of the content.

Ali (1999) maintains that in all good quality textbooks, information is presented on the bases of moving from known to unknown and from the least difficult to the most difficult and often using examples drawn from the environment of the students. It is therefore succinct that readability is a core factor in the selection of textbooks for learners. It is also argued that classroom teachers are the best available assessors of any mismatch between the linguistic competencies demanded by the text and the resources available to their learners. Therefore, action research into the readability of school textbooks, particularly in English, would inform their decisions regarding the appropriateness and sequence of textual content. Moreover, using cloze text before or after lesson is relevant to discover learners' difficulties in order to device ways to help them.

2.9.1 Textbook Analysis

Throughout the world, there has been several researches that concern assessment on the readability of textbooks (Flory, Phillips, & Tassin, 1992; Plucinski, 2011; Tinkler & Woods, 2013; Wayland & Daily, 2015). Particularly, results from such studies reveal that learners in elementary and high school levels in recent times underperform in almost all subjects of study.

One of the major factors that is believed to account for the underperformance of learners at this level, is the difficult nature of most textbooks (Singer & Tuomi 2003; Sibanda, 2013) and this has raised the question of who is or are responsible for selecting textbooks for schools at these levels. As a result, several studies on textbook selection in schools are conducted by organisations and individual teachers. (Azizfar, Koosha, & Lotfi, 2010; Dahmardeh, 2009; Aliakbari, 2004).

For instance, a study by Schultz (2014) indicates that several teachers select textbooks based on their subject coverage, appropriate level for students, inclusion of supplementary materials, reputation of the author, and many other reasons. When organisations and teachers find a textbook that they like and believe is effective, they adopt that textbook until either the selector's criteria changes or perhaps when they are presented with a product that is perceived as "better" (Durwin & Sherman, 2008). Some researchers also argue that teachers are not always the best judges when it comes to selecting textbooks for their schools (Landrum, Gurung, & Spann, 2012). Their perception is that teachers were exceptional students during their school days and do not necessarily represent the audiences they are teaching. Besides, their assessment may also be disadvantaged by their past knowledge of the subject material, of which, most of their students are lacking (Durwin & Sherman, 2008).

One main factor that can improve textbook selection is student preference Schultz (2014). This is because studies conducted by Berry et al. (2011) and Schultz, (2014) have shown a decrease in the amount of time students spend reading. The study also shows that students' preference, is a factor that affects how much time students spend reading their textbook as such any factor that can encourage

students to read should be considered. Another study also indicated that readability was one of the factors that lead to higher levels of student satisfaction with their assigned textbook (Durwin & Sherman, 2008).

Schultz (2014) and Odo (2018) mention that readability research has shown an inverse relationship between students' performance and the texts they read. They found that students who use textbooks with higher readability scores had lower course averages. The authors also found a strong relationship between the difficulty of the course textbook and the number of withdrawals from the course. The readability of a textbook could become increasingly important because the number of students who need reading and writing remediation is increasing.

Readability analyses run in the United States of America, by Cheawjindakarn, Suwannatthachote, and Theeraroungchaisri (2012), showed that a well-designed and well-written textbook helps instructors design course content to provide a meaningful educational experience, and this helps to improve students' learning outcomes.

In another instance, Berry, Cook, and Stevens (2011) explored the extent to which students use their finance textbook and how this relates to their study process when preparing for class and exams. The study revealed that students lack the interest to read their textbooks because its content was not readable and as a result, their contributions in class and performances in examinations appear to be stunted. This goes to buttress the point that though many factors prevent students from reading their textbooks, readability of textbooks is one of the internal variables that instructors could control.

Furthermore, readability studies have been conducted by many researchers in Europe as well. Gibbons, Dail, and Stallworth (2006) and, Watkins and Ostenson, (2015) investigated the ease of comprehensibility of printed and non-printed documents of English language learners. They found that while reading textbooks, learners did not use the same strategies to read printed and non-printed documents. Learners seem to understand non-printed materials better than printed materials. This suggests that the ease or difficult nature of a text to

readers may not necessarily be caused by the readability score of the text but by the form in which the text is presented (printed or non-printed).

In addition, Wissing, Blignaut and Hattingh (2016) assessed the suitability of an introductory accountancy textbook to its readers. Readability scores of the texts showed that the texts were within the level of readers. On the contrary, students who read the text complained that the lexical items were very difficult to comprehend. In this regard, there seem to be contradiction between students' performance on one hand, and readability and comprehensibility on the other.

Sibanda's (2014) study is one of the many readability studies conducted in Africa. Sibanda's analysis of two Grade 4 natural science textbooks for South African schools revealed that both books are above the intended readers' reading levels. As a result, Sibanda argues that textbooks that are beyond learners' reading competence, including their comprehension level and vocabulary acquisition, only result in frustration that will not lead to learning. This is because active processing is unlikely to take place. Accordingly, textbooks ought to be pitched at the right level of reading competence.

Rotich and Musakali (2006) looked at the role of the ministerial textbook vetting committee (MTVC) evaluation and selection of school textbooks in Kenya. The study revealed that the technical specifications of the approved textbooks that were given to publishers were very stringent and could not be met by most publishers. Some of the textbooks which were approved were not in conformity with the required standards. This could have been due to the evaluation of dummies as opposed to the actual textbooks to be used. The research also found out that after evaluation and approval of the dummies, there seemed to be no follow-up by the MTVC to ascertain if the textbooks that go to the market meet required standards. At the same time, there seems to be more emphasis on the technical specifications as opposed to the contents, thus locking out books whose dummies did not meet the minimum technical specifications but with good contents.

Namusaka (2018) focused on renewing textbooks to align with reformed curriculum in Uganda. Namusaka analysed Ugandan textbooks in terms of content structure and genre, and presentation of written and non-written voice and looks (appearance). Findings indicate that certain Ugandan mathematics textbooks used the narrative form, whereas others chose to eliminate the use of extensive text.

2.9.2 Textbook Evaluation

Textbooks are considered as an essential component of any English as a Second Language Learner course and thus the selection of the best suitable book for a particular context demands careful investigation hence the issue of readability being one of the most important factors to consider. A textbook for English Language learning can be referred to as a published material specially designed to help language learners to improve their linguistic and communicative abilities (Nurhamsih, 2017).

The use of textbooks provides teachers with guidelines concerning syllabi, teaching methodologies and the materials to be taught. The content in the textbooks should be persuasive enough to induce all the requisite skills suited to an esteemed society in the students. If the textbook is too advanced or too simple for the students, the teacher will inevitably be faced with problems as students may find the text difficult to read and comprehend. Thus, in the selection of a textbook, it is important to conduct an evaluation to check the suitability of the text to the learner. In addition to being learning materials, textbooks are also used as supporting teaching instruments.

The term evaluation generally applies to the process of making a value judgment. According to Yemi (2020), Evaluation is the matter of judging the fitness of something for a particular purpose. In education, the term evaluation is used in reference to operations associated with curricula, programmes, interventions, methods of teaching and organizational factors. It is a sophisticated concept which includes the phases of selecting the information, analyzing, transferring, using, and deciding on the quality of the curriculum. Curriculum evaluation is a necessary and important aspect of any national education system. It provides the

basis for curriculum policy decisions, for feedback on continuous curriculum adjustments and processes of curriculum implementation.

Hermansyah (2019), in his description of evaluation processes, maintains that it should be focused on gathering and reporting information that could help guide decision making in an educational program and curriculum development. Therefore, evaluation of textbook is also considered to function as a kind of educational judgement.

Sharing views on the same subject, Yolanda (2018) also considers evaluation of textbooks, an important activity for both teachers of English and writers of English Language textbooks. As explained by Yolanda, most of the teachers are concerned with selection of the textbooks for predictive evaluation. However, majority of the teachers are not even aware of retrospective evaluation, which is on-going evaluation of the textbooks after the books are selected for use.

Nurhamsih (2017), in support of the evaluation, explains the two major reasons why it is important to evaluate textbooks. First, the evaluation is expected to help the teacher or the programme developer (writer) to select wisely the most appropriate textbook suitable for his or her learner's age and comprehension. Second, the evaluation of the textbook is to expose the teacher to the weaknesses and the strengths of the textbook so as to allow easy and suitable modifications and adaptations of the materials in future when the need arises.

In this context, it is essential to state that Cunningsworth (1995) and Ellis (1997) identify three types of textbook evaluation that is key to the readability of textbook: the pre-use, in-use, and the post-use evaluations. In their identification of three types of textbook evaluation, Cunningsworth (1995) and Ellis (1997) explain evaluation of textbooks for "pre-use'' purposes as one that aids teachers in selecting the most suitable textbook for a particular language classroom. "In-use" evaluation on the other hand, helps the teacher to investigate the weaknesses or the strengths of the textbook while it is being used. The last type of evaluation, "post-use", aids the teacher to reflect on the quality of the textbook after it has been employed in different learning situations.

Cunningsworth (1995) and Ellis (1997) maintain that it is rare to find a criteria that may be appropriate and applicable in all teaching and learning situations because when the concern is the evaluation of textbooks, the selection of the criteria may be quite subjective. Similarly, Nurhamsih (2017) points out that no one is really certain about what criteria and constraints are actually operative in English Language Teaching context worldwide, and the textbook criteria are empathetically local. The nature of the teaching and learning environment may differ from one context to another, as Nurhamsih (2017) emphasizes that global list of criteria can never apply in most local environments, without considerable evaluation. It is therefore imperative to take into consideration the needs and the interests of the learners in distinctive learning situations while deciding on the criteria for evaluating textbooks.

The study by Fredriksson and Olsson (2006) focused on the criteria used by teachers for selecting English Language textbooks. The study which was mainly qualitative examined the methods teachers of English Language used in one specific upper secondary school to solve the task of selecting English Language textbooks. The research revealed that the most important criteria to consider in selecting textbooks for learners is to ensure that the text is an interesting and relevant one that they can relate to. Texts which are interesting and from different backgrounds are considered very significant for both teachers and students.

Similarly, Perveen (2011) also conducted a study to evaluate the curriculum at the primary level in the light of education policies and plans in Pakistan. In her research, Perveen was interested in investigating the extent to which the objectives of the curriculum at the primary level are achievable and for that matter, she analyzed different education policies and plans regarding the achievements of the objectives. It was discovered that the objectives of the curriculum were not fully achieved because the procedure of the implementation of policies and plans regarding the curriculum remained weak.

In addition, Nurhamsih (2017) asserts that textbooks generate a range of reactions which are responses that fluctuate between two extremes. On one hand, the books are judged to be valid, useful and labour-saving tools. On the

other hand, it is held that textbooks are “masses of rubbish skillfully marketed” (Seangpakdeejit, 2020).

Nurhamsih (2017) identifies three main reasons why the textbooks are so heavily utilized. First of all, teachers find developing their own classroom materials an extremely difficult, arduous practice. Secondly, teachers have limited time in which to develop new materials due to the nature of their profession. Thirdly, external pressures restrict many teachers.

On this score, Aftab, Sheikh, and William (2014) analyzed and evaluated the textbook “Prose and Heroes” and explored the degree to which it benefited both learners and teachers. The purpose was to contribute to the improvement of English Language programmes in Pakistani colleges. The study was exploratory and descriptive in nature. For the analysis, questionnaires and semi structured interviews were used as a tool. The results revealed that the relevant textbook did not cater for the needs of learners.

Furthermore, Hatoss (2004) used a model to assess language textbooks in terms of their adequacy in teaching culture and developing intercultural skills. The model was based on theories of culture, theories of language learning and three dimensions: input, method, and aims. She recommends that a textbook should represent the culture of the target society and evaluation criteria should also focus on the cultural aspects given in the textbook. Hatoss (2004) believes that models are necessary to provide conceptual framework for designing a particular evaluation depending on the specific purpose of the evaluation. The models, she agrees, may differ in many of their details. However, the decision to choose an evaluation model depends on a few important factors such as the evaluation of questions, the availability of resources and the issues to be addressed.

According to Susiati and Mufidati (2020), McGrath (2002), discusses the methods of evaluating a textbook in his book--‘*Materials Evaluation and Design for Language Teaching’*. McGrath refers to one of the methods as the checklist method, where essential criteria are listed and systematically checked off. Other methods are the impressionistic and in-depth methods where, textbooks are

chosen for thorough examination. McGrath (2002) equally recommends pre-use evaluation, in-use evaluation, and post-use evaluation. This means that the textbook should not only be evaluated before being used, but constantly while it is in use and after it has been used. McGrath's basic explanation of textbook evaluation concerns the discovery of whether what you were looking for was there. When found, you then need to put a value on your findings.

In addition, Tomlinson (2008) offers a short summary of the history of textbook development. He gives two reasons why the interest in textbook development increased. One was the realization that by making teachers aware of the process of textbook development, it would be easier for them to understand and apply theories of language learning. It would also help teachers to develop personally, and professionally. The other reason was the understanding that no course book can be suitable for any kind of learners. Therefore, teachers need to evaluate, adapt and produce textbooks that would be appropriate for their particular class.

A study conducted in the Saudi Arabian context by Alamri (2008) attempted to evaluate the quality of the sixth-grade English language textbook for Saudi boys' schools which was introduced at the elementary stage by the Ministry of Education in 2004. A survey questionnaire was used in this study about the textbooks in question. After the data was subjected to analysis through descriptive statistics, it was established that there was a general satisfaction of teachers and supervisors concerning the book's general appearance, design, and illustrations, accompanying materials, set objectives, topic appropriateness and language components. The results also suggested that there was lack of varied and attractive illustrations that would stimulate creativity, and lack of topics which would stimulate critical thinking.

Another study on the book "Spot on" by Tok (2010) at the primary level in Turkey, revealed some positive and negative characteristics after evaluation. The good quality of the book was that it has varied cultures which were very useful to teachers. On the other hand, it had some disadvantages of being underdeveloped and lacking interesting activities. Also, the activities were less communicative and did not provide user friendly materials to help achieve the objectives.

Furthermore, Cakit (2006) who explored students and teacher's perspectives on the textbook for ninth grade high school students disclosed after his investigations that both groups of participants held negative notions regarding majority of the features of the book. The most salient issues the paper proposes include the need for simplifying reading passages in terms of vocabulary and structures, adjusting the level of materials with the age of learners, and considering different learning styles preferred by learners.

To check the extent of suitability and effectiveness of textbooks, Zohrabi (2012) evaluated the merits and demerits of *English for high school freshmen* in Iran from the viewpoints of teachers and students. He focused on the layout, vocabulary, topics and content, exercises, skills, pronunciation, function, social and cultural activities. The results of the investigation pointed out that the book was grammar oriented and more emphasis was placed on reading to the neglect of the three other skills, insufficient practice for pronunciation with respect to target culture, social and cultural activities were excluded and the layout of the book was believed to lack beauty.

A study was conducted by Karatas and Fer in (2009) to evaluate English II curriculum at YTU using Context, Input, Process and Product (CIPP) model. In this research, the data was analyzed using the technique of independent samples t-test. From the responses, it was concluded that mostly, teachers and students tend to support all four of these curriculum components. However, significant differences have been observed between the means of teacher's and students' opinions concerning certain items related to the context, input, process and product component of the curriculum. This result indicates that while the students' perceptions are higher, the teachers' expectations are higher for the items regarding the components of the curriculum. According to the findings obtained from the teachers' opinions, it is essential that audio-visual materials be varied and implemented properly in the activities.

2.10 Textbooks and Readability

One important thing to be considered in a reading activity is the text. To improve students' reading comprehension, teachers need to prepare the appropriate

reading texts for the students. According to Sawyer (1991) and Sinaga et al., (2017), textbooks are primary learning tools given to students, and therefore investigating the textbooks' readability is of primary importance to educators and students alike.

The notion of reading as an interaction between a text and a reader is making readability a key determiner of how a reader interacts with a textbook. Drawing from cognitive and linguistic theories, scholars are positing that reading is a complex cognitive activity which involves simultaneous linguistic processing and activating of prior knowledge, storing information, and monitoring comprehension. Therefore, there is the need for authors to prepare text with readers in mind by matching the readability of the text to readers' abilities.

Mohebbi (2017), De Franco, Hope, Vyas, and Zhou (2015) present three operationalizations of text difficulty namely text-based (objective), performance-based (behavioral), and a combination of the two (subjective). Readability as a text-based approach considers text difficulty as characteristics of text such as syntax and vocabulary which are inherent in the text itself.

As noted by DuBay (2015), a very difficult to read text can turn readers' interest away from reading. It is argued that readability should be considered in textbooks selection and materials development decisions (Freahat 2014; Tasaufy 2017). Das et al., (2019) and Tasaufy (2017) also called readability as a neglected criteria in textbook selection. He discovered that there was a gap regarding textbook evaluation, and in particular, the readability of the texts included in English for Specific Purposes (ESP) textbooks. Dioch (2015) affirms that teachers everywhere in the world are much interested in determining the readability or reading difficulty of materials presented to them by publishers.

However, Johnson (2017) claims that teachers usually under-estimate the difficulty of the text by up to 8 years and he added that the more familiar the teacher of the subject is with the topic, the less likely she or he probably is to see the problem from the pupils' point of view. Therefore, it is recommended that

readability be objectively determined using readability formulas and cloze tests (Johnson, 2017).

An early definition of readability by Kher, Johnson and Griffith, (2017) included the concept of interest, but since textbooks are not read because they are interesting, readability will be understood simply as the ease or difficulty with which the textbook may be understood. However, Kasule (2011) argues that since each chapter offers a distinct challenge, textbook readability implies assessing readability chapter by chapter.

One contextual problem is that many developing countries are facing an ever-increasing school population. Working in crowded classrooms casts doubt on the effectiveness of reading instruction. In an environment where textbooks are centrally chosen on a one-suits-all basis, the textbook becomes a potential source of reading problems for some children (Kasule, 2011).

Textbooks are either not available or they are insufficient for every child to have a copy. They may also be too old and overused because of the several generations of users, thereby rendering its physical state uninspiring. This to Kasule, is the state in most developing countries where due to economic hardship and political conditions, textbooks are either selected from the top and distributed to all students or parents simply buy a copy and pass it on till the last user in the family.

Rotich and Musakali (2006) think along the same line as Kasule (2011) and they espoused that such practice and environment influences text suitability for students, and if the readability is worsened then the textbook becomes a useless learning material for the student. In this regard, textbook readability is the variable that can largely influence the suitability of a text to readers, especially in developing countries like Ghana; hence, readability should be considered as criteria for textbook selection.

2.11 Readability Formulas

Richards and Van Staden (2015) define readability formulas as the means of measuring or predicting the difficult nature of texts by analyzing sample passages.

A grade-level score is measured based on the average word length and sentence length of sampled passages using a conventional readability formula.

Readability formulas, as indicated in the background, were produced between 1921 and 1934. The earliest of these formulas are those from Thorndike (1921) and Vogel and Washburne (1928). Major focus was placed on vocabulary as the basis for predicting readability so *Thorndike's Teacher's Word Book was* the basis for measuring vocabulary difficulties (Klare, 1963).

The next sets of readability formulas were produced in the years between 1934 and 1952, by educators such as Dale and Tyler (1934) and McClusky (1934). This period saw the production of formulas by Flesch (1948), Dale and Chall (1948), and Gunning (1952) formulas that are currently popular and widely used. The focus of these formulas was on including more and different factors as variables, with less dependence on the Thorndike word count.

Later, readability formulas were developed by authors like Spache in 1953 for specialized uses and for specified audiences and groups like primary school students. Then came the cloze procedure, which was a tool for measuring readability in the mid-1950s. The cloze procedure stimulated the development of new criteria, new formulas, computerized versions, and the continued testing of text variables (Dubay, 2004).

In recent times, some of the indices tried, tested and often used include: Gunning FOG Index (1964), Flesch Reading Ease (1948), Flesch-Kincaid Grade Level (1948), Automated Readability Index, Linsear Write Formula, Fry Graph (1965), Simple Measure of Gobbledygook (SMOG-1969) Readability, Coleman-Liau Index, Raygor Graph Text Tool among many others.

This study, however, will use Gunning FOG Readability test, the Flesch Reading Ease, and Flesch-Kincaid Grade Level, SMOG Readability, Coleman-Laiu, Linsear Write and Automated Readability Index formulas to ascertain the readability of four non-prescribed supplementary English language textbooks used by SHS English language textbooks.

The rationale behind the choice of these six formulas is based on their strengths. The strength in the use of multiple readability formulas is that each formula makes up for the lapses of the other (Owu-Ewie, 2014; Hassan et al, 2016).

2.12 The Trajectory of Readability Formulas

Readability scholars were concerned with developing readability metrics to help predict readability level of a text. Zamanian and Heydari (2012) argued that the ability to predict text readability is useful because it helps educators to select appropriate texts for students. It also guides authors to write texts suitable to the audience they target. The concern of readability studies is to ensure that a given piece of writing reaches and affects its audience in the way that the author intended it to.

Against, this backdrop, Lively and Pressey (1923) made the first attempt to develop a readability formula. They investigated a practical problem of selecting science textbooks for Junior High School. They realised that science teachers spent so much time to explain vocabularies in the textbooks instead of the content because the vocabularies of the books were very technical for students' comprehension. They devised a method to assess the readability of the textbooks based on the vocabulary complexity. However, their formula lacked the scale used to interpret the scores. Zamanian and Heydari (2012) report that the method used was not a suitable instrument for measuring readability because they could not provide a scale to interpret the scores. Their study however, marked the birth of readability formulas that have become part of contemporary times.

Many readability scholars have developed readability metrics in attempts to device ways of predicting readability of a text. There are over 200 readability formulas today which can be used to predict how easy a text is to read (Zamanian & Heydari, 2012; DuBay, 2015). In effect, readability formula is an analytical tool used to predict readability of a text (Nedić, 2016).

According to Young (2016), a readability formula is one of the several approaches to measure or predict the difficult nature of a text by analysing sample passages. Even though there are many readability formulas today, some are better known

than others (Zamanian & Heydari, 2012; DuBay, 2015). Scholars like Young (2016) have termed these formulas as conventional readability formulas, while other researchers used the word classic readability formulas to mean the same thing (Zamanian & Heydari, 2012; DuBay, 2015).

The conception of readability formulas as conventional, classic, and popular is based on time, variables measured as well as accuracy of prediction (Zamanian & Heydari, 2012; DuBay, 2015). For instance, Young (2016) defined a conventional readability formula as a formula that measures average word length and sentence length to provide grade-level score.

As accurate as this definition is about conventional readability formulas, the aspect that they predict, that is grade-level score is not true of every conventional readability formula even though most of them have recently been interpreted in terms of grade level. In this sense, the term classic readability formulas describe the popular readability formulas accurately.

According to DuBay (2015), classical readability formulas refer to the formulas that were developed in the first thirty years of readability studies which include Flesch Reading Ease (1948), Dale-Chall readability formula (1948) and Gunning Fog Index (1952).

2.12.1 Classic Readability Formulas

Flesch Reading Ease (FRE)

In 1948, Rudolf Flesch developed the Flesch Reading Ease Readability formula. His formula is a well-known and a widely used readability formula of all time (DuBay, 2015). It measures the readability of a text based on the average sentence length and average syllables per word to generate a score of 0-100 point. This formula predicts that a text score of 0 means very difficult to read but a text score of 100 means very easy to read. The interpretation is therefore based on the higher the score, the easier the text is to read and understand; but the lower the score the more difficult it is to read and understand the text**.** A Flesch Reading Ease score of 70-80 and 90-100 are considered to be very easy documents. Writers are expected to target a score of approximately 60 to 70

(Rameezdeen & Rodrigo, 2014). As Rameezdeen and Rodrigo (2014) explain, the Flesch Reading Ease test uses an average sentence length which is multiplied by 1.015, and an average number of syllables which is multiplied by 84.6. The two values and their differences are deducted from 206.835, resulting in a score ranging from 0 to 100. That is, 206.835 – 1.015 (total words/total sentences) – 84.6 (total syllables/total words) (DuBay, 2015). Zamanian and Heydari (2012) asserted that the popularity of Flesch Reading Ease has made Flesch a leading authority in readability. Flesch Reading Ease formula is in Microsoft Office Word (DuBay, 2004; Zamanian & Heydari, 2012), and this is accessible to Microsoft word users. Flesch provided an interpretation of the scale indicated in the table 2.1 and table 2.2 as illustrated below.

Table 2. 1: Flesch Reading Ease Score (FRE)

Flesch Reading Ease Score	Description
0-29	Very difficult
30-49	Difficult
50-59	Fairly difficult
60-69	Standard
70-79	Fairly easy
80-89	Easy
90-100	Very Easy

Source: Wyath and Schnelbach (2008)

Table 2. 2: This table shows the predicted reading grade and estimated percentage of FRE score

FLESCH READING EASE SCORE Reading Ease Score	Description	Predicted Reading Grade	Estimated Percentage of U.S. Adults
0-30	very difficult	college graduate	4.5%
30-40	difficult	college grade	33%
50-60	fairly difficult	10th-12th grade	54%
60-70	standard	8th-9th grade	83%
70-80	fairly easy	7th grade	88%
80-90	easy	6th grade	91%
90-100	very easy	5th grade	93%

Flesch-Kincaid Grade Level (F-KGL)

The Flesch-Kincaid Grade Level is one of the readability formulas that is also commonly used. It is an improvement of Flesh Reading Ease (Doak & Doak, 2010). Flesch-Kincaid Grade Level was co-authored by Rudolph Flesch and Peter John Kincaid. Flesch-Kincaid Grade Level Test is linked to the Flesch Reading Ease test, as it translates the Flesch Reading Ease Test scores to grade level. In 1975, Peter J. Kincaid and his team propounded the formula which is mostly used in education. To assist users, Flesch provided an interpretation table Table 2.3 to aid users translate the scale to estimated reading grade and estimated school grade completed.

Table 2. 3: Flesch-Kincaid Grade Level

Flesch Reading Ease Score	Description	Flesch-Kincaid Grade Level
0-29	Very difficult	Post graduate grade
30-49	Difficult	College grade
50-59	Fairly difficult	10^{th} – 12^{th} grade
60-69	Standard	8^{th} – 9^{th} grade
70-79	Fairly easy	7^{th} grade
80-89	Easy	5^{th} – 6^{th} grade
90-100	Very Easy	4^{th} – 5^{th} grade

Source: Wyath and Schnelbach (2008)

The Dale-Chall Readability Formula

In 1948, Edgar Dale and Jeanne Chall improved upon Flesch reading ease by predicting that readability of a text is based on the quantity of hard words that are embedded in the text. They provided a list of 3000 easy words with 80% of the words known to fourth grade readers (Zamanian & Heydari, 2012). The Dale-Chall readability formula, unlike Flesch, measures the sentence length and the quantity of hard words that are in a sample passage and based on that assigns a grade score of 0-17 and above (17). A Dale-Chall formula score of 4.5 and below means that it is highly readable, and fourth grade readers can read and understand. However, a Dale-Chall formula score of 10 and above to grade 16 is highly difficult to read and understand and it is likely to be appropriate for college and graduate

students. Table 2.4 below illustrates in detail the Dale-Chall conversion of raw scores to appropriate grade levels:

Table 2. 4: Dale-Chall Conversion Table

DALE-CHALL RAW SCORE TO GRADE INTERVAL CONVERSION Raw Score	Grade Interval
4.9 and below	4th grade and below
5.0 - 5.9	5th– 6th grade
6.0 - 6.9	7th– 8th grade
7.0 - 7.9	9th–10th grade
8.0 - 8.9	11th–12th grade
9.0 - 9.9	Grade13 through 15 (college)
10 and above	Grade 16 and above (college graduate)

The Gunning Fog Index

The Gunning FOG Readability Formula is simply referred to as FOG Index. It was developed by Robert Gunning in 1952. The Gunning Fog Index is considered a popular readability formula in predicting text readability because it is easy to use. According to Gunning, poor styles of writing results from reading problems. Gunning describes written materials as full of “FOG” and unnecessary complexities. Young (2016) and Zamanian and Heydari (2012) explain that the Fog test is generally used to confirm how easily a text is read, by its intended user. Two variables are used to find the average sentence length (ASL) and poly-syllabic (words with more than two syllables) for each 100 words. A Fog Index of 1-8 is for elementary school students, while 9-12 is for high school students. A document that scores a Fog Index of 13-16 is for post-secondary school students. The lower the number, the less difficult the text is to be understood. The ideal score for readability with the Fog Index is 7 or 8. Anything above 12 is too hard and difficult for most people to read. (Grunder, 1978). Gunning provided an interpretation in table 2.5 to aid users convert the scale to estimated reading grade and estimated school grade completed.

Table 2.5: FOG INDEX

FOG INDEX	ESTIMATED READING GRADES
Danger line 17	College graduate
Danger line 16	College senior
Danger line 15	College junior
Danger line 14	College sophomore
Danger line 13	College freshman
12	High school senior
11	High school junior
10	High school sophomore
Easy reading range	High school freshman
	Eighth grade
	Seventh grade
	Sixth grade

Source: Zamanian & Heydari (2012)

These four readability formulas, thus Flesch Reading Ease, Flesch-Kincaid Grade level, Dale-Chall readability formula and Gunning Fog Index, are regarded as the classic readability formulas. As noted by Zamanian and Heydari (2012), the publication of the Flesch, Dale-Chall, and Gunning formulas conveniently marks the end of the first 30 years of classic readability studies. Even though the works of these four scholars (Kincaid, Gunning, Flesch, Dale & Chall) marked the ground work of readability studies, DuBay (2015) observed that the development and research on the formulas were hidden until the 1950s. Writers like Rudolf Flesch, George Klare, Edgar Dale, and Jeanne Chall brought the formulas and the research supporting them to public domain. However, it was left to the subsequent readability scholars to consolidate the work of these scholars as well as emphasize how these formulas work. These studies were therefore known as the new readability studies.

2.12.2 New Readability Studies

The study of readability in the 1950s accelerated several developments. This was caused by the challenges of Sputnik and the demands of new technologies. The demand for new technologies created the need for higher reading skills in all workers (DuBay, 2015). While the older manufacturing industries had little demand for advanced readers, new technologies required workers with higher reading proficiency. Others identified the plain language movement as a driving force behind the surge in readability studies after the first thirty years.

The new readability studies as explained by DuBay (2015), were characterised by notable changes such as the use of cloze test, focus on reader centered variables, the introduction of new readability formulas and formula discrepancy. The change included an increase in research on readability studies. George Klare, Edgar Dale, Jeanne Chall and Fry among others, spent time researching into readability in order to consolidate and improve the formulas.

This period was also marked by the development of the cloze test by Wilson Taylor in 1953 which was used to measure the comprehension of text by readers. The cloze test was based on the assumption that when a text is understandable and familiar to readers, they will not have a challenge to fill in missing words that are deleted from the text for the cloze test because they will think of the text as a whole and not as separate components.

This method was, and is, so accurate in predicting how comprehensible a text is to readers. The new readability studies also focused on drawing a relationship between readability and reading efficiency thus the speed and persistence of reading. This area was considered by Dale and Chall in their definition of readability as one of the successes readers will have with a readable text.

Another area that was of essence to the new readability studies was to examine the reader centered variables which determine how easy a text is to read. Among the factors discovered were motivation, interest, reading ability of readers, reading style and prior knowledge. The development of new formulas was also a remarkable feature of the new readability studies. The Bormuth studies by John

Bormuth, the Fry readability formulas and McLaughlin's SMOG formula were all developed in this era.

The readability researchers also had interest in developing 'listenability' formulas. Prior to this time, DuBay (2015) held the view that "writing like you talk" and reading text aloud have been known methods for improving readability of spoken text. On the contrary, Rogers (1962) developed a listening readability formula that measures the difficulty of spoken text based on average idea unit length and the average number of words in a hundred-word sampling that does not appear on Dale's list of hard words (DuBay, 2015).

Irving Fang (1966-1967) also contributed to the development of listenability formulas by developing the Easy Listening Formula (ELF) which measures the listenability of a spoken text based on the maximum number of syllables per word in a sentence. While Rogers (1962) developed his formula by studying a sample of 480 speeches, Irving developed her formula by studying sampled newscast. Studies on the relationships between listenability and readability however, came with some criticism (Klare, 1963).

With all these developments of the new readability formulas, the issue of readability as based on linguistic variables rather than factors such as coherence and other text-variables was still the limitation of these readability formulas. The cloze test in a way covered the limitation of the readability formulas in accurately predicting the success of readers engaging with text, though, issues of coherence were still unresolved.

To this end, the work of Graesser, McNamara, Lawrence, and Cai (2014) in developing Coh-Metrix marked the final stage of the new readability studies. Coh-Metrix formula is a computational tool that measures cohesion and text difficulty at various levels of language, discourse, and conceptual analysis (Zamanian & Heydari, 2012). As explained by Graesser, et al. (2014), Coh-Metrix was designed with the aim of improving the writing of textbooks and to match the books appropriately to their intended students.

In recent times, readability studies are focused on developing computational readability formulas as well as language specific readability formulas. Among the formulas developed, are also formulas used to measure official languages apart from English. For instance, Liu formula was developed to measure the readability of French text and Fernando formula was developed to measure Portuguese text. SMOG Readability, Coleman-Liau, Linsear Write and Automated Readability Index were also formulas developed in this era which this study used in determining the readability levels of the non-prescribed supplementary English Language textbooks.

2.13 The Simple Measure of Gobbledygook (SMOG) Readability Formula

The Simple Measure of Gobbledygook (SMOG) formula was created by Harry G. McLaughlin in 1969 through an article, *SMOG Grading: A New Readability Formula in the Journal of Reading*. McLaughlin created this as an improvement over other readability formulas so it is widely believed that the title 'SMOG' is a nod to Robert Gunning's FOG Index. SMOG Readability Formula is used to estimate the years a person needs to understand a piece of writing and it is widely used particularly to evaluate consumer-oriented healthcare materials and messages (Gutierrez, 2015).

The formula is used based on the number of polysyllabic words in the text. A three or more syllabic word is counted as difficult, and the density of those words in the text is what determined the SMOG score. McLaughlin validated his formula against the McCall-Crabbs passages. He used 100% correct-score criteria, whereas most formulas test for around 50%-75% comprehension. His formula generally predicts scores at least two grades higher than the Dale-Chall formula (Huang et al., 2018; Rules, 1969).

Following the instructions on word counting rules for shorter and longer passages, SMOG test is scored based on the conversion tables and steps below:

Word Counting Rules

• A sentence is any group of words ending with a period, exclamation point, or question mark.
• Words with hyphens count-as-one-word.
• Proper nouns are counted.
• Read numbers out loud to decide the number of syllables.
• In long sentences with colons or semicolons followed by a list, count each part of the list with the beginning phrase of the sentence as an individual sentence.
• Count abbreviations as the whole word they represent.

SMOG for Shorter Passages (less than 30 sentences)

Use this formula and SMOG Conversion Table II (table 2.6) for material containing less than 30 sentences, but not less than 10 sentences.

1. Count the total number of sentences in the material.
2. Count the number of words with 3 or more syllables.
3. Find the total number of sentences and the corresponding conversion number in SMOG Conversion Table II as illustrated in table 2.7.
4. Multiply the total number of words with 3 or more syllables by the conversion number. Use this number as the word count to find the correct grade level from SMOG Conversion Table I as shown in table 2.6.

SMOG for longer passages

The SMOG Readability Formula

Step 1**:** Take the entire text to be assessed.

Step 2**:** Count 10 sentences in a row near the beginning, 10 in the middle, and 10 in the end for a total of 30 sentences.

Step 3**:** Count every word with three or more syllables in each group of sentences, even if the same word appears more than once.

Step 4: Calculate the square root of the number arrived at in Step 3 and round it off to nearest 10.

Step 4**:** Add 3 to the figure arrived at in Step 4 to know the SMOG Grade, that is, the reading grade that a person must have reached if he or she is to understand fully the text assessed.

SMOG grade = 3 + Square Root of Polysyllable Count

The SMOG Formula is considered appropriate for secondary age (4th grade to college level) readers.

The premises of McLaughlin's SMOG Formula are:

1. A sentence is defined as a string of words punctuated with a period, an exclamation mark, or a question mark.
2. Consider long sentences with a semi-colon as two sentences.
3. Words with hyphen are considered as a single word.
4. Proper nouns, if polysyllabic should be counted.
5. Numbers that are written should be counted. If written in numeric form, they should be pronounced to determine if they are polysyllabic.
6. Abbreviations should be read as though unabbreviated to determine if they are polysyllabic. However, abbreviations should be avoided unless commonly known.
7. If the text being graded is shorter than 30 sentences, follow the steps below:

i. Count all the polysyllabic words in the text

ii. Count the number of sentences in the text.

iii. Divide the figures obtained in (i) by the figure obtained in ii. to arrive at Average Polysyllabic Words per sentence.

iv. Multiply the figure obtained in iii. with the average number of sentences short of 30.

v. Add the figure obtained in iv. to the total number of polysyllabic words.

vi. Compare the number of polysyllabic words in the SMOG Conversion Tables (table 2.6 & table 2.7)**.**

Table 2. 6: SMOG Conversion table (for longer materials)

SMOG Conversion Table I (for longer materials)	
Total Polysyllabic Word Count	**Approximate Grade Level (+1.5 Grades)**
1 – 6	5
7 – 12	6
13 – 20	7
21 – 30	8
31 – 42	9
43 – 56	10
57 – 72	11
73 – 90	12
91 – 110	13
111 – 132	14
133 – 156	15
157 – 182	16
183 – 210	17
211 – 240	18

Source: Harold C. McGraw, (1969)

Table 2. 7: SMOG Conversion Table (for materials with < 30 sentences)

SMOG Conversion Table II (for materials with < 30 sentences)	
Total Polysyllabic Word Count	**Approximate Grade Level (+1.5 Grades)**
29	1.03
28	1.07
27	1.1
26	1.15
25	1.2
24	1.25
23	1.3
22	1.36
21	1.43
20	1.5
19	1.58
18	1.67
17	1.76
16	1.87
15	2.0
14	2.14
13	2.3
12	2.5

Source: Harold C. McGraw (1969)

Linsear Write Formula

Linsear Write Formula was published by John O'Hayre in 1966 in his style manual titled *Gobbledygook Has Gotta Go*. O'Hayre argued that simple communication is more efficient so writers need to say what they want to say actively and concretely. He advised the use of stronger verbs and writing in a more active voice. It was his belief that since thinking precedes writing, excess wordiness should be avoided. The formula was designed for use in government writing aimed at the public but O'Hayre emphasised its benefits to internal processes. Subsequently, the U.S. Air Force adopted the Linsear Write Formula to help calculate the readability of their technical manuals.

Linsear Write is a readability formula used to indicate how difficult a text is based on the number of words having 3 or more syllables in a sample of text containing at least 100 words. Like many readability formulas, the Linsear Write calculates the U.S. grade level of a text to correspond with the number of years of education a reader requires to understand a text. For instance, a value of 6 corresponds to 11-12 years old readers while 12 corresponds to 17-18-year-olds (O'hayre, 1966). The values are interpreted in table 2.8 as follows:

Table 2. 8: Linsear Write Conversion Table

Value	School level	Student age range	Notes
0-1	Pre-kindergarten - 1st grade	3-7	Basic level for those who just learn to read books.
1-5	1st grade - 5th grade	7-11	Very easy to read.
5-8	5th grade - 8th grade	11-14	A text is considered ideal for average readers.
8-11	8th grade - 11th grade	14-17	Fairly difficult to read.
11+	11th grade - college	17 +	Too hard to read for the majority of readers.

The Linsear Write Formula calculates the grade level of a text following the steps below:

1. Find a 100-word sample from your writing.
2. Calculate the easy words (defined as two syllables or less) and place a number "1" over each word, even including a, an, the, and other simple words.
3. Calculate the hard words (defined as three syllables or more) and place a number "3" over each word as pronounced by the dictionary.

4a. Multiply the number of easy words times "1."

4b. Multiply the number of hard words times "3."

5. Add the two previous numbers together.
6. Divide that total by the number of sentences.

7a. If your answer is >20, divide by "2," and that is your answer.

7b. If your answer is <20 or equal to 20, subtract "2," and then divide by "2." That is your answer.

Because sentence length and 3 or more syllabic words influence the results of the Linsear Write formula, one can use shorter sentences and less complex words (1 or 2 syllable words) to lower the score (grade level) as shown below:

- Count a 100-word sample.
- Count all one-syllable words except "the", "is", "are", "was" and "were". Count one point for each one-syllable word.
- Count the number of sentences in the 100-word sample to the nearest period or semicolon. Give three points for each sentence.
- Add together the one-syllable word count and the three points for each sentence. This is your score.
- A score between 70 and 80 is recommended for the average adult reader. Texts with a score below 70 may be too hard to read. A score above 85 may be getting too simplistic.

2.14 Automated Readability Index (ARI)

The Automated Readability Index (ARI) was developed in the 1967 by the US Air Force Medical Division to analyse the readability of technical manuals, reports and training documents of the Military Army, Air Force and Navy (Senter & Smith, 1967).

It was developed to determine whether the technical reading materials can be understood by their personnel. Currently, the tool is used for a wide variety of text material such as essays, novels and blog posts. It produces an approximate representation of the US grade level needed to comprehend a text (Senter & Smith, 1967).

The ARI formula outputs a number which approximates the age needed to comprehend the text. For example, if the ARI outputs the number 20 this equates to a student in college; a number 10 means students in 4th grade should be able to comprehend the text. An ARI score of 6 means the text is suitable for 6th graders or 11-years-olds and above.

This formula accounts for the word difficulty or the number of characters in a word instead of its syllables. The idea is that a text is harder to read due to its density of characters so rather counting syllables, it counts characters. That is the more characters there are in a word, the harder the word (Senter & Smith, 1967).

ARI also accounts for the sentence difficulty that is the number of words in a sentence makes it easy or difficult to read. This sets ARI apart from some other formulas but it is similar to the Flesch Reading Ease / Flesch-Kincaid Grade level, and the Coleman-Liau Test. The ARI is calculated in figure 2.2 as follows:

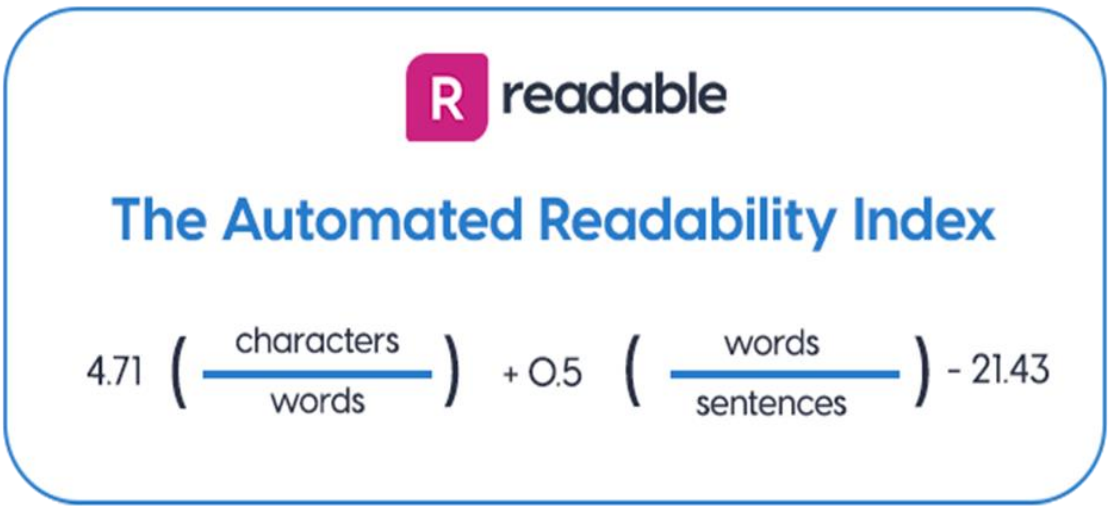

Figure 2. 2: ARI Calculator

Below is the conversion table showing the possible results the ARI can produce:

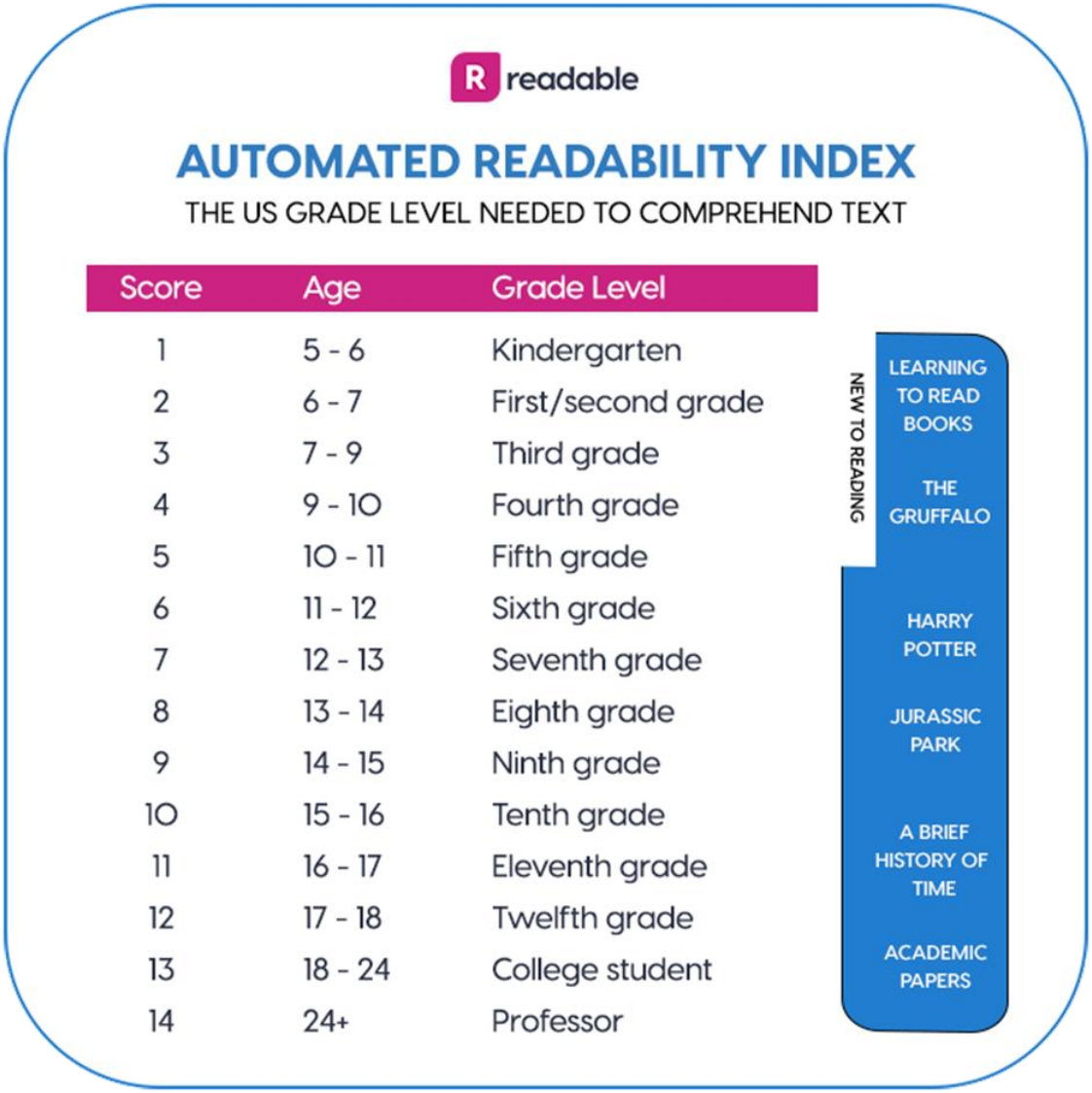

Figure 2. 3: ARI Grade Level

The Coleman-Liau Index

The Coleman-Liau Index was created by Meri Coleman and T.L Liau in 1975 to gauge the US grade level needed to comprehend a text. The formula was developed to automatically calculate writing samples rather than coding the text manually. The formula is also widely used in schools particularly to measure the reading levels of texts in law using letters and sentences as variables (Coleman & Liau, 1975; Zhang, Lin & Jiang, 2019).

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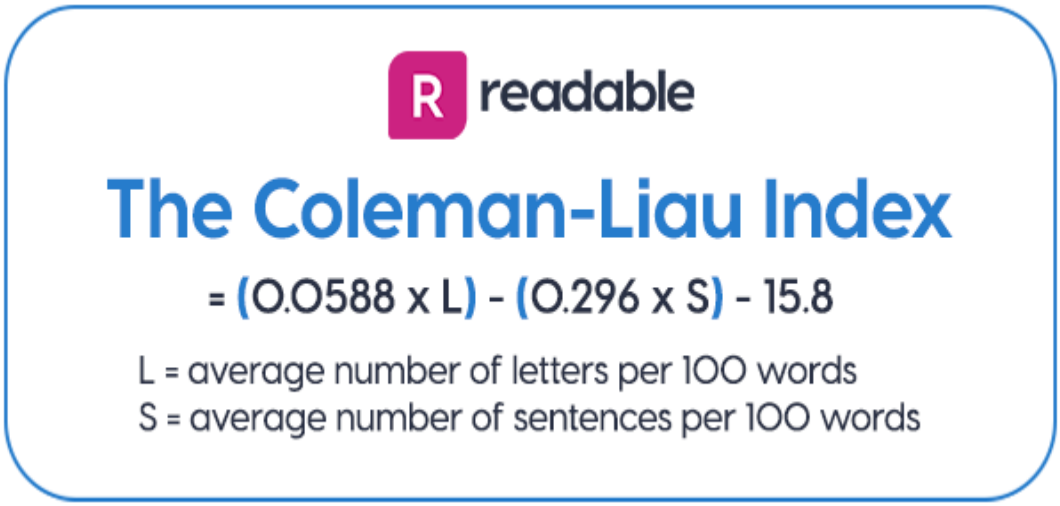
Unlike syllable-based readability indicators where syllables per word and sentence lengths count, Coleman-Liau Index which is similar to ARI, does not require users to count the syllables in a word. It relies mainly on characters per word and uses

computerized assessments to understand characters more easily and accurately. According to Coleman and Liau (1975), 'word sentence in letters is a better predictor of readability than in syllables''. As such, passages can easily be scanned into a word processor to calculate the Coleman-Liau Index.

The Coleman- Liau is calculated in figure 2.4 as indicated below:



Source: Coleman & Liau (1975)

Figure 2. 4: The Coleman-Liau Index

For instance, values correspond to the number of years of education a reader requires to understand a text so a value of 6 corresponds to 11-12 -year- olds while 12 corresponds to 17-18-year-olds. A score of 6 is the 6th grade in the US grading system. A text targeted for public consumption is a grade level of 8-10. The values are interpreted in table 2.9 as shown below:

Table 2. 9: Coleman-Liau Conversion Table

Value	School level	Student age range	Notes
0-1	Pre-kindergarten - 1st grade	3-7	Basic level for those who just learn to read books.
1-5	1st grade - 5th grade	7-11	Very easy to read.
5-8	5th grade - 8th grade	11-14	A text is considered ideal for average readers.
8-11	8th grade - 11th grade	14-17	Fairly difficult to read.
11 and above	11th grade - college	17 and above	Too hard to read for the majority of readers.

When dealing with technical documentation, the Coleman-Liau index tends to return lower values as compared to other readability formulas.

2.15 The Strengths of Readability Formulas

In order to discuss the strength of readability formulas comprehensively, it is best to review the fundamental definitions of readability in order to understand the importance and benefits of the concept. Readability, according to Richards, Platt and Platt (1992:306) means '' how easily reading materials can be understood. This depends on several factors including the average length of sentences, the number of new words contained, and the grammatical complexity of the language used in a passage."

McLaghlin (1969), defines readability as, "the degree to which a given class of people find certain reading material compelling and comprehensible''.

Dale and Chall (1949) define readability as ''the sum total (including all the interactions) of all those elements within a given piece of printed material that affect the success a group of readers have with it. The success is the extent to which they understand it, read it at an optimal speed and find it interesting''.

Various definitions of the concept of readability have emphasised three elements in a text which are associated with comprehension on the part of the reader. These elements include the understanding of words, phrases and ideas in a passage or text. The second element in the definition of readability is a reader's ability to read a given text at an optimum speed. Lastly, the definition includes motivational factors which affects a reader's interest in reading a text. As explained by Dale and Chall (1949), these three elements of the definition of readability are not separate rather they interact with each other. To explain further, Gilliland (1974:13) provided the following example:

> *'…in a scientific article, complex technical terms may be necessary to describe certain concepts. A knowledge of the subject will make it easier for a reader to cope with these terms and they, in turn, may help him to sort out his ideas, thus making the text more readable. This interaction between vocabulary and content will affect the extent to which some people can read the text with ease'.*

Based on the above quotation from Gilliland, it is observed that the definitions of readability have never been entirely text-centred as argued by some critics who oppose readability formulas. (Redish, 2000; Omiko, 2011 & Hulden, 2014). These three authors are of the view that readability formulas cannot measure the context, prior knowledge, interest level, difficulty of concept, or coherence of text.

It must be noted however that readability formulas were originally created to predict the reading difficulty associated with text. As Kondru (2006:7) puts it '' a readability formula is an equation that gives an estimate of a text. The estimate is generally in terms of the number of years of education one needs to have to comprehend that text''.

Readability studies are also concerned with ensuring that a given piece of writing reaches and affects its audience in the manner that the author intends it. In support, Rezaei (2000) asserts that communication presupposes comprehension, but the increasing variety, volume and complexity of written materials make understanding more and more difficult. For this reason, readability studies are focussed on measuring the comprehensibility of a piece of writing by concentrating on its linguistic features particularly, word and sentence length.
The ability to predict text readability is useful because it aids educators in the selection of appropriate texts for their students and it helps authors write text suitable and accessible for their target audience having fore knowledge of their reading levels. For instance, the Flesch Reading Ease and Flesch-Kincaid Grade Level play significant roles in analyzing texts and their comprehensibility (DuBay, 2015).

As explained by DuBay, readability formulas measure text by aiming at the grade-level of readers. The outcome of using readability formulas is that it informs writers on the choice of information needed to reach their target audience. Further arguments in support of Flesch Reading Ease and Flesch-Kincaid Grade Level formulas affirm that readability formulas do not necessitate the (targeted) readers' prior knowledge of a hard or easy to read text (Najafi, 2010; Stewart, 2011; Kolahi & Shirvani, 2012). Writers can determine early their reader's level of

comprehension of a text with the use of the readability formulas, and this can save a lot of time, energy and money.

In addition, some scholars assert that the Flesch Reading Ease and Flesch-Kincaid Grade Level formulas are text-based formulas as such a lot of scholars and writers can easily use them. This is because currently, readability formulas can be performed by computer software to determine the readability levels of written materials (DuBay, 2004; Janan & Wray, 2012). There is validity in using readability formulas in measuring various written materials such as newspapers, health materials, annual reports, among others. As posited by DuBay (2015:61), "the variables used in the readability formulas show us the skeleton of a text''.

It is therefore the responsibility of writers to organize their reading materials well by using appropriate tones, content, coherence, and design. Readability formulas therefore are tools that objectively determine the degree of challenge readers will face in using the text. McClure (1987:12) emphasized that "a readability formula is an evaluation tool, not a reading or writing tool".

Succinctly put, Fry (2006) remarked that readability formulas are not ‘writability’ formulas hence may not be effective in revising documents but effective in drawing writers’ awareness to the degree of words and sentences that make text difficult for readers. Haris (2000) argues, therefore, that readability formula is not a whole-text predictor of comprehensibility but an objective tool for predicting the readability of text before it is given to a reader.

Readability formulas have been used to measure readability of textbooks, newspapers, and annual reports to predict their readability level. With the cloze test, it has been discovered that most readability formulas’ predictions are accurate when the text is given to the target readers (Zamanian & Heydari, 2012). According to Zamanian and Heydari (2012), readability formulas are useful in measuring the grade-level of readers, and also useful tools in helping writers convert their text to plain language text.

Lastly, some scholars have also critiqued the Fog Index however, the reliability and continuous application of the formula continues to grow as some critics of the formula recognised the essence of the formula in assessing the readability level of

'old' documents (Redish, 2000). Proponents of the Fog Index readability formula acknowledge that the formula does not merely measure textual and reader characteristics (Klare, 1969; DuBay, 2015); it is rather a reasonable approach in the use of the formula, alongside other methods that directly test typical readers (Redish, 2000).

The relevance of Fog Index readability formula is its continuous use in the field to measure text comprehensibility. As argued by Anagnostou and Weir (2016, p.10), "… the Fog Index readability formula has useful, practical and objective" ways of assessing the comprehensibility of a text when applied appropriately. It is obvious that readability formulas are valid predictors of text readability and their usefulness cannot be underestimated.

2.16 Chapter Summary

This chapter focused on the conceptual framework that formed the basis for this study and reviewed literature on readability studies. From the literature reviewed, it is observable that the readability of textbooks is a common criteria that helps in the selection and recommendation of textbooks for learners. The literature also revealed that while some textbooks may be *easy to read* to target readers, majority of the textbooks were written at the '*difficult'* and '*very difficult'* to read level.

Some of the findings include readability studies conducted on English Language textbooks and other related texts. While majority of the textbooks studied are prescribed textbooks, there seems to be no specific study on non-prescribed supplementary English Language textbooks especially the supplementary textbooks. Layingg emphasis on Groves's (1995) assertion that multiple textbooks give learners the option to choose books that suit their abilities. Therefore, it is relevant to study the readability of non-prescribed English Language textbooks to determine their readability levels since prescribed textbooks alone cannot meet the multiple textbooks requirement proposed by Groves (1995). This study thus adds to existing literature on the readability of English Language textbooks particularly in Ghana by exploring the readability of non-prescribed supplementary English Language textbooks.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This Chapter presents systematically, the framework of strategies and methods used to answer the research questions of the study. It explains the research design that linked the research objectives and questions of the study, the data collection process and data analysis. It also explains the rationale behind the choices made concerning the methodology. The Chapter further discusses the various stages of the research process under headings such as population, sampling and sample size, study site, research instruments, validity and reliability. It ends with an elaborate description of the ethics followed to secure the rights of the participants of the study.

3.1 The Research Process

A good research study is best examined from different perspectives to arrive at conclusive findings. It is therefore important to examine the study methods and data collected from different viewpoints to ensure a comprehensive approach to the research question. In view of this, this section describes briefly the main stages of the research process as shown in Figure 3.1.

Figure 3. 1: Research Process
Source: *Creswell (2013)*

Arthur and Handcook (2009) avers that research can be thought of as a process of systematic and focused investigation for the purpose of adding to the body of knowledge to aid our understanding about complex issues. From this definition, it follows that research is a planned activity that is carried out systematically in stages to achieve its set objectives. As outlined in figure 3.1, every research activity begins by identifying a research problem. A well identified problem will lead the research to accomplish all 8 phases of the research process starting from setting the objectives to the selection of the research methodology to writing the research report.

In similar vein, the current study identified a problem of interest, followed a well thought out plan of activities including data collection and analysis to answer the set research questions and to report the findings objectively. The next sections present a description of the research activities carried out this study.

3.2 Research Design

A research design can be perceived as a systematic procedural approach for collecting and analyzing the required information in a decision-making plan during a study (Burns & Bush, 2016). According to Van Wyk (2012:4), research design allows researchers to develop “an overall plan for connecting the conceptual research problems to the pertinent and (achievable) empirical research.” In other words, the research design enunciates kinds of data to be collected, how the data will be analyzed and how the data will be related to effective answering of the research questions and also how relevant the data will be to the research questions. Primarily, it can be said that the one aim of a research design is to ensure that the researcher through evidence gathered, provides appropriate answers to the research questions (Kirshenblatt-Gimblett, 2006).

Andrew and Halcomb (2009) describe research design as an approach that transforms research questions into a framework of strategies and methods that permits the researcher to answer these questions systematically. They further explain that the research design links a research objective or question to an appropriate method of data collection and a set of specified outcomes. Burns and Bush (2016) posits that three important elements which involves an assessment

of the knowledge claims, the strategies of inquiry, and an identification of specific methods lead a researcher into determining a suitable research design for a study. This research design may either be solely quantitative, qualitative, or a blend of the two methods which is known as mixed methods (Creswell & Clark, 2003; Johnson & Onwuegbuzie, 2004; Creswell, 2013). The current study extensively blended quantitative and qualitative methods.

3.2.1. Quantitative Approach

Quantitative research is regarded as a deductive approach towards research where researchers perceive the world as being outside of themselves and that there is "… an objective reality independent of any observations" (Rovai et al., 2014: 4). They contend that by subdividing this reality into smaller, manageable pieces, for the purposes of study, that this reality can be understood. It is within these smaller subdivisions that observations can be made and that hypotheses can be tested and reproduced with regard to the relationships among variables.
This approach is typified by the researcher putting forward a theory that is exemplified within a specific hypothesis, which is then put to the test; conclusions can then be drawn with regard to this hypothesis, following a series of observations and an analysis of data (Rovai et al., 2014). A feature of this approach towards research is that the collection and analysis of information is conducted utilizing "…mathematically based methods…" (Muijs, 2011:1). For this reason, data collection in quantitative studies is rigorous and highly scientific to be sure that the sample selected truly represents the population under consideration (Berg, 2001; Creswell, 2007; Vanderstoep & Johnston, 2009). Quantitative design aims at arriving at cause-and-effect relationships or establishing a correlation between two variables. The types are experimental research, causal comparative research, correlational research and survey research.

The quantitative aspect of this research relies primarily on the collection of quantitative data (Christensen & Johnson, 2006). The quantitative data was collected using readability formulas. This is considered quantitative because the use of readability formulas, according to Rush (1984), are objective and use quantitative tools for determining the difficult nature of written materials without requiring testing of readers. This means that subjectivity does not exist when

determining readability and this makes the use of the readability formulas more reliable and objective and the qualitative approach the best choice to answer research questions 1 and 2 of the study.

That notwithstanding, assessing the readability of non-prescribed supplementary English Language textbooks used by private SHSs requires the subjective views of members of the private school community- the headteachers, deputy headteachers, English Language teachers, the monitoring and supervision team of the Adenta Education Directorate and personnel from the NaCCA unit responsible for the recommendation and approval of textbooks. Including the views of these persons in the study is necessary to understand the phenomena being studied hence the choice of a qualitative approach.

3.2.2. Qualitative Approach

Qualitative paradigm emphasizes on exploring and understanding of the meaning that individuals or groups ascribe to social or human problem (Creswell, 2014). Denzin and Lincoln (2005) also describe the qualitative approach as gaining a perspective of issues from investigating them in their own specific context and the meaning that individuals bring to them. Thus, the approach focuses on drawing meaning from the experiences and opinions of participants.

“Qualitative methods are usually described as inductive, with the underlying assumptions being that reality is a social construct, that variables are difficult to measure, complex and interwoven, that there is a primacy of subject matter and that the data collected will consist of an insider’s viewpoint” (Rovai et al., 2014:4). Tracy (2013) claims that qualitative approach focuses on the values of individuals, culture, and social justice which provides a rich content and context of information that is subjective in nature.

The qualitative approach helps the researcher to find out and gain an insight into a phenomenon. Thus, the researcher does not aim at generalizing the findings to a population and therefore does not aim at collecting data that is representative of any population. Creswell (2007) identifies five approaches that fall under the qualitative method of research design. These are narrative research,

phenomenology, grounded theory, ethnography and case study. In collecting data for qualitative approaches, some of the forms of data used are interviews, observations, field studies and documents and visual materials.

The use of qualitative design for this study involved the collection of data from knowledgeable respondents through interviews to determine factors responsible for the difficult nature of non-prescribed supplementary English Language textbooks and the poor performance in English language by SHS students in private schools. This was necessary in order to obtain detailed information from knowledgeable subjects like GES staff responsible for monitoring and supervision in private schools, the NaCCA Curriculum Officer for Languages and selected staff of private schools to answer the research questions 2, 3 and 4.

Moreover, the qualitative design was relevant in determining the factors responsible for the poor performance in English language by SHS students in private schools and whether this can be attributed to the nature of English language textbooks used. Varied responses were gathered from the qualitative data collected (interviews) to answer research questions 2, 3 and 4 while research questions 1 and 2 is answered by the quantitative approach. The detailed report is discussed in Chapter 4.

Thus, examining the variables related to readability assessment of non-prescribed supplementary English Language textbooks requires the blend of both research approaches: the quantitative and qualitative. A blend of the two research approaches is what is known as mixed methods research approach. For a study of this nature, the mixed methods research approach was deemed appropriate as it gave the researcher an opportunity to collect and compare (rich and comprehensive) data from varied sources that reflects all target participants' views to enrich the study and for objective and comprehensive conclusions to be drawn. In line with this thinking, the study discusses the mixed methods research approach in the ensuing section.

3.2.3 Mixed Method Approach

Creswell and Clark, (2003:212) define a mixed method approach as one that involves "a collection of and an analysis of both quantitative and or qualitative data in a single study." According to Bormuth (2007), the mixed method approach is the type that combines elements of both qualitative and quantitative research approaches for broad in-depth comprehension and justification. Furthermore, Johnson and Onwuegbuzie (2004:17-18), state that a mixed research is a method that allows the researcher:

> *to mix or combine quantitative and qualitative research techniques, methods, approaches, concepts, or language into a single study. It further explains that a mixed method research attempts to legitimate the use of multiple approaches in answering research questions, rather than restricting or constraining researchers' choices. ...it is inclusive, pluralistic, and complimentary, and it suggests that researchers take an eclectic approach to method selection and the thinking about and conduct of research*.

Greene (2007) believes that the mixed method exposes the researcher with opportunities to the weaknesses and strengths within the method to avoid biases. This exposure enables the researcher to avoid biases that may emanate from the study. To corroborate Greene's assertion, Wisdom and Creswell (2013) espouse that the mixed method is a methodological study that offers countless potentials to the researcher, strengthening the rigor and enriching the analysis and findings of the study.

Mixed methods research has been described in a variety of ways by many researchers for easy understanding of the concept. Niglas (2009) describes mixed method as an "empirical research that involves the collection and analysis of both qualitative and quantitative data" while Johnson et al. (2007: 123) define it as:"… the type of research in which a researcher or team of researchers combine elements of qualitative and quantitative research approaches (use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration." Adding to the topic, Greene (2007), Johnson and Onwuegbuzie, (2004) believe that this

mixed method approach provides researchers with opportunities to "… compensate for inherent method weaknesses, on inherent method strengths, and offset inevitable method biases".

Creswell and Plano Clark (2011) also espouse that the mixed method approach enables a greater degree of understanding to be formulated than if a single approach were adopted to specific studies. In addition, they put forward a collection of core characteristics which highlight key elements within mixed methods research. They further state that researchers collect and analyse both qualitative and quantitative data in the type of research in which a researcher or team of researchers combine elements of qualitative and quantitative research approaches in a simultaneous and rigorous manner which integrates the two forms of data. How this data is combined will depend upon the nature of the inquiry and the philosophical outlook of the person conducting the research.

Greene et al. (1989) provide five distinct justifications for the integration of quantitative and qualitative research data. Triangulation provides opportunities for convergence and corroboration of results that are derived from different research methods. Complementarity "seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from another" (Greene et al., 1989:259). Development sees researchers utilising the results from one method to inform another method which covers all aspects of the inquiry. Initiation involves the discoveries of contradictions or inconsistencies within the data sets which can result in the reformulation of questions or additional questions being raised as a researcher, share this worldview which is believed is far more important to focus on understanding an issue and find solutions to problems than focus on specific methods or approaches.

The advantages of mixed methodology according to Greene (2007), and Wisdom and Creswell (2013) include allowing for the comparison of quantitative and qualitative data, reflecting participants' point of view, fostering scholarly interaction, providing methodological flexibility, and collecting rich and comprehensive data. It is for these reasons that this study is based on mixed methods research approach.

In addition, the mixed method was chosen for this study based on the philosophy that undergirds the mixed methods research--pragmatism. Pragmatism, an American philosophy, as advocated by William, James, Pierce and James Dewey. They propose that the value of an inquiry can best be described by its practical consequences. Mixed methods research fits the pragmatic idea because it makes practical use of both induction and deduction to achieve understanding and explanation (Johnson & Onwuegbuzie, 2004:14).

It must be noted that before the adoption of the mixed method, certain factors must be considered. In the first place, one must determine to see if the mixed method is feasible and state clearly the rationale for the use of the mixed method. In addition, the researcher needs to identify data collection strategies to include both quantitative and qualitative strategies. Thereafter, data is collected and analysed using both quantitative and qualitative. This is illustrated in figure 3.1

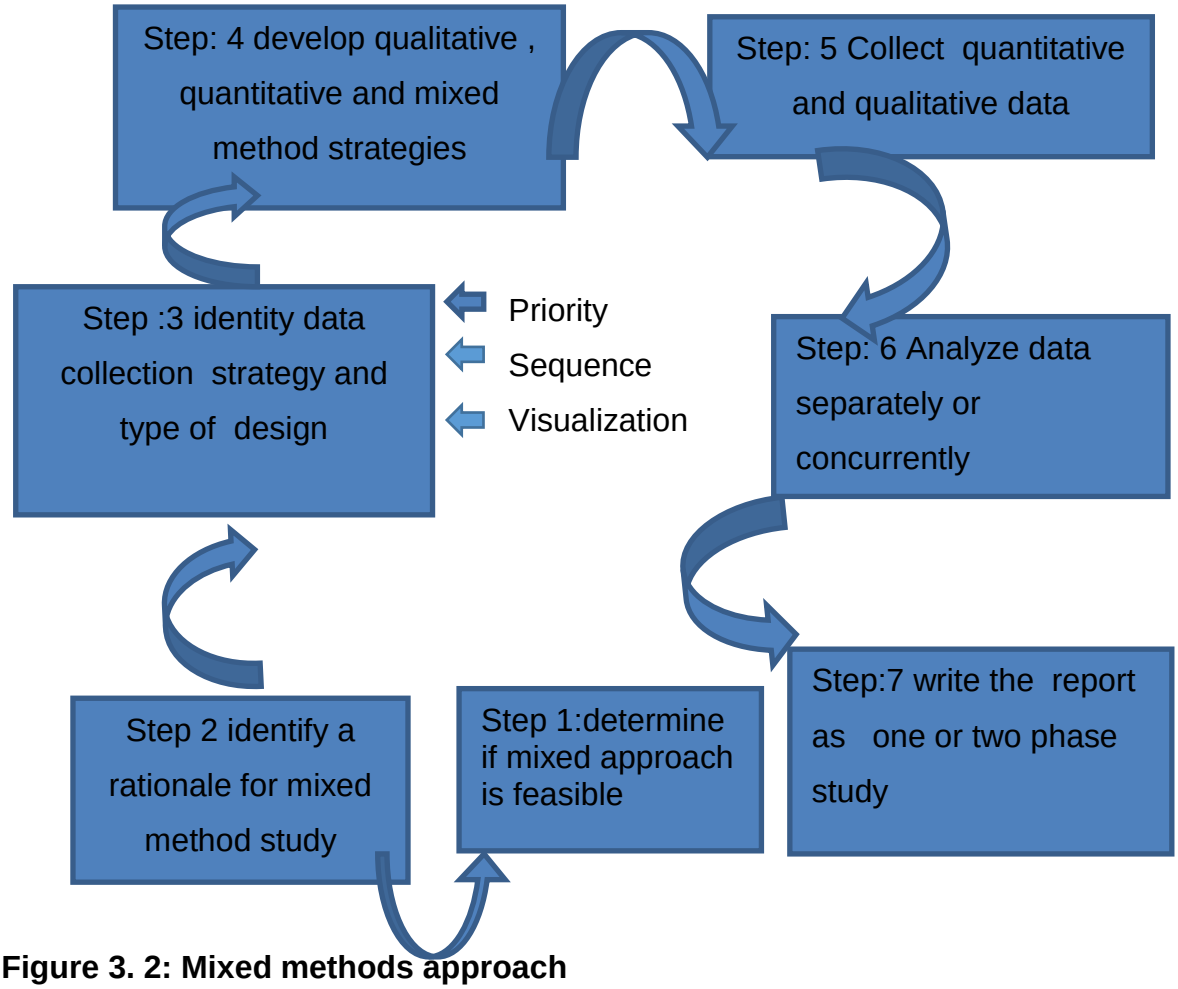


Figure 3. 2: Mixed methods approach
Source: Crewell (2012)

According to Creswell (2003), there are six types of mixed methods research design: sequential explanatory; sequential exploratory; sequential transformative; concurrent triangulation; concurrent nested; and concurrent transformative. This study used the concurrent nested mixed methods.

3.2.3.1 Concurrent Nested Research Design

Kroll et.al (2005) posit that the term 'concurrent' indicates that both qualitative and quantitative data are being collected at the same time. Similarly, Creswell et al. (2003) assert that a concurrent mixed method requires data to be collected at the same time or in parallel within the same study where one method dominates while the other is implanted. For the purpose of this research, the concurrent nested design is found appropriate. This is because the concurrent nested design gives precedence to one stage of data collection which controls the project, while the second stage is embedded or nested into the project and plays a supporting role. The concurrent nested method is also reliable for corroborating, cross-validating, or confirming of the findings. This study thus relied on the qualitative data which confirmed the results from the quantitative data. Figure 3.2 illustrates the concurrent mixed methods:

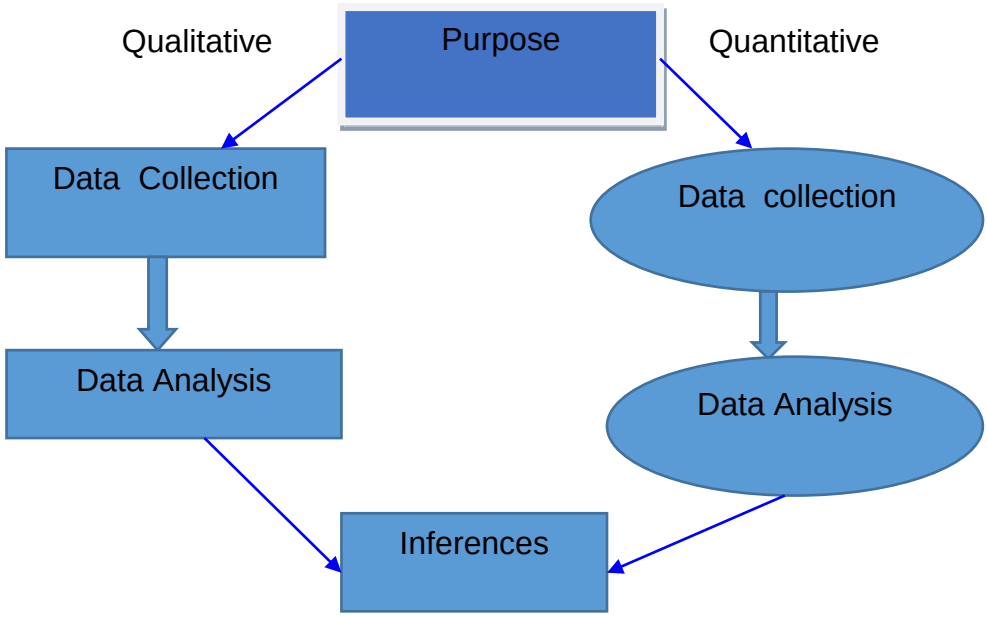


Figure 3. 3: Concurrent Mixed Method

As mentioned earlier, in the concurrent nested studies, one of the methods dominates whilst the other one is embedded, or nested. The dominant method in the current study is quantitative and this was embedded or nested in the qualitative data. The embedded approach in most cases addresses a different question in the main research question. The research questions which were answered using the embedded approach were gathered from a secondary data which is related to the objectives of the study. The secondary data in this study were ninety-one passages from non-prescribed supplementary English Language textbooks that were subjected to readability test using seven readability formulas. It also comprised the comprehension passages administered to students as test to determine their performance in the English language and to establish the relationship between their performance and levels of text readability and comprehension.

Information pertaining to the study was sort for, from different levels (quantitative and qualitative). Although both primary and secondary data were utilized in the concurrent nested design, priority was given to the primary data collection approach with less emphasis placed on the nested approach. The primary data was made up of the interviews of three monitoring and supervision staff of GES, the NaCCA Curriculum Officer for Languages and twelve selected staff of the five private schools understudied. The data however were mixed during the analysis stage. The primary and secondary data which were used in the study in accordance with the concurrent nested design, gave the researcher a broader perspective than it would be gained from using a principal data collection method. In a nutshell, the concurrent nested design was useful in addressing different research questions either than the dominant ones. It also helped to gather information from different groups within the setting of the study.

Again, the choice of the concurrent nested design by the researcher was informed by its strengths and relevance to the present study. For example, the concurrent nested design permitted the researcher to collect two types of data simultaneously: both quantitative and qualitative data allowing for varied perspectives from each data collected. The design for instance, helped to collect

data through interviews to determine whether the personnel responsible for the selection and prescription of textbooks have the requisite expertise and technical knowledge to do so. More so, the design was relevant in determining the difficult nature of comprehension passages in textbooks used by SHS students in the private schools. Varied responses were gathered to answer research questions 2, 3 and 4. Details of the results are presented and discussed in chapter 4.

3.3 Population

Research population refers to all subjects of the research (Arikunto, 2010). Sugiyono (2010) also expatiates population as the entire research subject or object that has certain characteristics and quality at the disposal of the researcher to the study. Additionally, Chaudhury (2010:5) defines research population as "… an entire group about which some information is required to be ascertained". Participants in the entire population must at least share a particular attribute that is of interest to the researcher. Bartlett et al. (2001) are of the view that the particular attributes of participants in the population is what makes participants eligible as population members to the researcher.

Lopez and Whitehead (2013) assert that including the general or the entire population in a study often creates constraints on participants which might in the long run violate the research goals, assumptions and the context. As a result, largely, refinement on the general population in terms of a target population is a rewarding step to the achievement of a study's objectives. Again, Bartlett et al. (2001) perceive the target population as participants in a study who have specific attributes which are of interest and are of much relevance to the study. The researcher however focuses on participants who can best share experiences and thoughts to address the research goal. To determine the target population therefore, the researcher ought to identify and eliminate individuals of the general population who may not have the ability to share experiences and thoughts in ample clarity and in-depth.

3.3.1 Study site/General population

The Adentan Municipal Education Directorate is one of the newly formed Municipalities in Ghana. It was created out of Tema Metropolitan Education

Directorate and came into existence on the 1st September 2008. There are fifty Junior High Schools; fifteen (15) of which are public and thirty-five (35) private Adentan directorate. Also, there are eleven (11) Senior High Schools, ten of which are private and one public. The directorate superintends over both Junior and Senior High Schools in the area.

3.3.2 Target Population

For the current study, a distinction was made between the general and a target population following the precedence that has been discussed earlier. The target population on the other hand, was put into four categories. The first includes all the students in the private SHS in the Adentan Municipal Education Directorate within Accra, the national capital, who use supplementary English language textbooks which are not prescribed by NaCCA. The total student population of the study was eight hundred and seventy-two (872) from five (5) selected private SHS in the Adentan Municipal Education Directorate within Accra. The students were included in the study because they use supplementary English language textbooks that were not prescribed by NaCCA.

The second category was made up of GES officials and this included NaCCA Curriculum Officer of Languages, and the Supervision and Monitoring officers of Adentan Municipal Education Directorate. This category has a total population of 18 persons but four participants were selected. The NaCCA Curriculum Officer for Languages was included in the study because the NaCCA unit is responsible for assessing and prescribing textbooks to be used by pre-tertiary educational institutions including the private SHSs. The Supervision and Monitoring officers of Adentan Municipal Education Directorate were also included because they are supposed to monitor and ensure compliance to NaCCA's directives.

The third target group included proprietors/headmasters, assistant headmasters and English language teachers of private SHS in Adenta Municipality. The total population of this group was 15. This group has a great responsibility to determine the kind of English language textbooks to be used by students of private SHS, hence, their inclusion in the study. The total number of participants selected was 12.

The fourth target population which answered research question 1, included Ninety-one (91) comprehension passages between 150-600 words selected from four commonly used supplementary English language textbooks. These passages were needed to undergo the scientific readability test to determine the readability levels and age appropriateness of passages in the English language textbooks used by the SHS students.

The choice of 150-600 words in a comprehension passage is based on the fact that it is the suggested length of a text for the electronic version of the various readability formulas used in this study (Johnson, 2000). Table 3.1 shows the target population and the sample drawn.

Table 3. 1: Sample size

Heading	Total No. Subjects	Total No. of sample drawn
NaCCA subject coordinators	5	1
Monitoring / Supervision unit	13	3
Non-Prescribed supplementary Eng. Lang. Textbooks	10	4
Private Senior High School	10	5
Head Teacher	5	4
Assistant Head Teachers	4	2
Assistant Head/ English teacher	1	1
Eng language teachers	5	5
Passages in four supplementary Eng. Lang. Textbooks	162	91
SHS 1-3 students	872	492

Determining the target population of this research is essential in order to set clear directions on the scope of the objective of the research and the data collected. It also defined the characteristic variables of the participants who qualify for the study and most importantly, provided the scope for determining the sample size.

3.3.3 Sample Size

DeVaus (2001) argues that the selection of sample size hinges on funds, time, access to potential respondents, planned methods of analysis, and the degree of precision and accuracy required. Two main sample sizes were chosen for this research. These include the respondents for interview (qualitative approach), readability test and comprehension test (quantitative approach). In terms of the interview method, the sample size consists of a NaCCA Curriculum Officer for Languages, 4 head teachers, 2 assistant head teachers and 5 English teachers across the five selected schools, and 3 GES staff, making a total of 16 respondents.

With regard to the quantitative approach, the study adopted the sample size determination table by Krejcie and Morgan (1970) and Research Advisors (2006). The Research Advisors (2006) proposed a required sample size for a given population, and the level of confidence and margin of error (degree of accuracy) that comes with it. Based on the recommendations of Research Advisory (2006) and considering the total enrollments (872) of five selected schools, the researcher chose a total sample size of 492 at a confidence level of 95% and a margin of error – 5% using the table for determining sample size from a given population (Krejcie & Morgan 1970; Research Advisors, 2006).

Even though the overall enrollment for the five selected schools was 872, the researcher determined the sample size from the total enrollment of each school because there were huge differences in the enrollment figures across the selected schools. Thus, 84 was sampled from the first school with 122 total enrollments; 195 was sampled from the second school with 423 total enrollments; 42 was sampled from the third school with 55 total enrollments; 153 was sampled from the fourth school with a total enrollment of 251; and 18 was sampled from the fifth school with a total enrollment of 21.

Table 3.2: Breakdown of sample size of SHS participants

School	SHS 1	SHS 2	SHS 3	Total Population	Sample Size
1	28	28	28	122	84
2	65	65	65	423	195
3	14	14	14	55	42
4	51	51	51	251	153
5	7	7	7	21	18
Total	164	164	164	872	492

The selection of this sample size is consistent with the views of Saunders *et al.* (2009) that it is normally good to work with a confidence level of 95% because it implies that at least 95% of these samples would be certain to represent the characteristics of the population while the margin of error (or degree of accuracy) – 5% shows the precision of your estimates of the population.

3.4 Sampling Technique

In order to efficiently answer the research questions, an appropriate sampling technique needs to be selected from the population since neither time nor resources will permit the researcher to analyze the entire population. Sampling according to Salant and Dillman (1994), is a fixed plan for obtaining a sample from a given population. It refers to the technique or the procedure involved in selecting items for the sample. Adding his views, Taherdoost (2017) states that the sampling procedure is to clearly describe the target population in general.

Sampling techniques can be divided into two types: probability or random sampling and Non- probability or non- random sampling. Each of these sampling methods include different types of techniques of sampling. The selection of a particular method depends upon the objectives of the study. This study adopted the non-probability sampling technique.

Non-probability sampling technique is defined as a sampling technique in which the researcher selects samples based on the subjective judgment of the researcher rather than random selection. It is a less stringent method. This

sampling method depends heavily on the expertise of the researchers (Etikan, Musa & Alkassim, 2016). Some non-probability methods of sampling include convenience sampling, purposive sampling, quota sampling and snowball sampling.

Specifically, a homogenous purposive sampling technique was used to select five schools from the Adentan Municipal Education Directorate in Accra, the capital city of Ghana. Homogenous purposive sampling is a purposive sampling technique that aims to achieve a sample whose units (for instance, people or cases) share the same or similar characteristics or traits such as; a group of people that are similar in terms of age, gender, background and occupation (Donina & Hasanefendic, 2019).

Homogenous purposive sampling strategy was useful for selecting study participants in the current study because its tenants is based on predetermined criteria such as the level of knowledge or expertise on a phenomenon being investigated (Kusi, 2012). Although this sampling technique is based on the judgment of the researcher(s), it allows the researcher(s) to select respondents with rich information and, at the same time, respondents who are willing and available to participate in the survey (Etikan et al., 2016). Based on these reasons, the researcher adopted the purposive sampling.

The convenience sampling as a form of non-probability sampling technique was used to select the students in the private SHS from the Adentan Municipal Education Directorate. The convenience sampling technique was used to select students because it gave the opportunity to the researcher to use the students who were available during the data collection period. In addition, the researcher purposively selected and interviewed the NaCCA Curriculum Officer for Languages who is directly involved in assessing and prescribing textbooks out of a total of five NaCCA officers because the study analyses the readability of English Language textbooks. The same purposive sampling was used to select 3 GES staff (those in charge of supervision and monitoring only) from the Adentan Municipal Education Directorate. The proprietors, headmasters and their assistants, and English teachers of private SHS were also selected through

purposive sampling. The purposive sampling is used to select these respondents because they are directly involved in the decision on the selection of English language textbooks for the selected schools.

The last sampling involved the selection of all the passages between 150 – 600 words from the four supplementary English language textbooks. In all, ninety-one (91) passages were selected through census. All the passages were selected in order to be fair in making generalizations.

3.5 Research Instruments

The three main research instruments used in this research are interview guides, online readability calculator and comprehension tests. Ninety-one (91) passages were selected from four non-prescribed supplementary English Language textbooks and subjected to readability tests using seven formulas from the online readability calculator and six (6) comprehension passages administered as tests to SHS 1-3 students.

3.5.1 Non-prescribed Supplementary English Language Textbooks

The textbooks include: 1) Global/Approacher's Series English for Senior High Schools Comprehension, Summary and Essays, 2) Aki-Ola Series English Language for SHS 3) A Comprehensive Core English Language for Senior High Schools and Colleges and 4) West Africa Book Project English Language for Senior Secondary Schools (SSS). A list of recommended and prescribed supplementary English Language textbooks which does not include the ones tabulated below is attached as appendix 15.

Table 3. 3: Non-prescribed Supplementary English Language Textbooks

S/N	Name of Book	Levels
1	A Comprehensive Core English Language for Senior High Schools and Colleges	SHS 1-3
2	West Africa Book Project English Language for Senior Secondary Schools (SSS)	SHS 1-3
3	Global and Approacher's Series English for Senior High Schools Comprehension, Summary and Essays	SHS 1-3
4	Aki-Ola Series English language for SHS	SHS 1-3

3.5.2 Interview Guide

An interview guide is a qualitative data collection instrument that is usually used under interview method. Interviews are mostly conducted under qualitative research because they are in-depth and issue based, allowing for the objectives of the study to be well covered (Kusi, 2012). Edwards and Holland (2013) also submit that interviews are beneficial for understanding how social institutions, discourses and processes function, and they are also more suitable for exploring and describing the personal experiences and perspectives of participants.

However, interviews have limitations stemming mainly from the difficulty of replication. When interviews involve many people and last for long hours, the large amounts of textual data that emerge are also challenging to analyse. Interview guides are also too easily influenced by social context environment. The interview guides for this exercise were designed by the researcher based on the objectives and scope of the study. The interviews conducted in this study were however in-depth and issue based, allowing for the objectives of the study to be well covered (Edwards & Holland, 2013).

Qualitative studies may make use of different kinds of interviews: structured, semi structured or non-structured (Edwards & Holland, 2013). The interviews for this research were semi-structured to create room for follow up questions from the researcher and free expressions from the respondents. The semi-structured

interview is a qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions. Even though it is a formal structured set of questions, it is very flexible and does not follow strictly the formalized set of questions so, the researcher is able to ask follow-up questions that enables the respondents to express themselves freely. This allows for a discussion rather than a straight forward question and answer format (Conrad & Serlin, 2011; Kusi, 2012; Edwards & Holland, 2013).

3.5.3 Online Readability Calculator

The Online Check Text Readability is a software application that can receive a sample size text between 150-3000 words of plain text for conducting readability test. This instrument has an empty box which allows the researcher to feed in soft copy text. The text is then processed after answering 'Yes' to the security check question "Are you human?". The results are produced based on seven readability formulas and their interpretations. The results include the 'Readability Consensus' which gives an average score of the seven readability formulas--Flesch Reading Ease Score (FRE), Gunning Fog Index (GFOG), Flesch-Kincaid Grade Level (F-KGL), The Coleman-Liau Index (CLI), The SMOG Index (SMOG), Automated Readability Index (ARI), and Linsear Write Formula (LWF).

Though most existing studies have used FRE, GFOG and FKGL, research shows that it is more efficient and reliable to use multiple readability formulas (in this study seven formulas were used) which give a Readability Consensus (RC) and allows for comprehensive comparative analysis of the results (Owu-Ewie, 2014 & Hassan et al, 2016). The Check Text Readability Calculator also shows Word Statistics where the total number of words per sentence (WPS) and sentence per word are rated with their averages. According to Vincent (2014), when an average sentence length is 14 words, readers understand more than 90% of what they are reading. At 43 words, comprehension drops to less than 10%. Ultimately, the Check Text Readability also shows Graph Statistics of the various grade levels scored for a text.

3.5.4 Comprehension Passages / Questions

Comprehension tests are normally used in quantitative research to assess a person's ability to read and comprehend written information quickly. They are administered to evaluate the level of understanding of students in English Language. Comprehension tests are also used to determine whether texts are well interpreted or understood exactly the way they are intended to (Conrad & Serlin, 2011).

Comprehension tests vary in content and style but they all evaluate the comprehension of an information and the students' ability to analyze a number of answers and choose the most suitable one (Clemens et al., 2020). In order to pass the basic comprehension test, a student must understand the meaning of the short passage or article under consideration. The basic purpose of reading comprehension tests is to test learners' ability of understanding of what they read (Alhamad et al., 2017; Rutzler, 2017).

There are no fixed procedures for conducting comprehension tests. Often the tests are strictly timed and the test takers are expected to read the passage quickly and answer the questions accurately. A comprehension test can be oral or written. There are several ways of testing reading comprehension such as using Multiple Choice Questions (MCQs), open ended questions, short answer questions, cloze items, true/false items, matching items, fill-in-the-blanks, ordering and summarizing (Brown, 2004; Keenan, Betjemann & Oslon, 2008; Clapham, 2014; Cutting, 2017).

In this study, there were six passages accompanied with their questions accordingly. The passages ranged between three to eight paragraphs. The questions are open-ended and the same that the author included with the passages (see Appendix 8). Some of the open-ended questions required short answers while others required single-word answers. All the six questions came with specific instructions as to what responses were required of the test takers. The papers were marked and scored based on WAEC'S marking scheme for WASSCE English language paper.

3.6 Data Collection

The data collection procedure is discussed in three categories and each is aligned with the appropriate research question.

3.6.1 RQ 1. What are the readability levels of selected passages of non-prescribed supplementary English language textbooks used by private SHS students in the Adentan Municipality?

The first category included soft copies of the 91 selected passages. The researcher selected randomly two passages from the topics yet to be taught.by teachers in the five private schools. The passages were typed using the Microsoft Word processor. The typed passages were then proof-read to ensure that all punctuations were the same as in the original hard-copies. Since readability formulas depend on sentence structures this exercise was necessary. The typed passages were then uploaded and subjected to an online readability calculator to determine the readability levels based on the seven formulas such as: Gunning Fog Index, Flesch-Kincaid Grade Level, Flesch Reading Ease score, The Coleman-Liau Index, The SMOG Index, Automated Readability Index and Linsear Write Formula. In exception of Flesch Reading Ease and Gunning Fog, the rest of the readability formulas were used to measure the grade levels of the texts to ascertain whether the texts match the grade levels of the students. The readability formulas are built on the difficulty of words (semantic factors) and the difficulty of sentences (syntactic factors).

3.6.2 RQ 2. Which scientific criteria are used by the authorities of private SHSs to select non-prescribed supplementary English language textbooks for their students?

RQ 3. To what extent are the officials of GES-Adenta aware of the use of non-prescribed supplementary English language textbooks by private SHSs in Adenta?

RQ 4. What measures have been put in place by NaCCA to ensure the usage of suitable and prescribed supplementary English language textbooks at the SHS level?

In the second category, data was collected through semi-structured interviews to elicit responses from the NaCCA Curriculum Officer for Languages, and GES staff that are responsible for selecting English language textbooks for their schools based on the GES criteria (used for selecting textbooks for SHS). Semi-structured interviews were also conducted with head teachers and their deputies, proprietors and English teachers of the private schools, who are responsible for authorizing English language textbooks for their schools. In the interview guide (see Appendix 9a,9b & 10-Section 4:242-249), specific areas such as the criteria used to select supplementary English language textbooks were explored. In addition, they were asked whether the criteria used considers the age appropriateness and grade levels of students, whether the criteria are scientific, whether the textbooks selected covers the syllabi, and whether the passages in the textbook were easy to comprehend or not. Responses were recorded having received permission from the respondents. The interview guide had open-ended questions which allowed the respondents to express themselves freely. The guide was prepared for the private schools, GES and NaCCA respondents. Each of the three interview guides contained questions that covered the objectives and scope of the study.

The interview guide for the private school staff was to help answer research question 2 (see Appendix 9a:242). That is, to find out which scientific criteria are used by the authorities of private SHSs to select non-prescribed supplementary English language textbooks for their students. The guide for the GES staff was to find out the extent to which GES officials are aware of the use of non-prescribed supplementary English language textbooks by private SHSs (see Appendix 9b:244). Lastly, the NaCCA officer was interviewed using the semi-structured

interview guide designed to elicit responses on research question 4: the measures NaCCA has put in place to ensure the use of approved textbooks (see Appendix 10:247).

3.6.3 RQ. 5 What is the relationship between readability levels of non-prescribed supplementary English language textbooks and performance of SHS students in English language?

In the third category, data was collected using comprehension tests. The comprehension tests were purposely administered to 492 sampled students (SHS1-3) from the five schools to obtain the performance levels of the students. The English teachers were consulted to provide a list of passages from the two textbooks that were yet to be taught in class. The researcher then chose 6 passages out of the untreated ones which runs through the five schools from the Global and Approacher's Series English Language for SHS and Aki-Ola Series English Language for SHS. The two textbooks were used because they were the two commonly used by all the five selected private senior high schools. The comprehension questions attached to each of the six passages in the two supplementary English Language textbooks were administered as a written test to assess students' comprehension of texts and the outcome on their performances in English Language.

Since there are no fixed procedures for conducting comprehension tests, the researcher adopted a proposed procedure by Alhamad et al. (2017) to suit the current situation. Alhamad et al. (2017) proposed that a comprehension test is best administered under three stages; the pre-administration, administration and the post administration. According to Alhamad et al. (2017), the pre administration stage involves an advance preparation of the test instrument as well as the venue for the administration of the test. The administration stage is where the test is administered under monitoring and supervision while the post administration stage involves sorting of the test, preparation of marking/scoring sheet, marking and declaration of the results. The comprehension test thus was administered based on the proposed procedure by Alhamad et al. (2017).

Pre-Administration of Test

Prior to the administration of the tests, the researcher surveyed the five schools to collect enrolment figures of SHS 1-3 students. The total enrolment received from the headteachers was 872 out of which a total sample size of 492 was drawn at a confidence level of 95% using the sample size determination table by Krejcie and Morgan (1970) and Research Advisors (2006) see attached appendix18. Thus, 84 students were sampled from the first school with 122 total enrollments; 195 students were sampled from the second school with 423 total enrollments; 42 students were sampled from the third school with 55 total enrollments; 153 students were sampled from the fourth school with a total enrollment of 251; and 18 students were sampled from the fifth school with a total enrollment of 21. The sample size was therefore predetermined by the researcher before the set day of the test administration. The consent of students who were willing to participate in the study was sought earlier as well as that of parents of students under 18 years of age. In consultation and agreement with the headteachers, their assistants, class teachers and the English Language teachers, a common date, venue and time for administering the test in all five schools were arranged. The comprehension passages and questions were prepared by the researcher, checked and vetted by two colleagues of the researcher who are English Language examiners at WAEC. It was then distributed according to the sampled enrolment for each school and class, sealed in an A-4 envelope and labelled with names of the five schools by the researcher.

Administration of Test

On the set day, the researcher reported with three research assistants for each school who had been groomed and trained on the administration and supervision of the test under the monitoring of the researcher. The participant's information was read to the test takers and their consent sort prior to the start of the test. Respondents were then instructed to assume their seats as arranged in their test rooms. Instructions about the comprehension tests were clearly spelt out on the paper and the duration boldly stated on the paper. SHS 1 students were given an hour, SHS 2 students had 45 minutes while SHS 3 students were given 40 minutes to read the passages and provide answers to the questions on the

passages. The durations were given based on the standard practiced in the SHSs. The questions were open-ended and short answer and they were answered on the question papers as spaces were provided on the papers accordingly. Two set of passages were administered, and respondents randomly answered either of the passages. Since the sample size was pre-determined by the researcher, questions were fairly distributed to the exact number needed for the tests. Same number was retrieved after the tests in all five schools. The test was administered at the same time in all five schools to avoid leakages of the questions. There was no discrimination based on gender or age. All participants who were willingly to be part of the test had a fair opportunity. The test was taken under examination conditions to avoid cheating.

Post-Administration of Test

The retrieved test papers were first sorted according to same passages and they were marked based on marking schemes prepared by the researcher according to the WASSCE standard marking scheme (see appendix 8). The marking schemes were proofread and edited by colleague English Language examiners from WAEC who also assisted the researcher in the marking of the scripts. The results were coded to run descriptive statistics analysis in the SPSS version 21. The responses to the questions on the passages were coded using Likert's scale ranging from correct (1) to incorrect (2). The performance assessment was based on the levels (Year 1, Year 2, and Year 3).

3.7 Data Collection Process

Prior to the collection of data, the researcher was given approval to a proposal by the Higher Degrees Committee of the School of Human and Social Sciences in May, 2019. The ethical clearance was received in July, 2020 from the Ethics Committee shortly after which the data gathering process began with the private schools, the GES and NaCCA respondents. Letters were sent to the authorities in the various institutions to seek approval to gather data for the study. This posed some challenges as the researcher had to follow up on several occasions to

receive the approval letter even though approval was given verbally. Collecting enrolment data from the five schools for sampling respondents also became a back-and-forth issue as a result of the non-availability of the headteachers due to the Covid-19 pandemic. Besides, some of the enrolment figures had to be updated to reflect the real population so the researcher had to follow up many times. Finally, after receiving approval from the various institutions, the data gathering process commenced from August, 2020 and ended in October, 2020.

The readability test however, was conducted much earlier as that data did not involve human subjects and ethics clearance. Since the non-prescribed English language textbooks were already in the public domain, the four books were gathered in June, 2019 after the proposal was approved. The hard copy passages were selected based on the fact that they contained between 150 to 600 words. Ninety-one (91) passages were selected from the four textbooks as a result. The passages were processed for the readability test and subsequently inputted into the online check text readability calculator. The results were reported under seven readability formulas based on their interpretation. A few challenges were encountered during the process of preparing the soft copy passages. Some of the passages had typographical errors that had to be corrected and this took a lot of time and energy. Moreso, it was tedious inputting the online readability checker with ninety-one passages as each passage had to be copied into the plain box, one at a time and the results generated from the seven readability formulas were also recorded using the same process.

With regard to the semi-structured interviews, the interview guide was used. The interview guide had open-ended questions which allowed the respondents to express themselves freely. The guide was prepared for the private schools, GES and NaCCA respondents. Each of the three interview guides contained questions that covered the objectives and scope of the study. Most of the interviews conducted were face-to-face while a few others were conducted through google meet and zoom applications. This came with some challenges as some of the respondents could not use any the applications by themselves. The researcher had to educate and also

groom them on how to use the google meet and zoom for effective communication.

The challenges that came with the interview took various forms. For instance, some of the respondents had their faces covered with nose mask while others did not show their real faces in the video due to the Covid-19 pandemic. As a result, the researcher could not observe the behaviour and emotions of some of the respondents. On many occasions, the session was disrupted due to the internet instability. Regardless, the vital information and details about the respondents' views and thoughts on the subject matter were successfully explored.

Comprehension test were administered to 492 SHS 1-3 students selected from five schools. As mentioned earlier (see 3.6.3) and later under section 3.8.3.2, the performance of the students was assessed from passages administered to them as a comprehension test. The comprehension questions attached to each of the six passages randomly selected from the two supplementary English Language textbooks w/ ere administered as a written test to assess students' comprehension of texts and the outcome on their performances in English Language. Based on this, two set of passages were provided, and respondents randomly answered either of the passages. There were some challenges encountered here also. A few of the students came without their nose mask hence could not take part in the study. A school had to improvise furniture for social distancing and one other school had to write in two turns to avoid crowding in the exam room. Although, all the test papers were successfully retrieved, marking took some time due to the large numbers of the test takers. In spite of the challenges, the procedure was successfully.

3.8 Data Analysis

Data analysis is a process of examining, cleaning, transforming and modeling the collected data and information for providing answers to the research questions (Creswell & Clark, 2010). Ader and Mellenbergh (2008) described data analysis as a process of editing, cleaning, transforming, and modeling data purposely to highlighting useful information, suggestions, conclusions and supporting decision

making. The collected data was, therefore, appropriately edited and coded to make meaning out of them. The editing was done to correct errors, check for non-responses, accuracy, and correct answer. The coding was also done to facilitate data entry and a comprehensive analysis.

3.8.1 Thematic Content Analysis: Qualitative

RQ 2. Which scientific criteria are used by the authorities of private SHSs to select non-prescribed supplementary English language textbooks for their students?

RQ 3. To what extent are the officials of GES-Adenta aware of the use of non-prescribed supplementary English language textbooks by private SHSs in Adenta?

RQ 4. What measures have been put in place by NaCCA to ensure the usage of suitable and prescribed supplementary English language textbooks at the SHS level?

Research questions two, three and four (2, 3 and 4) were answered using qualitative data analysis techniques. The qualitative data was analyzed using thematic analysis technique. This technique is mostly used to analyze interview data. It focuses on identifying particular pattern among textual data set (Kusi, 2012). The steps recommended for thematic analysis by Kusi (2012) were followed in analyzing the interview data:

- First, the researcher read and re-read the transcribed data closely in order to familiarize with the data.
- Then, clear labels or codes were developed that helped to identify and distinguish important features of the transcribed data.
- The next stage involved the search for themes.
- The themes were identified based on similarities and pattern of responses.
- The themes were further reviewed and refined. Subsequently, the re-adjusted themes were used for the analysis.
- The refined themes were used for weaving together data extracts and analytic narratives in relation to extant literature.

The analysis process was followed sequentially; however, it was also recursive in some instances as the researcher had to go back and forth negotiating themes and finding extracts from the transcribed data to support the analysis. Further, based on the thematic analysis of various responses, the researcher grouped,

classified, and described the various criteria used by NaCCA personnel and private schools to select textbooks for their schools.

3.8.2 Readability Test Analysis: Quantitative

RQ 1. What are the readability levels of selected passages of non-prescribed supplementary English language textbooks used by private SHS students in the Adentan Municipality?

To answer research question one (1) as stated above, comprehension passages were analyzed using online computer readability software and SPSS Version 21. Here, ninety-one (91) comprehension passages from four non-prescribed supplementary English Language textbooks were subjected to seven readability measures (Gunning Fog, Flesch-Kincaid Grade Level, Flesch Reading Ease score, The Coleman-Liau Index, The SMOG Index, Automated Readability Index, and Linsear Write Formula) to calculate the readability levels of the 91 passages and to further determine their suitability to SHS students (see appendices 11, 12, 13 and 14).

Each readability formula was used to determine the readability level of each passage in each of the four supplementary textbooks. The readability test results were coded on a scale of 1 to 7, where 1 represents above 17^{th} grade (that is, postgraduate level); 2 represents 13^{th} – 17^{th} grade (that is, college level); 3 represents 10^{th} – 12^{th} grade (that is, SHS1 – SHS3); 4 represents 8^{th} – 9^{th} grade (that is, JHS2 – JHS3); 5 represents 7^{th} grade (that is JHS1); 6 represents 5^{th} – 6^{th} grade (Primary 5 – Primary 6); and 7 represents 4^{th} – 5^{th} (that is, Primary 4 – Primary 5).

Thereafter, the averages were calculated from the results of the various passages from each textbook to find the readability level of the books by running descriptive statistics analysis, where the mean, standard deviation, skewness, and kurtosis were presented and discussed. The outcomes of the formula of the passages in each textbook were reported in the chapter four under readability test results.

3.8.3 Descriptive Statistical Analysis: Quantitative

RQ. 5 What is the relationship between readability levels of non-prescribed supplementary English language textbooks and performance of SHS students in English language?

The research question five (5) stated above was answered using quantitative data. Quantitative data analysis requires the use of statistical tools. In this study, SPSS version 21 was used to analyse the quantitative data. Descriptive statistics was employed to present the findings in a form of mean, standard deviations, skewness and kurtosis, and their interpretations meticulously explained. Correlation analysis was run to test the relationship between the independent variable (readability) and the dependent variable (students' performance). Multiple regression analysis technique was also employed to test the predictive effect of readability level on students' performance.

3.8.3.1 Normality Test

In order to determine whether the readability and performance data were parametric or non-parametric (normality test), the researcher applied normality criteria of Tabachnick *et al.* (2001) which suggests that skewness and kurtosis must be within +1 and –1. This normality criteria is endorsed by Field (2009, 2015), and is widely applied in quantitative studies (Puni & Hilton, 2020; Puni *et al.,* 2018; Judge & Piccolo, 2004). The skewness and kurtosis results for the passages for both readability level and performance level are within +1 and –1 as depicted in Chapter four of this study. This implied that the data are parametric (normally distributed) and so parametric statistical tests could be carried out.

3.8.3.2 Analyzing Students' Performance Level

Descriptive statistics analysis was also conducted on the administered comprehension tests to ascertain the performance level of the students. The performance of the students was assessed from passages administered to them as a comprehension test. The respondents were instructed to read the passages and provide answers to the questions on the passages. Two set of passages were provided, and respondents randomly answered either of the passages. The retrieved test papers were marked, and the results were coded to run descriptive

statistics analysis (mean, standard deviation, skewness and kurtosis) in the SPSS. The responses to the questions on the passages were coded using Likert's scale ranging from correct (1) to incorrect (2). The performance assessment was based on the levels (Year 1, Year 2, and Year 3).

3.8.3.3 Analyzing relationship between Readability Level and Students' Performance

To analyze the relationship, the researcher first ran Pearson correlation analysis to establish the significant association or relationship between readability level and students' performance based on class levels and type of textbooks. Thereafter, multiple regression analysis was carried out to assess the cause-and-effect relationship between readability level of the textbooks (independent variable) and performance level of the students (dependent variable) to address research objective 5. Gender and age group of respondents were employed as control variables. This is to assess whether being a male or a female one could perform better given the readability level of textbooks. It is also to ascertain whether the age of the students influences their performance level given the readability level of the textbooks.

3.9 Ethical Consideration

Conducting research can be problematic, especially when the researcher has to depend on human subjects to access data. Ethical issues then, becomes critical to avoid infringing on the privacy of the subjects. For the same reason, Bickman and Rog (2019) emphasize that the researcher must be guided by ethics to avoid participants being exposed to danger, their rights being taken away from them and confidential information about the participants released to the public (Bickman & Rog, 2019).

Rahi (2017) refers to ethics as the quality of research procedures, with regard to their adherence to professional, legal, and social obligations to the research participants. It is the branch of philosophy that deals with morality (Polit & Beck, 2004:717). As this research involved human and non-human participants, the following ethical principles were adhered to. Prior to the commencement of the

study, ethical clearance was duly sought from the Research and Innovation Directorate of the University of Venda, South Africa.

Permissions were sought through formal letters to the Director of Adenta Municipal Education Directorate, the Executive Officer of NaCCA, the Proprietors and Headteachers of the five selected private SHSs in Adentan Municipal Education Directorate. Approval was received from these persons in order to meet the rights of participants to free consent, voluntary participation, confidentiality, anonymity, and informed consent as spelt out by Burns and Grove (2001).

3.9.1 The Right to Self-determination

According to Burns and Grove (2001), the right to self-determination is based on the ethical principle of respect for a person. It means that participants must be given adequate information regarding the research; they must be capable of comprehending the information; and they must have the power of free choice, enabling them to consent voluntarily to participate in the research or decline participation. To achieve this, the researcher was first introduced to the participants. The participants were then briefed on the nature, scope and purpose of the study. Each participant's role in the study was well explained. They were then informed about the filling of the consent form should they agree to participate in the study. Accurate and complete information given to subjects as documented on the participants' information sheet is under Appendices 3 and 4.

3.9.2 Informed Consent

Right of informed consent requires a researcher to seek the voluntary consent of subjects who have been well informed about the study, before they give their consent to participate in the study. Rahi (2017) emphasizes the need for the Kantian ethics of right of withdrawal, informed consent and minimal risk to be adhered to in research. Accordingly, subjects were informed about the various conditions pertaining to the research and their rights to participate voluntarily in the study or withdraw at any stage of the study. They were also assured of their right to anonymity and confidentiality before their consent were sought. Subjects who were willing to participate in the study were then given the informed consent form to complete and endorse. Under no circumstance was any respondent

coerced or forced against his or her will to participate in the study. See Appendices 5, 6 and 7 for samples of informed consent forms.

3.9.3 Right to Privacy, Anonymity and Confidentiality

Privacy is defined by Gans-Combe (2009) as the fundamental part of human dignity that allows an individual the right to accept or refuse interference by others in his life. It enables "individuals to exercise control over the disclosure of their information and over decision-making by them and about them" (Gans-Combe:15). Confidentiality on the other hand, is the researcher's management of private information shared by the participants, which must not be shared with others without the authorization of the participants (Burns & Grove). With regard to these principles, pseudo names and the designations of participants who provided confidential information were used in order to protect their identities as they were assured on the participants' information sheet. Some of the participants' designations were also coded- M1, M2, Y1, U1, D3 in Chapter 4 pages 160-165 so that their responses would not be linked directly to them.

Anonymity, according to Burns and Grove (2001), occurs when even the researcher does not link a participant with the data of that person (Burns & Grove, 2001). Although anonymity cannot be completely guaranteed in qualitative research (Streubert & Carpenter, 1999), the researcher ensured secured documentation and storage of data to prevent unauthorized access to the data. The authors of the textbooks were also assured that the content of their textbooks will be used solely for academic purposes and not for commercial gains. This was strictly adhered to in the study. All textbooks were labelled Book 1, 2, 3 and 4 in Chapter 4 where the analysis and results were presented.

3.9.4 Dependability and Credibility

Korstjens and Moser (2018:121) avers that "dependability involves researchers' evaluation of the findings, interpretation and recommendations of the study such that all are supported by the data as received from participants of the study". In other words, the dependability of the study is based on the stability of its findings over time. For dependability to be achieved in this study, data collected from participants were objectively analyzed to reflect the true views of the respondents using both qualitative and quantitative analytical tools as explained in Chapter

3.9.1- 3.9.3 of the study. Also, literature used in the study were properly acknowledged and referenced. The research process followed were duly explained and presented in detail for easy enquiry and comprehension so that other researchers could follow to reproduce similar results elsewhere.

Korstjens and Moser (2018) define credibility as the confidence that can be placed in the truth of research findings. “Credibility establishes whether the research findings represent plausible information drawn from the participants’ original data and is a correct interpretation of the participants’ original views” (Korstjens & Moser:121). In line with this definition, ethical methods of collecting data were followed to yield results that can be representative of the reality of the phenomenon investigated. The credibility of the study was also ensured through the rigorous use of multiple analytical tools such SPSS version 21, online readability measures, thematic analysis, Normality test and Pearson Correlation test to analyze primary and secondary data collected. The multiple procedure used to gather and analyze data gave credibility to the study as it helped to consolidate the weakness of one data type.

3.9.5 Validity and Reliability

The validity and reliability of the instruments were assessed to ensure that they validly and reliably, measure the research objectives. Validity is often defined as the degree to which an instrument measures that which it intends to measure (Blumberg et al., 2005). Validity of a research instrument evaluates the degree to which the instrument measures what it is intended to measure (Robson, 2011).

On the other hand, reliability refers to a measurement that provides reliable results with same values (Blumberg et al., 2005). It measures consistency, correctness, repeatability, and reliability of a research (Chakrabartty, 2013). It also specifies the degree to which results are without bias (error free), therefore it enables reliable measurement (Altheide & Johnson, 1994; Kher, et al., 2017). Both validity and reliability increase transparency and decrease chances to include researcher bias in research (Singh, 2014). Accordingly, this study applied these principles to achieve validity and reliability of the instruments.

Specifically, content validity and predictive validity tests were carried out. In terms of the content validity, Thomas (2006) asserts that it helps to confirm whether the instrument measure what it is intended to measure on the face of it. The researcher thoroughly read the selected passages and also referred them to other colleague lecturers to ensure that the contents are valid. The same process was repeated for the interview guides.

The researcher discussed the interview guides with the supervisors and their comments were used to refine the structure of questions. Thus, to a reasonable extent, the content validity of instruments was confirmed. In terms of the predictive validity, the researcher run the inter-item correlation test and the results as shown in Table 3.2 indicates that selected passages are predictively valid for both the readability tests and assessment of the performance level of students.

Table 3. 4: Inter-Item Correlation for Readability Passages

Scales	1	2	3	4	5	6	7	8
1. Flesch Reading Ease	1.00							
2. Gunning Fog	0.66**	1.00						
3. Flesch-Kincaid Grade Level	0.86**	0.78**	1.00					
4. The Coleman-Liau Index	0.66**	0.57**	0.66**	1.00				
5. The SMOG Index	0.84**	0.79**	0.90**	0.68**	1.00			
6. Automatic Readability Index	0.80**	0.77**	0.89**	0.72**	0.85**	1.00		
7. Linsear Write Formular	0.76**	0.70**	0.86**	0.48**	0.81**	0.86**	1.00	
8. Readability Consensus	0.93**	0.71**	0.89**	0.74**	0.87**	0.83**	0.75**	1.00

Note: **p<0.01 and *p<0.05

Source: ***Field Data, 2020***

In addition, Cronbach's alpha coefficients were calculated to confirm the reliability of the selected passages using Statistical Package for Social Science (SPSS) version 21. Field (2015) posits that Cronbach's alpha measures the internal consistency of the measuring scales and suggests that though alpha coefficient of 0.50 and above indicates strong reliability, 0.70 and above is ideal for a study of this nature. Therefore, since the alpha coefficients for the selected passages in the Table 3.3 are above the prescribed threshold of 0.70, the selected passages are strongly reliable for the study.

Table 3.5: Reliability Coefficients for Readability and Performance Passages

Scales	**Cronbach Alpha (α)**
Readability	
Flesch Reading Ease	0.95
Gunning Fog	0.96
Flesch-Kincaid Grade Level	0.95
The Coleman-Liau Index	0.96
The SMOG Index	0.95
Automatic Readability Index	0.95
Linsear Write Formular	0.95
Readability Consensus	0.95
Performance	
SHS1 Passage 1	0.79
SHS1 Passage 2	0.74
SHS2 Passage 1	0.76
SHS2 Passage 2	0.73
SHS3 Passage 1	0.73
SHS3 Passage 2	0.71

Source: ***Field Data, 2020***

3.10 Chapter Summary

This chapter discussed the research processes followed to achieve the objectives of the study. Detailed description of the mixed methods design used and its relevance to this research were elaborated in this chapter. Ensuing Chapters present rigorous analysis of the quantitative and qualitative data discussed in this chapter and the major findings confirming the literature explored in chapter two.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the results of the various analyses based on the research objectives. The main aim of the entire study is to assess the readability levels of non-prescribed supplementary English language textbooks used by private Senior High Schools in Adentan Municipal Education Directorate and how they affect students' learning outcomes. Specifically, the study aims to: (1) assess the readability levels and age appropriateness of selected passages of non-prescribed supplementary English Language textbooks using readability formulas;(2) determine what criteria is used by authorities of private SHS to select their English language textbooks; (3) find out whether authorities of GES-Adenta are aware of the unsuitable nature of some English Language textbooks used by private SHS in Adentan Municipality; (4) investigate whether interventions are put in place by NaCCA to ensure compliance with the usage of suitable and prescribed English Language textbooks at the SHS level; and (5) examine the relationship between readability levels and students' performance in English language.

The study adopted mixed method research approach, where both qualitative and quantitative data were obtained through interview guides and statistical analysis respectively. Ninety-one (91) passages were also selected from four non-prescribed supplementary English Language textbooks that are frequently used by the private SHS in the Adentan Municipality. While thematic analysis technique was employed to analyze the qualitative data, SPSS version 21 was used to analyze the quantitative data.

4.1 Results of Readability Test

The first objective of the study is to investigate the readability level and age appropriateness of non-prescribed supplementary English Language textbooks used by private SHS in the Adentan Municipality. This was done by selecting four non-prescribed supplementary English language textbooks that were commonly used by five selected private SHSs in the Municipality. The comprehension

passages in these textbooks were then selected and inputted into online scientific readability formulas namely: Flesch Reading Ease Score (FRE), Gunning Fog Index (GFOG), Flesch-Kincaid Grade Level (F-KGL), The Coleman-Liau Index (CLI), The SMOG Index (SMOG), Automated Readability Index (ARI), and Linsear Write Formula (LWF). Though most existing studies have used FRE, GFOG and FKGL, research shows that it is more efficient and reliable to use multiple readability formulas (in this study seven formulas were used) which give a Readability Consensus (RC) and allows for comprehensive comparative analysis of the results (Owu-Ewie, 2014 & Hassan et al, 2016). In addition to the readability scores, word per sentence and character per sentence were captured. The results of the tests are presented in the proceeding tables and scrupulously interpreted.

After obtaining the readability results from the scientific tests, statistical analysis was carried out to find the average readability level of the textbooks and the age appropriateness. Precisely, descriptive statistics analysis was conducted to report the mean, standard deviation, skewness, and kurtosis of the four non-prescribed supplementary English Language textbooks. Another descriptive statistics analysis was carried out on the frequently used textbooks (Book 1 and Book 2) and their passages have been demarcated for Year 1, Year 2 and Year 3. Thus, the readability in relation to performance level was also assessed in terms of SHS 1, SHS 2, and SHS 3.

4.1.1 Readability Results for Book 1

The readability test results for Book 1 (Aki-Ola Series English Language) are presented based on each readability formula and the RC. Table 4.1 depicts the readability results using FRE formula.

Table 4. 1: FRE Readability Results for Aki-Ola Series- Book 1.

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
1	1	2.6	Very difficult to read	Above 22 years
2	6	15.4	Difficult to read	18 – 22 years
3	6	15.4	Fairly difficult to read	15 – 18 years
4	13	33.3	Standard to read	13 – 15 years
5	9	23.1	Fairly easy to read	12 – 13 years
6	4	10.3	Easy to read	10 – 12 years
Total	39	100		

Source: ***Field data, 2020***

With reference to table 4.1, out of 39 passages, 1 passage is very difficult to read and 6 out of the 39 passages are respectively difficult to read and fairly difficult to read. However, 9 passages are fairly easy to read and 4 passages are easy to read. Meanwhile 13 passages are standard to read, indicating that majority of passages meet standard readability level.

Comparing FRE readability result to US grade level, it can be observed that 4 out of the 39 passages are good for students within the age group of 10 – 12 years, which means that such passages are appropriate for students in Primary 5 and Primary 6. Further, 9 passages are suitable for JHS 1, where students should be within 12 – 13 years old. Interestingly, the passages with the highest frequency (standard to read) are appropriate for JHS 2 and JHS 3 students who should be between 13 – 15 years. Only 6 passages are within the appropriate age for SHS students. It implies that 26 and 7 out of the 39 passages are respectively below and above the appropriate grade level of SHS students.

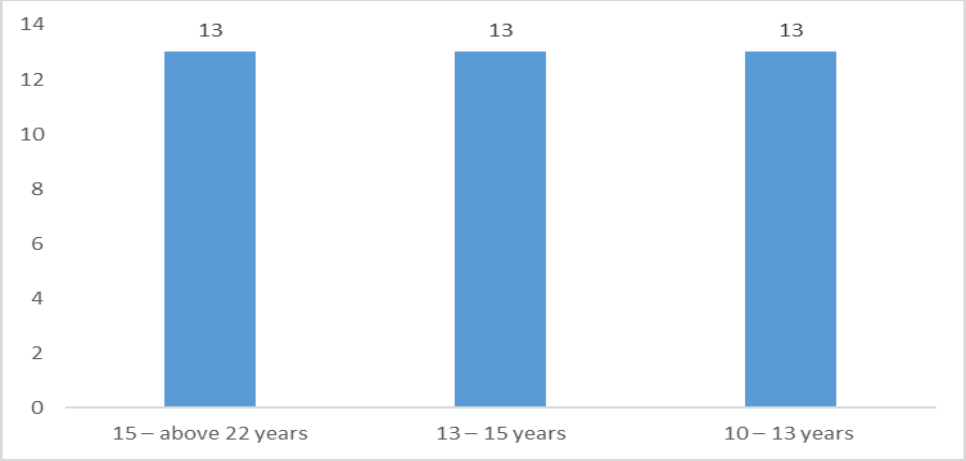


Figure 4. 1: FRE Interpretation

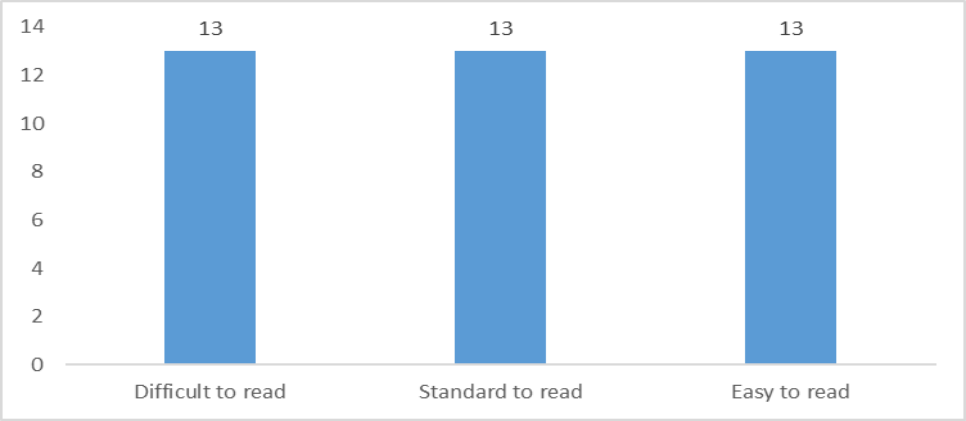


Figure 4. 2: FRE Age appropriateness in US grade level

Table 4.2 shows the result for GFOG readability test.

Table 4. 2: GFOG Readability Results for Book 1.

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
1	3	7.7	Very hard to read	Above 22 years
2	19	48.7	Hard to read	18 – 22 years
5	16	41.0	Fairly easy to read	12 – 13 years
6	1	2.6	Easy to read	10 – 12 years
Total	39	100		

Source: ***Field data, 2020***

The table above indicates that out of 39 passages, 3 passages are very difficult to read, 19 passages are difficult to read, 16 passages are fairly easy to read and 1 passage is easy to read. It implies that majority of the passages (representing 48.1 percent) are difficult to read. In terms of age appropriateness, Table 4.2 depicts that only 1 passage is suitable for students within 10 – 12 years, and they should be in Primary 5 and Primary 6. Similarly, 16 passages are appropriate for 12 – 13 year old students in JHS 1. However, 19 passages, which have the highest frequency, are readable for 18 – 22 year old students at college level, and 3 passages are appropriate for students at postgraduate level who should be aged above 22 years. With reference to the GFOG readability test, none of the passages are appropriate for SHS students.

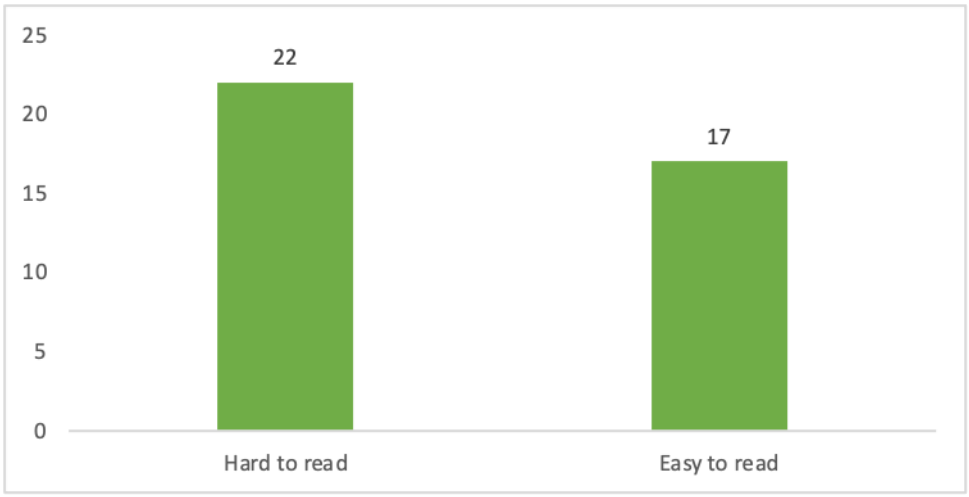


Figure 4. 3: GFOG Interpretation

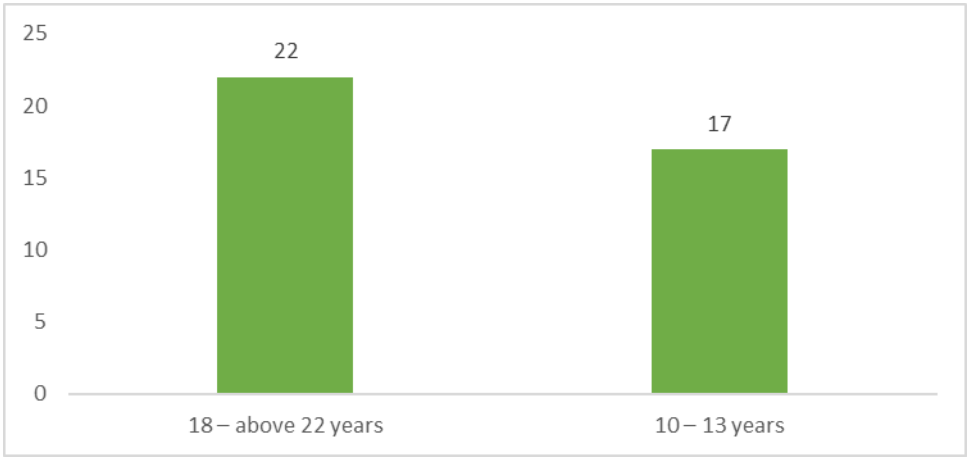


Figure 4. 4: GFOG Age appropriateness in US grade level

Table 4.3 presents FKGL readability results.

Table 4. 3: FKGL Readability Results for Book 1.

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
1	1	2.6	Postgraduate level	Above 22 years
2	2	5.1	College level	18 – 22 years
3	11	28.2	10^{th} – 12^{th} grade	15 – 18 years
4	10	25.6	8^{th} – 9^{th} grade	13 – 15 years
5	5	12.8	7^{th} grade	12 – 13 years
6	9	23.1	5^{th} – 6^{th} grade	10 – 12 years
7	1	2.6	4^{th} – 5^{th} grade	9 – 11 years
Total	39	100		

Source: ***Field data, 2020***

Data from table 4.3 shows that out of the 39 passages, 1 passage each represents postgraduate level and 4^{th} – 5^{th} grade level, indicating that these passages are appropriate for students above 18 years and students within 9 – 11 years. Also, 2 passages are for college level students, who should be aged between 18 and 22 years. Five (5) passages are readable for 7^{th} grade level with age appropriateness of 12 – 13 years; such students should be in JHS 1. Likewise, 9 passages are readable for 5^{th} – 6^{th} grade students within 10 – 12 years and should be in Primary 5 and Primary 6. This is followed by 10 passages which are readable for 8^{th} – 9^{th} grade level and should be suitable for students between 13 – 15 years in JHS 2 and JHS 3. Meanwhile, 11 of the 39 passages are readable for 10^{th} – 12^{th} students, who should be within 15 – 18 years at SHS. Thus, the passages (representing 28.2 percent) are appropriate for SHS students based on FKGL readability test.

Table 4.4 shows the CLI readability results for Book 1.

Table 4. 4: CLI Readability Results for Book 1.

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	12	30.8	10^{th} – 12^{th} grade	15 – 18 years
4	20	51.3	8^{th} – 9^{th} grade	13 – 15 years
5	5	12.8	7^{th} grade	12 – 13 years
6	2	5.1	5^{th} – 6^{th} grade	10 – 12 years
Total	39	100		

Source: ***Field data, 2020***

It is evident in table 4.4 that 12 out of the 39 passages are readable for 10^{th} – 12^{th} grade level (SHS students) with corresponding age appropriateness of 15 – 18 years. Further, 20 passages are readable for 8^{th} – 9^{th} grade students who should be aged between 13 and 15 years and should be in JHS 2 and JHS 3. A total of 5 and 2 passages are respectively readable for 7^{th} grade and 5^{th} – 6^{th} grade level, indicating that readers should be aged between 12 – 13 years and 10 – 12 years, and should be in JHS 1 and Primary 5 to Primary 6. The results imply that only 12 passages (representing 30.8 percent) are appropriate for SHS students while majority (representing 51.3 percent) are appropriate for JHS 2 and JHS 3 students.

Table 4.5 also reports the SMOG readability results for Book 1.

Table 4. 5: SMOG Readability Results for Book 1

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	1	2.6	College level	18 – 22 years
3	9	23.1	10^{th} – 12^{th} grade	15 – 18 years
4	15	38.5	8^{th} – 9^{th} grade	13 – 15 years
5	7	17.9	7^{th} grade	12 – 13 years
6	7	17.9	5^{th} – 6^{th} grade	10 – 12 years
Total	39	100		

Source: ***Field data, 2020***

It can be seen from the above table that 1 passage is readable for college level students who should be aged between 18 and 22 years. Nine (9) passages are readable for 10th – 12th grade level students who should be in SHS and aged between 15 and 18 years. 15 passages are readable for 8th – 9th grade level students who should be in JHS 2 and JHS 3 and aged between 13 and 15 years. Last but not least, total of 7 passages are respectively readable for 7th grade level (JHS1) and 5th – 6th grade level (Primary 5 and Primary 6) with expected age groups of 12 – 13 years and 10 – 12 years. Overall, only 9 passages (representing 23.1 percent) out of the 39 passages are suitable for SHS while majority of the passages (representing 38.5 percent) are appropriate for JHS 2 and JHS 3 students. Table 4.6 shows the ARI readability result for Book 1.

Table 4. 6: ARL Readability Results for Book 1.

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	4	10.3	College level	18 – 22 years
3	4	10.3	10th – 12th grade	15 – 18 years
4	10	25.6	8th – 9th grade	13 – 15 years
5	5	12.8	7th grade	12 – 13 years
6	9	23.1	5th – 6th grade	10 – 12 years
7	7	17.9	4th – 5th grade	9 – 11 years
Total	39	100		

Source: ***Field data, 2020***

From table 4.6 above, 4 out of the 39 passages are respectively readable for college level students with age appropriateness of 18 – 22 years, and 10th – 12th grade level (SHS students) with age appropriateness of 15 – 18 years. 10 out of the 39 passages are readable for 8th – 9th grade level (JHS 2 and JHS 3) with corresponding age of 13 – 15 years. 5 out of the 39 passages are readable for 7th grade level (JHS 1) with age appropriateness of 12 – 13 years. Nine (9) out of the 39 passages are readable for those at 5th – 6th grade level (Primary 5 and Primary 6) with age suitability of 10 – 12 years. 7 out of the 39 passages are also readable for 4th – 5th grade level (Primary 4 to Primary 5) with age suitability of 9 – 11

years. Thus, majority of the passages (representing 25.6 percent) are readable for 8th – 9th grade level with only 4 passages (representing 10.3 percent) meeting the readability standard of SHS students. Table 4.7 presents the readability results for Book 1.

Table 4. 7: LWF Readability Results for Book 1.

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
1	1	2.6	Postgraduate level	Above 22 years
2	7	17.9	College level	18 – 22 years
3	10	25.6	10th – 12th grade	15 – 18 years
4	11	28.2	8th – 9th grade	13 – 15 years
5	2	5.1	7th grade	12 – 13 years
6	8	20.5	5th – 6th grade	10 – 12 years
Total	39	100		

Source: ***Field data, 2020***

The results above show that only 1 passage out of the 39 passages is appropriate for postgraduate level students, whose age should be above 22 years. Also, 7 passages are suitable for college level students within the age group of 18 – 22 years. Again, 10 passages are readable for 10th – 12th grade level students (SHS), whose age should be between 15 and 18 years. Further, 11 passages (representing the majority – 33.3 percent) are appropriate for 8th – 9th grade level (JHS 2 and JHS 3) within the age of 13 – 15 years. Additionally, 2 passages are readable for 7th grade level (JHS 1) within the age of 12 – 13 years. Lastly, 8 passages are readable for 5th – 6th grade level students (Primary 5 and Primary 6) with corresponding age appropriateness of 10 – 12 years. It follows that only 10 passages (representing 25.6 percent) out of the 39 passages meet the readability standard of SHS students.

Table 4.8 presents the readability consensus results for Book 1. This test sums up the results of the 7 formulas and reports the consensus readability level for the passages.

Table 4. 8: Readability Consensus Results for Book 1.

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
1	1	2.6	Postgraduate level	Above 22 years
2	5	12.8	College level	18 – 22 years
3	7	17.9	10^{th} – 12^{th} grade	15 – 18 years
4	13	33.3	8^{th} – 9^{th} grade	13 – 15 years
5	9	23.1	7^{th} grade	12 – 13 years
6	4	10.3	5^{th} – 6^{th} grade	10 – 12 years
Total	39	100		

Source: ***Field data, 2020***

The consensus results above depict that 1 passage out of the 39 is readable for postgraduate level students above 22 years; 5 passages are readable for college level students between 18 and 22 years; 7 passages are readable for 10^{th} – 12^{th} grade level students (SHS) within 15 – 18 years; 13 passages are readable for 8^{th} – 9^{th} grade level students (JHS 2 and JHS 3) between 13 and 15 years; 9 passages are readable for 7^{th} grade level students in JHS 1, between 12 – 13 years; and 4 passages are readable for 5^{th} – 6^{th} grade level students in Primary 5 and Primary 6, between 10 – 12 years.

Therefore, only 17.9 percent of the passages meet the standard for SHSs while 33.3 percent (representing the majority) are readable for JHS 2 and JHS 3. Similarly, 15.4 percent of the passages are above the readability level of the SHS students and 66.7 percent are below their readability level. This observation implies that SHS students should not have difficulty comprehending the passages and should equally perform much better.

Descriptive Statistics for Book 1

After assessment of the readability level of the individual passages, the average readability level of the whole Aki-Ola English language textbook (Book 1) was examined using descriptive statistics in SPSS. With the exception of FRE and GFOG, A Likert scale of 1 to 7 was used to code the readability values from the

formula tests. The descriptive statistics analysis reports the mean, standard deviation, skewness and kurtosis based on the various readability formulas' results. The N is the total number of passages observed. The min and max represent the minimum and maximum FRE for the passages. The result of the analysis is displayed in Table 4.9.

Table 4. 9: Descriptive statistics for Book 1

	N	Min	Max	Mean	SD	Skewness	Kurtosis
FRE	39	23.60	86.10	63.81	12.63	-0.879	0.578
GFOG	39	6.90	16.50	11.03	2.59	0.270	-0.600
FKGL	39	1	7	4.21	1.42	0.026	-0.715
CLI	39	3	6	3.92	0.81	0.777	0.567
SMOG	39	2	6	4.26	1.09	0.220	-0.768
ARI	39	2	7	4.82	1.60	-0.216	-0.030
LWF	39	1	6	3.77	1.44	0.261	-0.869
RC	39	1	6	3.92	1.27	-0.260	-0.444
WPS	39	11	38	16.95	4.99	2.043	7.168
CPW	39	4.0	5.1	4.55	0.29	0.399	-0.420

Source: ***Field data, 2020***

Referring to table 4.9, FRE records mean of 63.81 with standard deviation of 12.63, skewness of -0.879 and kurtosis of 0.578. The mean score shows that averagely, the textbook has standard readability level, indicating that the textbook is suitable for students within 13 – 15 years, who should be in JHS 2 and JHS 3. This implies that on the whole, the textbook is below the readability level of SHS students. Hence, the students should be able to comprehend and perform much better. The standard deviation score also indicates that there is fewer variations in the passages relative to the readability results. Meanwhile, the values of the skewness and kurtosis depict that the data is normally distributed for parametric statistical analysis.

The Table 4.9 also presents mean of 11.03 with standard deviation of 2.59, skewness of 0.270 and kurtosis of -0.600 GFOG readability result. The value of the mean indicates that the textbook is nearly appropriate for JHS 2 and JHS 3 students between 13 – 15 years of age. Since the textbook is below the readability level of the SHS students, they should find the passages easy to read and comprehend in order to perform better. The value of the standard deviations shows that there is less spread of the values in the distribution around the mean, demonstrating that the readability level of the individual passages is not too far from each other. The values of the skewness and the kurtosis indicate that the data is normally distributed.

With reference to FKGL readability level, mean of 4.21, standard deviation of 1.42, skewness of 0.026 and kurtosis of -0.715 are recorded. Clearly, the mean score shows that the textbook is readable for 8^{th} – 9^{th} grade level students (JHS 2 and JHS 3). This implies that for SHS students, they should easily read and understand the text. Similarly, the standard deviation score indicates that there are fewer variations in the individual passage's readability. The skewness and kurtosis scores also depict that the data is symmetrical around the mean, implying that the data is normally distributed.

Table 4.9 also presents the average analysis of the CLI readability results. Mean score of 3.92 with standard deviation of 0.81, skewness of 0.777 and kurtosis of 0.567 are recorded. The mean score suggests that on average, the textbook is readable for 8^{th} – 9^{th} grade level students (JHS 2 and JHS 3), who should be aged between 13 and 15 years. It follows that the textbook is rather below the readability level of the SHS students and so they should find it easier to read and comprehend, as well as perform better in a comprehension test. The standard deviation score depicts that there are extremely low variations in the readability results for individual passages. The skewness and kurtosis scores suggest that the results from the individual passages are normally distributed.

In terms of ARI, the table depicts a mean value of 4.82, standard deviation value of 1.60, skewness of -0.216 and kurtosis of -0.030. The value of the mean shows that averagely, the textbook is readable for 7th grade level students (JHS 1), whose age should be between 12 – 13 years. Clearly, ARI results indicate that the textbook is far below the readability level of SHS students. Thus, it is expected that SHS students should read and comprehend the textbook with ease. The value of the standard deviation also illustrates that there is less spread of the values around the mean, indicating the extent of variations in the readability results for the individual passages. At the same time, the values of the skewness and kurtosis confirm the normality of the data for parametric analysis.

The next readability formula, LWF records mean of 3.77, standard deviation of 1.44, skewness of 0.261 and kurtosis of -0.869. The mean result suggests that the textbook is readable for 8th – 9th grade level students (JHS 2 and JHS 3). It further suggests that the textbook should be highly readable for SHS students since it is below their standard. The standard deviation result also means that there is not much difference in the readability results for the individual passages; hence the mean result is a true reflection of the overall readability level of the textbook. Since the skewness and kurtosis are within -1 and +1, the data is normally distributed.

The RC records mean score of 3.92, standard deviation score of 1.27, skewness of -0.260 and kurtosis of -0.444. The mean score implies that among all the 7 readability formulas, the textbook is readable for 8th – 9th grade level students in JHS 2 and JHS 3. Generally, the results imply that the Aki-Ola English language textbook for SHS is below SHS students' readability level. To the advantage of the students, they should be able to read and understand most of the passages in the textbook and pass subsequent comprehension tests on the passages. Similarly, the standard deviation score indicates that there are fewer variations in the readability level of the individual passages, suggesting that the mean score can be reliable. The skewness and kurtosis scores show that the data is normally distributed and therefore can be used for parametric analysis.

Lastly, the word per sentence (WPS) and character per word (CPW) for the passages in the textbook were assessed. From Table 5.9, mean of 16.95 and standard deviation of 4.99 are recorded for WPS. Considering a scale of 11 to 38, the mean score gives the average WPS for the passages in the textbook, and this is quite good. It further implies that averagely, every sentence contains 16.95 words. Meanwhile, the standard deviation score shows that the WPS in the passages are not too different. In terms of the CPW, mean of 4.55 and standard deviation of 0.29 are recorded. While the mean score indicates the average CPW in the passages, the standard deviation score shows that there is not much difference in the CPW among the passages.

4.1.2 Readability Results for Book 2

The second book examined is the *Approacher's Series* or *Global Series English language for SHS*. The results for the individual formulas are presented in the tables below. In all 36 passages were tested. Table 4.10 depicts the readability results using FRE formula.

Table 4. 10: FRE Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	2	5.6	Difficult to read	18 – 22 years
3	9	25.0	Fairly difficult to read	15 – 18 years
4	16	44.4	Standard to read	13 – 15 years
5	8	22.2	Fairly easy to read	12 – 13 years
6	1	2.8	Easy to read	10 – 12 years
Total	36	100		

Source: ***Field data, 2020***

Table 4.10 shows that 2 out of the 36 passages are difficult to read, 9 passages are fairly difficult to read, 16 passages are standard to read, 8 passages are fairly easy to read and 1 passage is easy to read. This implies that majority of the passages have standard readability level based on FRE test. Comparing the FRE scores to age appropriateness in US grade level, it can be concluded that only 9

passages of the 36 passages meet the age appropriateness of SHS students (15 – 18 years). However, most of the passages (representing 44.4 percent) are suitable for JHS 2 and JHS 3 students, who should be aged between 13 and 15 years.

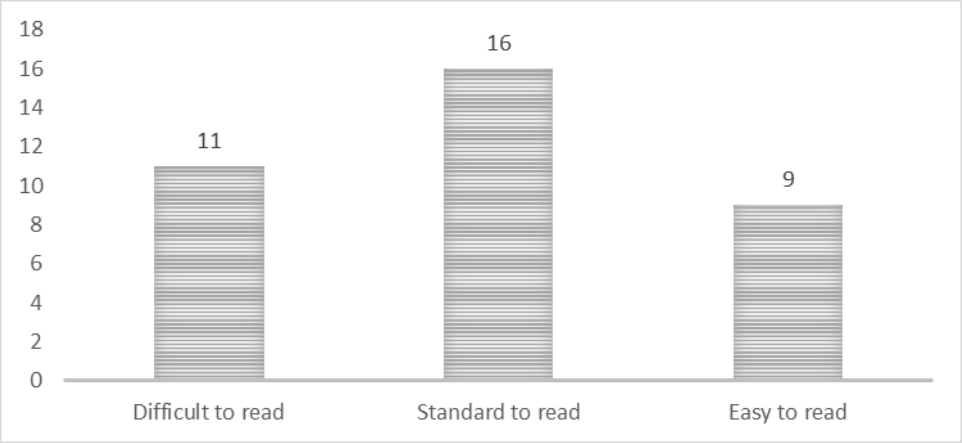


Figure 4. 5: FRE Interpretation

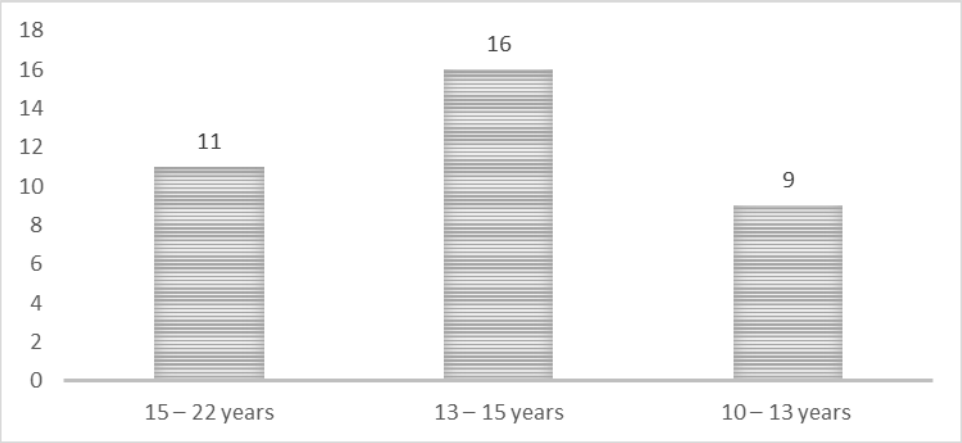


Figure 4. 6: FRE Age appropriateness in US grade level

Table 4.11 presents the readability results using GFOG formula.

Table 4. 11: GFOG Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	25	69.4	Hard to read	18 – 22 years
5	11	30.6	Fairly easy to read	12 – 13 years
Total	36	100		

Source: ***Field data, 2020***

It can be seen in table 4.11 that 25 passages (representing 69.4 percent) are hard to read and 11 passages (representing 30.6) are fairly easy to read. This means that generally, the passages are difficult or hard for the SHS students to read and understand. In terms of the age appropriateness, the results show that most of the passages are readable for college level students, who should age between 18 – 22 years. On the other hand, 30.6 percent of the passages are readable for students within 12 – 13 years, who should be in JHS 1. Thus, according to GFOG readability formula, none of the passages meet the readability standard of SHS students.

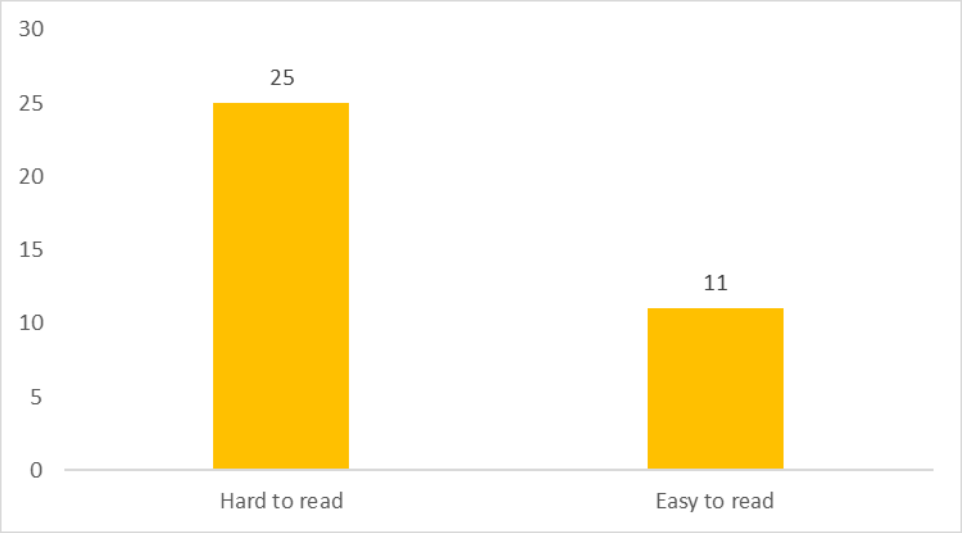


Figure 4. 7: GFOG Interpretation

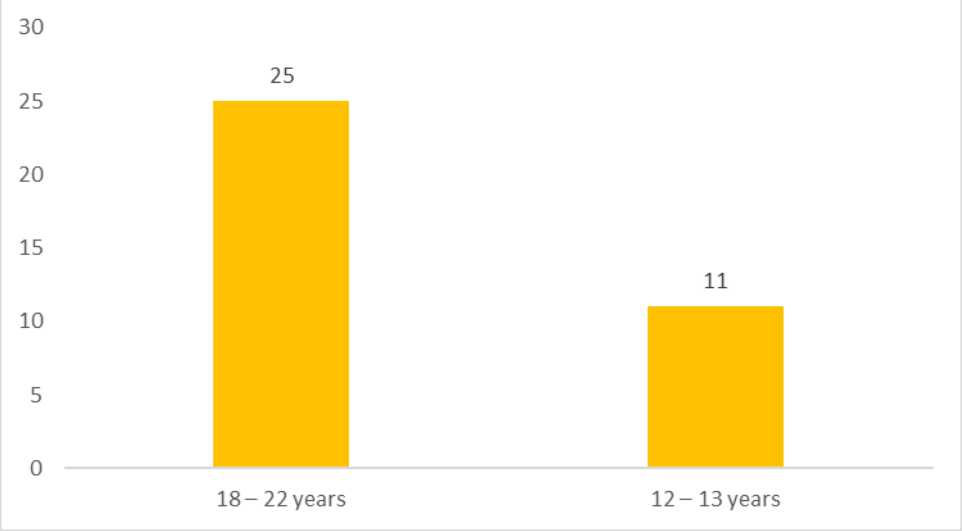


Figure 4. 8: GFOG Age appropriateness in US grade level

Furthermore, Table 4.12 presents the readability results using FKGL formula.

Table 4. 12: FKGL Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	1	2.8	College level	18 – 22 years
3	11	30.6	10^{th} – 12^{th} grade	15 – 18 years
4	16	44.4	8^{th} – 9^{th} grade	13 – 15 years
5	4	11.1	7^{th} grade	12 – 13 years
6	4	11.1	5^{th} – 6^{th} grade	10 – 12 years
Total	36	100		

Source: ***Field data, 2020***

The results in table 4.12 shows that 1 out of 36 passages (representing 2.8 percent) are readable for college level students, who should be aged between 18 and 22 years. 11 passages (representing 30.6 percent) are readable for 10^{th} – 12^{th} grade level students (SHS), who should be within 15 – 18 years. 16 passages (representing 44.4 percent) are readable for 8^{th} – 9^{th} grade level students (JHS 2 and JHS 3) within 13 – 15 years. 4 passages (representing 11.1 percent) are respectively readable for 7^{th} grade level students (JHS 1) and 5^{th} – 6^{th} grade level students (Primary 5 and Primary 6). In summary, only 30.6 percent of the total passages meet the readability level of SHS students while 44.4 percent (being the highest) are rather for JHS 2 and JHS 3 students. It follows that the passages in the textbook are generally below the standard of SHS students and so they should be able to read and comprehend. Students may perform abysmally in the face of standardized exams since the texts are below their standard.

Table 4.13 reports the readability results for individual passages using CLI formula.

Table 4. 13: CLI Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	3	8.3	College level	18 – 22 years
3	9	25.0	10^{th} – 12^{th} grade	15 – 18 years
4	17	47.2	8^{th} – 9^{th} grade	13 – 15 years
5	6	16.7	7^{th} grade	12 – 13 years
6	1	2.8	5^{th} – 6^{th} grade	10 – 12 years
Total	36	100		

Source: ***Field data, 2020***

Table 4.13 shows that 3 passages (representing 8.3 percent) are readable for college level students; 9 passages (representing 25 percent) are readable for 10^{th} – 12^{th} grade level, that is SHS students; 17 passages (representing 47.2 percent) are readable for 8^{th} – 9^{th} grade level students, that is JHS 2 and JHS 3; 5 passages (representing 16.7 percent) are readable for 7^{th} grade level students in JHS 1; and 1 passage (representing 2.8) is suitable for 5^{th} – 6^{th} grade level, that is Primary 5 and 6 students. It implies that only 9 out of the 36 passages actually meet the readability standard of the SHS students with majority (i17 passages) being readable to JHS 2 and JHS 3 students. Comparing the readability levels with age appropriateness in US grade level, it can be observed that 3 passages are above the readability age level of the SHS students while 24 passages are below the readability age level of the SHS students, with only 9 passages meeting the readability standard age level of the SHS students (15 15 – 18 years). It is an indication that the SHS students should easily read and comprehend most of the passages.

The SMOG readability results are presented in Table 4.14 below.

Table 4. 14: SMOG Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	11	30.6	10^{th} – 12^{th} grade	15 – 18 years
4	16	44.4	8^{th} – 9^{th} grade	13 – 15 years
5	5	13.9	7^{th} grade	12 – 13 years
6	4	11.1	5^{th} – 6^{th} grade	10 – 12 years
Total	36	100		

Source: ***Field data, 2020***

Table 4.14 shows that 30.6 percent of the total passages (representing 11 passages) are readable for 10^{th} – 12^{th} grade level (SHS students); 44.4 percent of the total passages (representing 16 passages) are readable for 8^{th} – 9^{th} grade level students, (JHS 2 and JHS 3), who should be aged between 13 – 15 years. 13.9 percent of the total passages (representing 5 passages) are readable for 7^{th} grade level students in JHS 1, between 12 and 13 years. 11.1 percent of the total passages (representing 4 passages) are readable for 5^{th} – 6^{th} grade level (iprimary 5 and 6 students). It means that majority of the passages are below the readability standard of SHS students. Thus, the passages should be much readable and understandable to SHS students.

Table 4.15 shows the ARI readability results.

Table 4. 15: ARI Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	2	5.6	College level	18 – 22 years
3	5	13.9	10^{th} – 12^{th} grade	15 – 18 years
4	15	41.7	8^{th} – 9^{th} grade	13 – 15 years
5	6	16.7	7^{th} grade	12 – 13 years
6	5	13.9	5^{th} – 6^{th} grade	10 – 12 years
7	3	8.3	4^{th} – 5^{th} grade	9 – 11 years
Total	36	100		

Source: ***Field data, 2020***

From table 4.15, 2 passages (representing 5.6 percent) are readable for college level students, who should be within 18 – 22 years. Also, 5 passages (representing 13.9 percent) are readable for 10th – 12th grade level, which are SHS students between 15 and 18 years. Fifteen (15) passages (representing 41.7 percent) are readable for 8th – 9th grade level students in JHS 2 and JHS 3, between the ages of 13 – 15 years.

Furthermore, 6 passages (representing 16.7 percent) are readable for 7th grade level students in JHS 1, between 12 and 13 years. Five (5) passages (representing 13.9 percent) are readable for 5th – 6th grade level students in Primary 5 and 6, who should be within 10 – 12 years. Lastly, 3 passages (representing 8.3 percent) are readable for 4th – 5th grade level students in Primary 4 and 5, and are aged between 9 and 11 years. It follows that most of the passages are below SHS level with only 2 passages of the 36 passages that are above SHS level. Therefore, it is expected SHS students should not find it difficult to read the passages and understand. The LWF readability results are also shown in Table 4.16.

Table 4. 16: LWF Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
1	2	5.6	Postgraduate level	Above 22 years
2	3	8.3	College level	18 – 22 years
3	13	36.1	10th – 12th grade	15 – 18 years
4	14	38.9	8th – 9th grade	13 – 15 years
5	2	5.6	7th grade	12 – 13 years
6	2	5.6	5th – 6th grade	10 – 12 years
Total	36	100		

Source: ***Field data, 2020***

From table 4.16, it can be seen that 2 passages and 3 passages are readable for postgraduate level students and college level students respectively. Thirteen (13) passages are readable for 10th – 12th grade level students in SHS. 14 passages

are also readable for 8th – 9th grade level students in JHS 2 and JHS 3. In addition, 2 passages each are readable for 7th grade level students in JHS 1 and 5th – 6th grade level in Primary 5 and Primary 6.

Overall, it can be noticed that only 13 passages meet the readability standard of students in SHS with a corresponding age appropriateness of 15 – 18 years, while 14 passages (being the highest) are readable for JHS 2 and JHS 3 students within 13 – 15 years. It is important to note that only 5 out of the 36 passages are above the readability level of SHS students. Therefore, ideally SHS students should not encounter readability challenges with the passages. Lastly, Table 4.17 displays the RC readability results.

Table 4. 17: RC Readability Results for Book 2

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	4	11.1	College level	18 – 22 years
3	7	19.4	10th – 12th grade	15 – 18 years
4	16	44.4	8th – 9th grade	13 – 15 years
5	8	22.2	7th grade	12 – 13 years
6	1	2.8	5th – 6th grade	10 – 12 years
Total	36	100		

Source: ***Field data, 2020***

The consensus results above, indicate that 4 out of the 36 passages (representing 11.1 percent) are readable for college level students, who should be aged between 18 and 22 years. Also, 7 passages (representing 19.4 percent) are readable 10th – 12th grade level students in SHS within 15 – 18 years. Further, 16 passages (representing 44.4 percent) are readable for 8th – 9th grade level students in JHS 2 and JHS 3, who should fall within 13 – 15 years. Additionally, 8 passages (representing 22.2 percent) are readable for 7th grade level students in JHS 1, between 12 and 13 years. Lastly, 1 passage (representing 2.8 percent) is readable for 5th – 6th grade level students in Primary 5 and Primary 6, whose ages should fall within 10 – 12 years.

It follows that among all the formulas, only 19.4 percent of the total passages meet the readability level of SHS students whereas 44.4 percent of the passages are rather readable for JHS 2 and JHS 3. It is imperative to note that only 11.1 percent of the total passages are above the readability level of SHS students. Hence, it is expected SHS students would read majority of the passages with ease and clearly comprehend.

Descriptive Statistics for Book 2

Just as it was done for Book 1, the average readability of Book 2 was also assessed using descriptive statistics, where the mean, standard deviation, skewness and kurtosis are reported. Table 4.18 below exhibits the descriptive statistics for Global/ Approacher's *Series English Language (Book 2*).

Table 4. 18: Descriptive statistics for Book 2

	N	Min	Max	Mean	SD	Skewness	Kurtosis
FRE	36	31.90	83.80	62.96	10.70	-0.569	0.925
GFOG	36	7.10	15.20	11.66	2.17	-0.163	-0.753
FKGL	36	2	6	3.97	1.00	0.603	0.022
CLI	36	2	6	3.81	0.92	-0.056	0.088
SMOG	36	3	6	4.06	0.96	0.719	-0.218
ARI	36	2	7	4.44	1.29	0.337	-0.261
LWF	36	1	6	3.47	1.11	0.007	0.844
RC	36	2	6	3.86	0.99	-0.268	-0.231
WPS	36	10	30	17.44	3.95	0.984	2.199
CPW	36	4.0	5.5	4.594	0.32	1.038	1.421

Source: ***Field data, 2020***

From the table 4.18, a mean of 62.96 with standard deviation of 10.70, skewness of -0.569 and kurtosis of 0.925 is recorded for FRE readability results. The mean score implies that on average, the textbook is standard to read, which is suitable for JHS 2 and JHS 3 students within the ages of 13 – 15 years. It follows that SHS students should rather find it easier to read and understand most of the passages in the textbook. At the same time, the standard deviation score shows that there is

very low spread in the readability results of the individual passages, giving credence to the mean score. Applying the adopted criteria, it can be concluded that the data is normally distributed based on the skewness and kurtosis scores. Also, GFOG readability results records mean of 11.66, standard deviation of 2.17, skewness of -0.163 and kurtosis of -0.753. The mean value suggests that the textbook is nearly fairly hard or difficult to read. Thus, the textbook should readable for SHS students, even though the results on individual passages revealed that none of the passages are readable for SHS students. The standard deviation value shows that there are fewer variations in the individual passage readability results. The skewness and kurtosis values depict that the data is normally distributed.

Additionally, a mean of 3.97 with standard deviation of 1.00, skewness of 0.603 and kurtosis of 0.022 is recorded for FKGL readability results. Based on the mean score, the FKGL results imply that the textbook is generally readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3. This means that SHS students should easily read and clearly understand the textbook, since majority of the passages in the textbook are actually below their readability level. The standard deviation depicts that there are fewer variations in the readability results of the individual passages in the textbook. Meanwhile, the skewness and kurtosis scores indicate that the values are symmetrical around the mean and so the data is normally distributed. More so the table depicts mean of 3.81, standard deviation of 0.92, skewness of -0.056 and 0.088 for CLI readability results. Approximately, the mean score indicates that the textbook is readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3. Here again, most of the passages in the textbook should be much readable for SHS students. The standard deviation score indicates that there are fewer variations in the results for the passages. The skewness and kurtosis also indicate that the data is normally distributed.

Furthermore, SMOG readability results record mean of 4.06, standard deviation of 0.96, skewness of 0.719 and kurtosis -0.218. The value of the mean clearly shows that the textbook is readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3, who should age between 12 – 13 years. Thus, SHS students should easily read and comprehend majority of the passages in the textbook, since generally the

readability level of the textbook is below the standard of SHS students. The value of the standard deviation shows that there is less spread in the readability results of the individual passages in the textbook. The values of the skewness and kurtosis clearly show that the passages are normally distributed.

Adding on, ARI readability results record a mean of 4.44 with standard deviation of 1.29, skewness of 0.337 and kurtosis of -0.261. The mean score lies between point 4 and 5 but could not be approximated to point 5 because 4.44 is below 4.5. However, it implies that on average, the textbook is readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3. Hence, for SHS students who use this textbook, they should easily read and understand the passages and pass comprehension tests. The standard deviation score indicates that there are quite fewer variations in the readability results among the individual passages. The skewness and kurtosis are within -1 and +1, therefore the passages are symmetrical around the mean, confirming the normality of the data.

Referring to LWF readability results, mean of 3.47, standard deviation of 1.11, skewness of 0.007 and kurtosis of 0.844, are recorded. The mean score suggests that the textbook is readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3; although it can also be interpreted to mean that generally the textbook is readable for 10^{th} – 12^{th} grade level students in SHS. However, it is important to note that SHS students should not find it difficult to read and comprehend most to the passages in the textbook. The standard deviation score points out that there is no much difference in the readability results for the individual passages. Meanwhile, the skewness and kurtosis scores depict that the data is normally distributed.

The RC results report mean of 3.86, standard deviation of 0.99, skewness of 0.-0.268 and kurtosis of -0.231. Here, the mean score implies that on a whole, the textbook is readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3. It further implies that the textbook is generally below the readability level of SHS students. Therefore, it is expected that using this textbook, SHS students should easily read and understand the passages and pass subsequent comprehension tests. Similarly, the standard deviation score illustrates that there is relatively low spread in the readability results for the individual passages. The scores for

skewness and kurtosis also suggest that the data is normally distributed for parametric analysis.

In addition to the readability results, word per sentence (WPS) and character per word (CPW) are also presented in the Table 4.18. From the table, it can be observed that mean of 17.44 is recorded together with standard deviation of 3.95. Considering the minimum scale of 10 and maximum scale of 30, the mean score shows that 17.44 is the average word per sentence of the various passages in this textbook.

The standard deviation score shows the extent to which WPS of the individual passages differ from one another. Since the standard deviation score is low, it can be concluded that there is very low spread of the values in the distribution around the mean. In terms of the CPW, mean of 4.59 is recorded, indicating the average character per sentence of the various passages in this textbook. Similarly, standard deviation of 0.32 is recorded, illustrating that there is not much spread of the values in the distribution around the mean.

4.1.3 Readability Results for Book 3

The third textbook examined is *Comprehension Core English language (Book 3).* The results of the 7 readability formulas employed are presented in the subsequent tables and paragraphs. A total of 6 passages were assessed and results for the various formulas are reported as follows.

Table 4.19 presents FRE readability result for Book 3.

Table 4. 19: FRE Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	1	16.7	Fairly difficult to read	15 – 18 years
4	1	16.7	Standard to read	13 – 15 years
5	4	66.7	Fairly easy to read	12 – 13 years
Total	6	100		

Source: ***Field data, 2020***

It shows that 16.7 percent of the total 6 passages (representing 1 passage) are fairly difficult to read and also standard to read. Lastly, 66.7 percent (representing 4 passages) are fairly easy to read. It follows that more than half of the passages are readable for students between 12 and 13 years, who should be in JHS 1. It also means that only 1 passage meets the readability standard of SHS students while the rest are below SHS level.

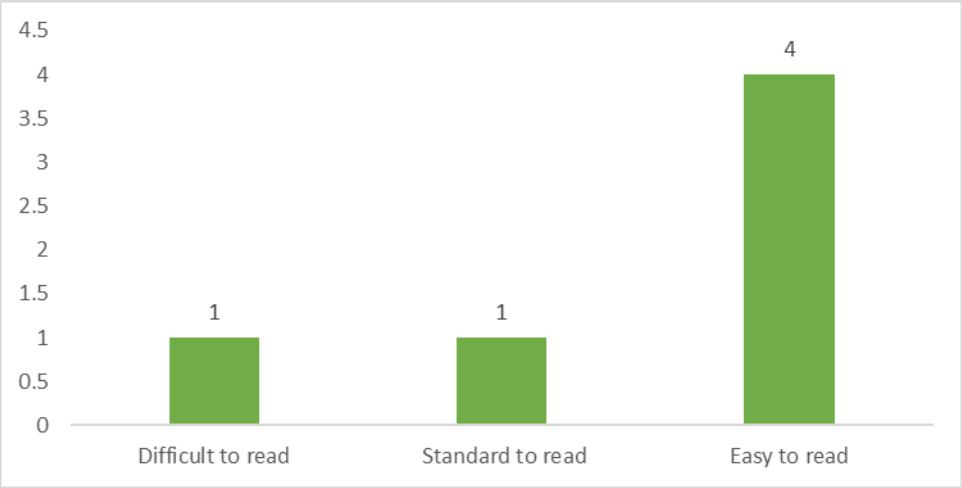


Figure 4. 9: FRE Interpretation

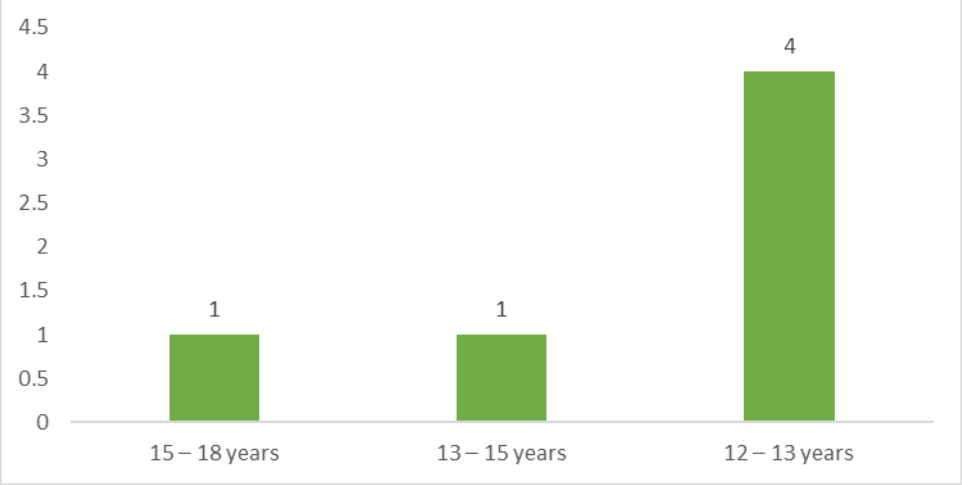


Figure 4. 10: FRE Age appropriateness in US grade level

Table 4.20 also depicts GFOG readability results for the passages.

Table 4. 20: GFOG Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	2	33.3	Difficult to read	18 – 22 years
5	4	66.7	Fairly easy to read	12 – 13 years
Total	6	100		

Source: ***Field data, 2020***

Table 4.20 shows that 2 passages are difficult to read, whereas 4 passages are fairly easy to read. Although none of the passages meets the readability level for SHS students, only 2 out of the 6 passages are above the readability level of SHS students while 4 passages are readable for JHS 1 students, who should fall within 12 – 13 years.

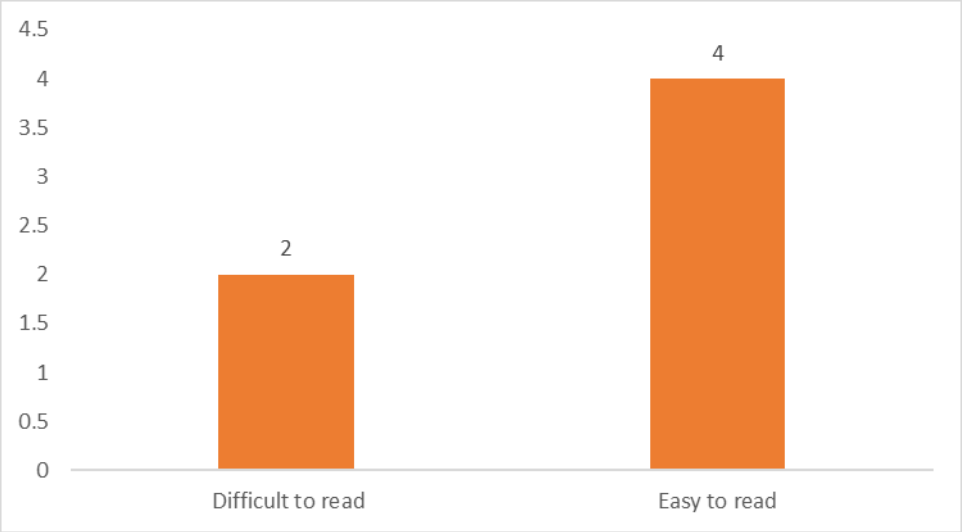


Figure 4. 11: GFOG Interpretation

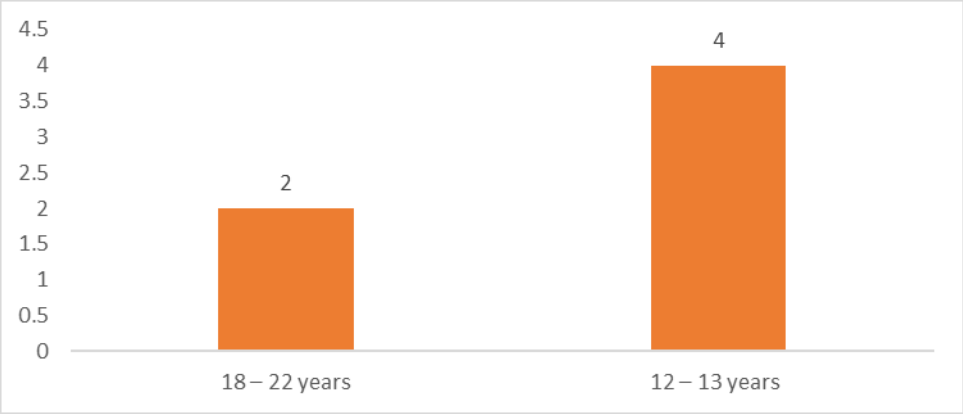


Figure 4. 12: GFOG Age appropriateness in US grade level

Table 4.21 presents FKGL readability results for the passages.

Table 4. 21: FKGL Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	2	33.3	10^{th} – 12^{th} grade	15 – 18 years
5	2	33.3	7^{th} grade	12 – 13 years
6	2	33.3	5^{th} – 6^{th} grade	10 – 12 years
Total	6	100		

Source: ***Field data, 2020***

With reference to table 4.21 above, it can be seen that 2 passages each are readable for 10^{th} – 12^{th} grade level students in SHS (between 13 and 15 years), 7^{th} grade level students in JHS 1 (within 12 – 13 years), and 5^{th} – 6^{th} grade level students in Primary 5 and Primary 6 (between 10 and 12 years). It means that passages are readable SHS students as well as students below SHS level. Therefore, SHS students should easily read and understand the passages.

Table 4.22 reports the readability results for the passages using CLI formula.

Table 4. 22: CLI Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	1	16.7	10^{th} – 12^{th} grade	15 – 18 years
4	4	66.7	8^{th} – 9^{th} grade	13 – 15 years
5	1	16.7	7^{th} grade	12 – 13 years
Total	6	100		

Source: ***Field data, 2020***

Table 4.22 shows that 1 passage is readable for 10^{th} – 12^{th} grade level students in SHS, 4 passages are readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3, and 1 passage is readable for 7^{th} grade level students in JHS 1. It follows that only 1 passage is suitable to SHS students between 15 – 18 years, while the rest are readable for students in JHS 1 to JHS 3, who should be within 12 – 15 years.

Thus, for SHS students, they should not encounter difficulties in reading and understanding the passages.

Table 4.23 displays the readability results for the passages using SMOG formula.

Table 4. 23: SMOG Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	1	16.7	10^{th} – 12^{th} grade	15 – 18 years
4	1	16.7	8^{th} – 9^{th} grade	13 – 15 years
5	2	33.3	7^{th} grade	12 – 13 years
6	2	33.3	5^{th} – 6^{th} grade	10 – 12 years
Total	6	100		

Source: ***Field data, 2020***

Table 4.23 indicates that 1 passage is respectively readable for 10^{th} – 12^{th} grade level students in SHS and 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3. However, 2 passages are respectively readable for 7^{th} grade level students in JHS 1 and 5^{th} – 6^{th} grade level students in Primary 5 and Primary 6. Here again, only 1 passage meets the readability standard of SHS students, who should age between 15 – 18 years while the rest are readable for students in JHS 1 – 3 and Primary 5 – 6. It is expected that the SHS students should read and understand the passages with ease.

Table 4.24 shows ARI readability results for the passages.

Table 4. 24: ARI Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	2	33.3	10^{th} – 12^{th} grade	15 – 18 years
5	1	16.7	7^{th} grade	12 – 13 years
6	2	33.3	5^{th} – 6^{th} grade	10 – 12 years
7	1	16.7	4^{th} – 5^{th} grade	9 – 11 years
Total	6	100		

Source: ***Field data, 2020***

Referring to table 4.24, 2 passages are readable for 10th – 12th grade level students in SHS; 1 passage is readable for 7th grade level students in JHS 1; 2 passages are also readable for 5th – 6th grade level students in Primary 5 and Primary 6; and 1 passage is readable for 4th – 5th grade level students in Primary 4 and Primary 5. It means that except the 2 passages which meet the readability standard of SHS students, the 4 remaining passages are actually below the readability level of the SHS students. Hence, the passages should be very easy for SHS student to read and understand.

Table 4.25 presents the readability results for the passages using LWF formula.

Table 4. 25: LWF Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	1	16.7	College level	18 – 22 years
3	1	16.7	10th – 12th grade	15 – 18 years
4	3	50.0	8th – 9th grade	13 – 15 years
6	1	16.7	5th – 6th grade	10 – 12 years
Total	6	100		

Source: ***Field data, 2020***

Table 4.25 illustrates that 1 passage is readable for college level students, who should age between 18 and 22 years. Also, 1 passage is readable for 10th – 12th grade level students in SHS, who should fall within 15 – 18 years. Again, 3 passages are readable for 8th – 9th grade level students in JHS 2 and JHS 3, who should be aged between 13 and 15 years. Lastly, 1 passage is readable for 5th – 6th grade level students in Primary 5 – 6 between the ages of 10 and 12 years. Thus, only 1 out of the 6 passages is above the readability level of SHS students, indicating that SHS students should be able to read and understand the remaining 5 passages.

Table 4.26 depicts the readability consensus results for the 7 formulas.

Table 4. 26: RC Readability Results for Book 3

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	1	16.7	10^{th} – 12^{th} grade	15 – 18 years
4	1	16.7	8^{th} – 9^{th} grade	13 – 15 years
5	4	66.7	7^{th} grade	12 – 13 years
Total	6	100		

Source: ***Field data, 2020***

From table 4.26, it can be seen that 1 passage is readable for 10^{th} – 12^{th} grade level students in SHS between 15 and 18 years. 1 passage is also readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3 between 13 and 15 years. Lastly, 4 passages are readable for 7^{th} grade level students in JHS 1 between 12 and 13 years. It implies that on a consensus, none of the passages are above the readability level of SHS students, rather 5 out of the 6 passages are actually below the readability level of SHS students. Hence, SHS students should easily read and pass comprehension tests on the passages.

Descriptive Statistics for Book 3

The average readability level is further determined for Book 3 by estimating the descriptive statistics (mean, standard deviation, skewness, and kurtosis). This analysis is used to assess the overall readability of the textbook for SHS students. The descriptive statistics result is shown in Table 4.27 below.

Table 4. 27: Descriptive statistics for Book 3

	N	Min	Max	Mean	SD	Skewness	Kurtosis
FRE	6	53	77.9	68.92	9.17	-1.225	1.013
GFOG	6	8.5	12.9	10.28	1.89	0.752	-1.705
FKGL	6	3	6	4.67	1.37	-0.523	-0.875
CLI	6	3	5	4.00	0.63	0.000	0.500
SMOG	6	3	6	4.83	1.17	-0.668	-0.446
ARI	6	3	7	5.00	1.67	-0.384	-0.786
LWF	6	2	6	3.83	1.33	0.440	0.335
RC	6	3	5	4.50	0.84	-0.537	0.429
WPS	6	12	21	16.17	3.19	0.329	-0.271
CPW	6	4.2	5.0	4.500	0.30	0.968	-0.014

Source: ***Field data, 2020***

Table 4.27 records FRE mean of 68.92, standard deviation of 9.17, skewness of -1.225 and kurtosis of 0.752. The mean score depicts that averagely the textbook is standard to read and is suitable for students within 13 – 15 years. It implies that the textbook is far below the readability standard of SHS students (15 – 18 years), indicating that it should be very easy for SHS students to read and comprehend passages in the textbook. The standard deviation score also implies that there are extremely low variations in the readability results for the individual passages. The skewness and kurtosis scores show that the data is normally distributed.

Secondly, GFOG readability results record mean of 10.28, standard deviation of 1.89, skewness of -0.968 and kurtosis of -0.875. The value of the mean suggests that the textbook is generally standard to read, meaning that students within the age limit of 13 – 15 years can read and understand. Since this age limit is below that of SHS students (which is 15 – 18 years), it can be concluded that the textbook would be extremely readable for SHS students. The value of the standard deviation shows that there is less spread of the readability results of the individual passages from one another. The values of the skewness and kurtosis

indicate that the results are symmetrical around the mean, hence they are normally distributed.

Furthermore, 4.67 mean, 1.37 standard deviation, -0.523 skewness and -0.875 kurtosis are recorded for FKGL readability results. The mean score shows that the textbook is readable for 7th grade level. In comparison with the US grade level, the textbook should suitable for 12 – 13 years students in JHS 1. Clearly, the textbook is below the readability level of SHS students, who should be within 15 – 18 years. It follows that the textbook would be easily read and understood by SHS students. The standard deviation score implies the there are fewer variations in the readability results for the individual passages. The skewness and kurtosis show that the data is normally distributed.

Moreover, CLI readability results record mean of 4.00, standard deviation of 0.63, skewness of 0.000 and kurtosis of 0.500. While the standard deviation score indicates extremely low difference in the readability results for the individual passages, the mean score indicates that the textbook is generally readable for 8th – 9th grade level students in JHS 2 and JH3. Therefore, SHS students should read the textbook with ease and clearly understand. Here again, the skewness and kurtosis scores confirm the normality of the data.

The SMOG readability results record mean score of 4.83 together with standard deviation of 1.17, skewness of -0.668 and kurtosis of -0.446. The mean score depicts that the textbook is averagely readable for 7th grade level students in JHS 1. It follows, therefore, that SHS students would easily read the passages in the textbook and understand since they are below their readability standard. At the same time, the standard deviation score proves that there is not much difference in the readability results for the individual passages. Meanwhile, the skewness and kurtosis prove that the data is normally distributed for parametric tests.

Further, using ARI formula, mean of 5.00, standard deviation of 1.67, skewness of -0.384 and kurtosis of -0.786 are recorded. Clearly, the mean value suggests that the passages in the textbook are readable for 7th grade level students in JHS 1. This implies that the passages textbook is below the readability level of SHS

students, and so it is expected that they easily read and comprehend. The value of the standard deviation indicates that there are fewer variations in the results for the individual passages. The values of the skewness and kurtosis show that the data is normally distributed since the values fall within +1 and -1.

In addition, LWF readability results record mean of 3.83, standard deviation of 1.33, skewness of 0.440 and kurtosis of 0.335. Approximately, the mean score indicates that on a whole, the textbook is suitable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3, who should age between 13 – 15 years. It follows that generally the passages in the textbook are readable for JHS students; therefore, SHS students should rather find it easier to read the passages and understand. The standard deviation score supports the mean score by revealing that there are fewer differences in the readability results for the individual passages. The skewness and kurtosis scores also prove that the data is normally distributed.

To conclude, the readability consensus results record mean of 4.5, standard deviation of 0.84, skewness of -0.537, and kurtosis of 0.429. The value of the mean depicts that among the 7 formulas, the passages in textbook are approximately readable for 7^{th} grade level students in JHS 1. This means that for SHS students, they should be able to read and comprehend the passages in the textbook with ease. Similarly, the value of the standard deviation shows that there is not much difference in the readability results for the individual passages. At the same time, the skewness and kurtosis values confirm that the data is normally distributed for parametric analysis.

Finally, the word per sentence (WPS) and character per word (CPW) of the passages in the textbook were assessed. From Table 4.27, it can be seen that mean of 16.17 and standard deviation of 3.19 are recorded for WPS. This implies that on the average WPS for the textbook is 16.17, which is good considering the scale of 12 to 21. Likewise, mean score of 4.50 and standard deviation of 0.30 are record for CPW. The mean score indicates the average character per sentence of the various passages in this textbook, whereas the standard deviation score indicates that there is not much spread of the values in the distribution around the mean.

4.1.4 Readability Results for Book 4

The fourth book assessed is the *High Standard English Language for SHS*. As usual, the 7 formulas employed to test the readability level and age appropriateness in US grade level. In all, 10 passages were selected from this textbook. The readability results on the individual passages are presented in the following tables.

Table 4.28 shows the FRE readability results for Book 4.

Table 4. 28: FRE Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	4	40.0	Fairly difficult to read	15 – 18 years
4	3	30.0	Standard to read	13 – 15 years
5	1	10.0	Fairly easy to read	12 – 13 years
6	1	10.0	Easy to read	10 – 12 years
7	1	10.0	Very easy to read	9 – 11 years
Total	10	100		

Source: ***Field data, 2020***

Table 4.28 shows that 4 out of the 10 passages are fairly difficult to read, 3 passages are standard to read, 1 passage each are fairly easy to read, easy to read, and very easy to read. Comparing with the age appropriateness in US grade level, 40 percent of the passages are readable for SHS students within 15 – 18 years while 30 percent is readable for JHS students within 13 – 15 years. The rest are readable for student within 9 – 12 years at Primary level. It means that none of the passages is above the readability level of SHS students. Therefore, it is expected that SHS students would read and understand the various passages.

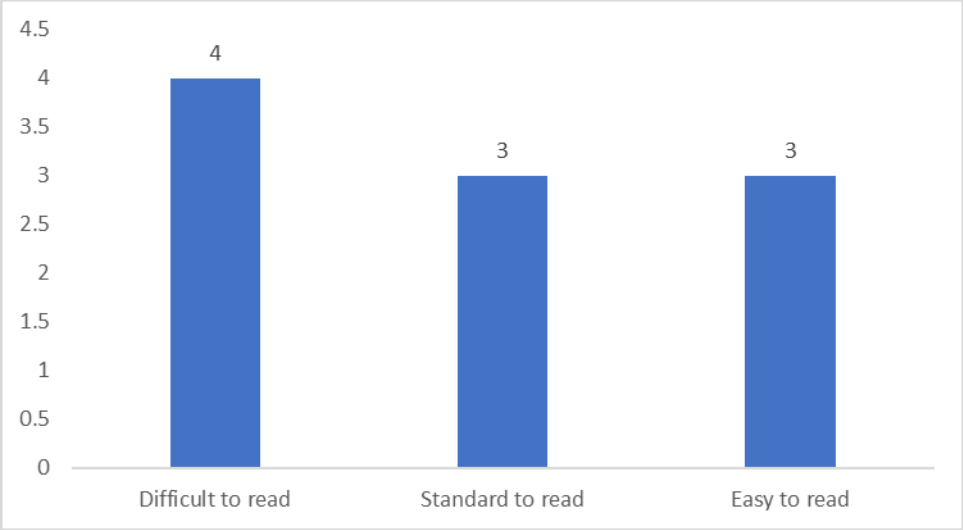


Figure 4. 13: FRE Interpretation

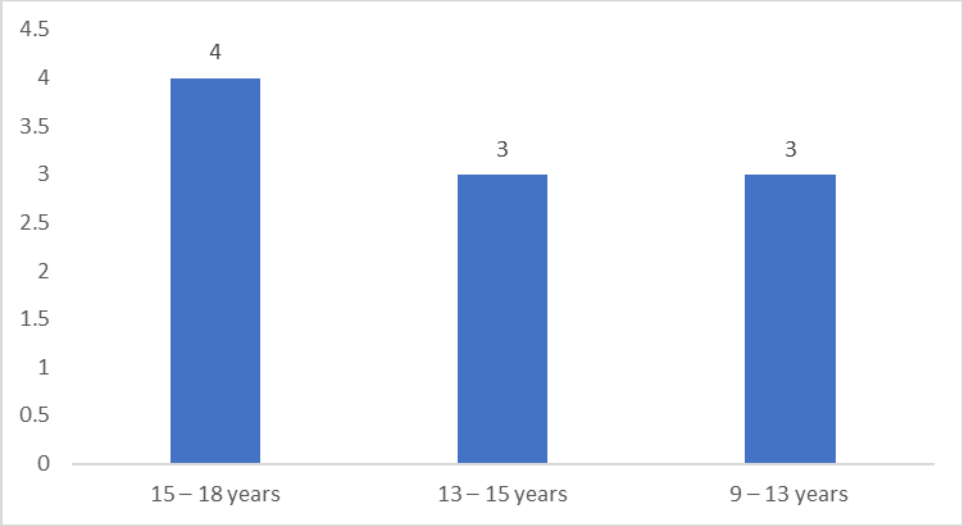


Figure 4. 14: FRE Age appropriateness in US grade level

Table 4.29 shows the GFOG readability results for Book 4.

Table 4. 29: GFOG Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	7	70.0	Hard to read	18 – 22 years
5	2	20.0	Fairly easy to read	12 – 13 years
6	1	10.0	Easy to read	10 – 12 years
Total	10	100		

Source: ***Field data, 2020***

Table 4.29 indicates that 7 out of the 10 passages are hard to read, 2 passages are fairly easy to read, and 1 passage easy to read. In terms of age appropriateness in US grade level, 70 percent of the passages are readable for college level students within 18 – 22 years; 20 percent is readable for students within 12 – 13 years in JHS 1; and 10 percent is readable for students with 10 – 12 years in Primary 5 – 6. It implies that none of the passages meets the readability level of SHS students. Since majority of the passages are suitable for college level students, SHS students are likely to find it difficult to read and understand most of them.

Figure 4. 15: GFOG Interpretation

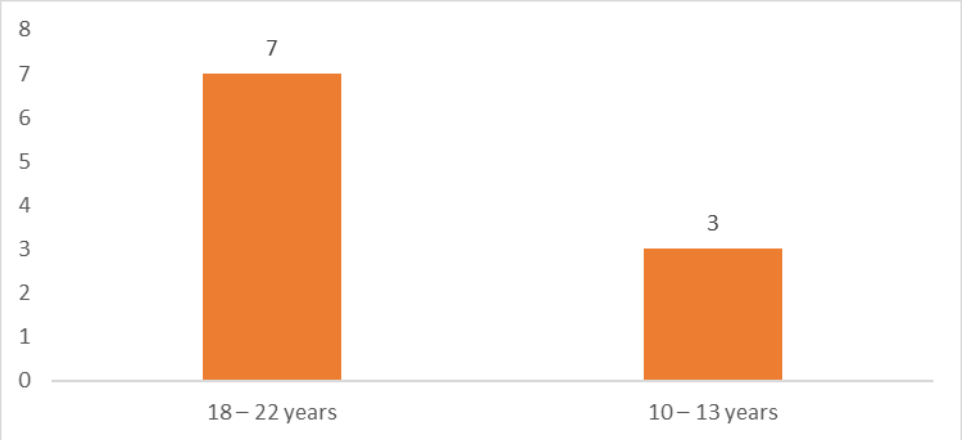


Figure 4. 16: GFOG Age appropriateness in US grade level

Table 4.30 presents FKGL readability results for Book 4.

Table 4. 30: FKGL Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	4	40.0	10^{th} – 12^{th} grade	15 – 18 years
4	2	20.0	8^{th} – 9^{th} grade	13 – 15 years
5	2	20.0	7^{th} grade	12 – 13 years
6	1	10.0	5^{th} – 6^{th} grade	10 – 12 years
7	1	10.0	4^{th} – 5^{th} grade	9 – 11 years
Total	10	100		

Source: ***Field data, 2020***

It can be observed from table 4.30 that 4 out of the 10 passages are readable for 10^{th} – 12^{th} grade level students in SHS, who aged between 15 and 18 years. Again, 2 passages are readable for 8^{th} – 9^{th} grade level students in JHS 2 and JHS 3, who aged between 13 and 15 years. Similarly, 2 passages are readable for 7^{th} grade level students in JHS 1 within 12 – 13 years. Additionally, 1 passage is readable for 5^{th} – 6^{th} grade level students in Primary 5 – 6, and lastly 1 passage is readable for 4^{th} – 5^{th} grade level students in Primary 4 – 5. It follows that majority of the passages (representing 40 percent) fall within the readability level of SHS students, and the rest are below the readability standard of SHS students. This implies that the passages are generally readable for SHS students.

Table 4.31 reports CLI readability results for Book 4.

Table 4. 31: CLI Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	4	40.0	10^{th} – 12^{th} grade	15 – 18 years
4	4	40.0	8^{th} – 9^{th} grade	13 – 15 years
5	1	10.0	7^{th} grade	12 – 13 years
6	1	10.0	5^{th} – 6^{th} grade	10 – 12 years
Total	10	100		

Source: ***Field data, 2020***

Table 4.31 above shows that 4 passages are respectively readable for 10th – 12th grade level students in SHS and 8th – 9th grade level students in JHS 2 and JHS 3. However, 1 passage is respectively readable for 7th grade level students in JHS 1, and 5th – 6th grade level students in Primary 5 – 6. It follows that the passages are at the readability standard of SHS students since none of the passages is above their readability level.

Table 4.32 shows the readability results for Book 4 using SMOG formula.

Table 4. 32: SMOG Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	4	40.0	10th – 12th grade	15 – 18 years
4	3	30.0	8th – 9th grade	13 – 15 years
5	1	10.0	7th grade	12 – 13 years
6	1	10.0	5th – 6th grade	10 – 12 years
7	1	10.0	4th – 5th grade	9 – 11 years
Total	10	100		

Source: ***Field data, 2020***

From table 4.32, 4 passages are readable for 10th – 12th grade level students in SHS; and 3 passages are readable for 8th – 9th grade level students in JHS 2 and JHS 3. But 1 passage is respectively readable for 7th grade level students in JHS 1, 5th – 6th grade level students in Primary 5 – 6, and 4th – 5th grade level students in Primary 4 – 5. With regard to the age appropriateness, 40 percent of the passages (being the highest) are suitable for SHS students within 15 – 18 years. 30 percent of the passages are good for students in JHS 2 – 3 within 13 – 15 years. It follows that 6 passages are actually below the readability standard of SHS students, but none of the passages is above their readability level. Hence, the passages should be much readable and comprehensible for SHS students.
Table 4.33 displays the readability results for Book 4 using ARI formula.

Table 4. 33: ARI Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	1	10.0	College level	18 – 22 years
3	1	10.0	10^{th} – 12^{th} grade	15 – 18 years
4	4	40.0	8^{th} – 9^{th} grade	13 – 15 years
5	1	10.0	7^{th} grade	12 – 13 years
6	1	10.0	5^{th} – 6^{th} grade	10 – 12 years
7	2	20.0	4^{th} – 5^{th} grade	9 – 11 years
Total	10	100		

Source: ***Field data, 2020***

The results from table 4.33 show that 1 passage is respectively readable for college level students within 18 – 22 years, 10^{th} – 12^{th} grade level students in SHS between 15 and 18 years, 7^{th} grade level students in JHS 1 within 12 – 13 years, and 5^{th} – 6^{th} grade level students in Primary 5 – 6 between 10 and 12 years. Lastly, 2 passages are readable for 4^{th} – 5^{th} grade level students in Primary 4 – 5 within 9 – 11 years.

It follows that majority of the passages (representing 40 percent) are readable for JHS 2 – 3 students. Besides, only 1 passage is above the readability level of SHS students. Therefore, SHS students should rather find it much easier to read and comprehend the passages.

Table 5.34 presents LWF readability results for Book 4.

Table 4. 34: LWF Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
2	3	10.0	College level	18 – 22 years
3	2	10.0	10^{th} – 12^{th} grade	15 – 18 years
4	3	40.0	8^{th} – 9^{th} grade	13 – 15 years
6	2	10.0	5^{th} – 6^{th} grade	10 – 12 years
Total	10	100		

Source: ***Field data, 2020***

The results indicate that 3 out of the 10 passages are readable for college level students within 18 – 22 years; 2 passages are readable for 10th – 12th grade level students in SHS between 15 and 18 years; 3 passages are also readable for 7th grade level students in JHS 1 within 12 – 13 years; and 2 passages for 5th – 6th grade level students in Primary 5 – 6 between 10 and 12 years. It can be noticed that most of the passages are below the readability level of SHS students. Therefore, SHS students should be able read and understand most of the passages.

Lastly, the readability consensus results are presented in Table 4.35.

Table 4. 35: RC Readability Results for Book 4

Code	Frequency	Percent	Interpretation	Age appropriateness in US grade level
3	4	40.0	10th – 12th grade	15 – 18 years
4	3	30.0	8th – 9th grade	13 – 15 years
5	1	10.0	7th grade	12 – 13 years
6	1	10.0	5th – 6th grade	10 – 12 years
7	1	10.0	4th – 5th grade	9 – 11 years
Total	10	100		

Source: ***Field data, 2020***

The Readability Consensus (RC) gives the overall readability test results of the 7 formulas. Table 4.35 above, 4 passages are readable for 10th – 12th grade level students in SHS, who should age between 15 and 18 years. Again, 3 passages are readable for 8th – 9th grade level students in JHS 2 – 3 between 13 and 15 years. 1 passage each is readable for 7th grade level students in JHS 1, 5th – 6th grade level students in Primary 5 – 6, and 4th – 5th grade level students in Primary 4 – 5.

Although, majority of the passages (representing 40 percent) meet the readability standard of SHS students, the rest of the passages are actually below the readability level of SHS students. It follows, therefore, that all the passages should be readable and understandable for the SHS students.

Descriptive Statistics for Book 4

Subsequent to the readability results for the individual passages, the average results for all the formulas are assessed by running the descriptive statistics analysis, where the mean, standard deviation, skewness and kurtosis are reported. Table 4.3 depicts the descriptive statistics for Book 4.

Table 4. 36: Descriptive statistics for Book 4

	N	Min	Max	Mean	SD	Skewness	Kurtosis
FRE	10	50.50	92.70	65.84	13.33	0.892	0.334
GFOG	10	5.40	14.80	11.93	2.82	-0.390	0.556
FKGL	10	3	7	4.30	1.41	0.801	-0.378
CLI	10	3	6	3.90	0.99	0.085	0.914
SMOG	10	3	7	4.20	1.39	0.085	0.265
ARI	10	2	7	4.60	1.64	0.246	-0.687
LWF	10	2	6	3.60	1.51	0.615	-0.671
RC	10	3	7	4.20	1.39	0.085	0.265
WPS	10	11	25	17.20	4.34	0.116	-0.060
CPW	10	3.8	4.9	4.500	0.33	-0.933	1.162

Source: ***Field data, 2020***

With reference to table 4.36, FRE formula records a mean of 65.84 with standard deviation of 13.33, skewness of 0.892 and kurtosis of 0.334. The value of the mean suggests that the textbook is standard to read by students in JHS 2 – 3, who should age between 13 – 15 years. It implies that the textbook is rather below the readability level of SHS students, and therefore they should be able to read and comprehend with ease.

The value of the standard deviation shows that there is less variation in the readability results for the individual passages, indicating that the mean value could truly reflect overall readability of the textbook. The values of the skewness and kurtosis prove that the data is normally distributed.

Next, GFOG formula records mean of 11.93, standard deviation of 2.82, skewness of -0.390 and kurtosis of 0.556. Since the mean score shows that the textbook is fairly difficult to read, which corresponds with the US grade level for SHS students. It can be concluded that the textbook is far below the reading level of SHS students. The standard deviation score reveals that there is quite less variation in the readability results of the individual passages. The skewness and kurtosis scores show that the data is symmetrical, therefore it is normally distributed.

Additionally, FKGL readability results record mean of 4.30, standard deviation of 1.41, skewness of 0.81 and kurtosis of -0.378. Based on the mean score, it can be concluded that the textbook is generally readable for 8^{th} – 9^{th} grade level students in JHS 2 – 3, who should age between 13 and 15 years. Clearly, the average readability level of the textbook is below the readability standard of SHS students. Hence, it is expected that SHS students would read and understand the passages better. The standard deviation score proves that there are fewer differences in the readability results for the individual passages, giving credence to the mean score. The skewness and kurtosis scores confirm the normality of the data.

Furthermore, 3.90 mean, 0.99 standard deviation, 0.085 skewness and 0.914 kurtosis are recorded for the CLI readability results. Averagely, the mean value indicates that the textbook is appropriate for 8^{th} – 9^{th} grade level students in JHS 2 – 3, who should age within 13 – 15 years. Therefore, SHS students should rather read and comprehend most of the passages with ease, since the textbook is below their readability standard. The standard deviation value also suggests that there is comparatively less spread of the readability results in the distribution around the mean. The skewness and kurtosis values indicate that the results are normally distributed among the individual passages.

Substantially, SOMG formula records mean of 4.20 together with standard deviation of 1.39, skewness of 0.085 and kurtosis of 0.265. Based on the mean score, it can be said that the textbook is, on a whole, readable for 8^{th} – 9^{th} grade level students in JHS 2 – 3, who should be within 13 – 15 years. It follows,

therefore, that SHS students should be able to read and understand passages in the textbook. The value of the standard deviation tells that there are fewer differences in the individual passages results. The skewness and kurtosis score reveal that the results are normally distributed among the individual passages.

In continuation, ARI readability results record mean of 4.60, standard deviation of 1.64, skewness of 0.246 and kurtosis of -0.687. Since the mean value can be approximated to point 5, it can be said that the textbook is readable for 7th grade level students in JHS 1, between 12 and 13 years. It implies that the textbook is far below the readability standard of SHS students, and so they should not encounter any readability challenge using the textbook. The standard deviation score shows that there are no many variations in the results for the individual passages. The skewness and kurtosis scores confirm that the data is normally distributed.

Moreover, LWF formula records mean of 3.60 with standard deviation of 1.51, skewness of 0.615 and kurtosis of -0.671. Approximately, the mean score suggests that the textbook is readable for 8th – 9th grade level students in JHS 2 – 3, who should be within 13 – 15 years. Similarly, the mean score lies between SHS grade level and JHS grade level. Therefore, the textbook is readable and comprehensible for SHS students. The value of the standard deviation shows that there is no much disparity in the readability results for the individual passages. Meanwhile, the skewness and kurtosis prove that the results for the passages are normally distributed around the mean.

Lastly, the readability consensus results for the passages record mean of 4.20 together with standard deviation of 1.39, skewness of 0.085 and kurtosis of 0.265. The mean value depicts that among all the formulas, the textbook is generally readable for 8th – 9th grade level students in JHS 2 – 3, who should be within 13 – 15 years. Clearly, this is below the readability level of SHS students. Hence, SHS students should rather find it easier to read, understand and pass comprehension tests on the passages in the textbook. The standard deviation value shows that there is less variation in the readability results for the formulas. The skewness and

kurtosis values also confirm that the data is normally distributed for parametric statistical analysis.

Consequently, word per sentence (WPS) and character per word (CPW) of the passages in the textbook were assessed. The results in Table 4.36 shows mean of 17.20 and standard deviation of 4.34 for WPS. The mean score shows the average word per sentence in each passage. This means that on a scale of 11 to 25, majority to passages in the textbook has average WPS of 17.20, which is good. The standard deviation also depicts that there is not much spread of the values in the distribution around the mean. With regard to CPW, mean of 4.5 and standard deviation of 0.33 are recorded. This suggests that the average character per word in all the passages is 4.5 on a scale of 3.8 to 4.9, and there is not much difference in the CPW among the individual passages.

4.2 Criteria used by Authorities of Private SHS to select English language textbooks

This aspect of the chapter presents the results of the qualitative data which were collected through an interview conducted for heads, assistant heads and English language teachers in selected private SHS. In all, 12 participants were sampled. Their consents were first sought and other ethical considerations were met. The data was analyzed using thematic analysis technique which is usually used to analyze interview data (Yin, 2013). The results are presented in two ways. The first sub-section reports the demographic characteristics of the respondents while the second sub-section reports main finding under thematic headings.

4.2.1 Demographic characteristics of respondents

The participants' demographic characteristics were ascertained and the result is summarized in Table 4.37.

Table 4. 37: Demographic Information

	Frequency	*Percent*
Gender		
Male	8	66.7
Female	4	33.3
Total	12	100
Status		
Head	4	33.3
Asst. Head	2	16.7
English Teacher	5	41.7
Asst Head/English Teacher	1	8.3
Total	12	100
Class taught		
SHS 1	1	12.5
SHS 3	1	12.5
SHS 2 and SHS 3	1	12.5
SHS 1, SHS 2 and SHS 3	2	25
SHS 1 and SHS 2	3	37.5
Total	8	100
Programme of study		
Diploma Certificate in Art Education	1	8.3
BA in English Language	2	16.7
BA French (Linguistics)/Political Science	1	8.3
BA in Linguistics	1	8.3
BA Economics and Geography	2	16.7
MSc in Human and Social Services	1	8.3
Bachelor of Education (English Language)	2	16.7
Teaching English as Second Language (TESL)	1	8.3
BEd Home Economics	1	8.3
Total	*12*	*100*

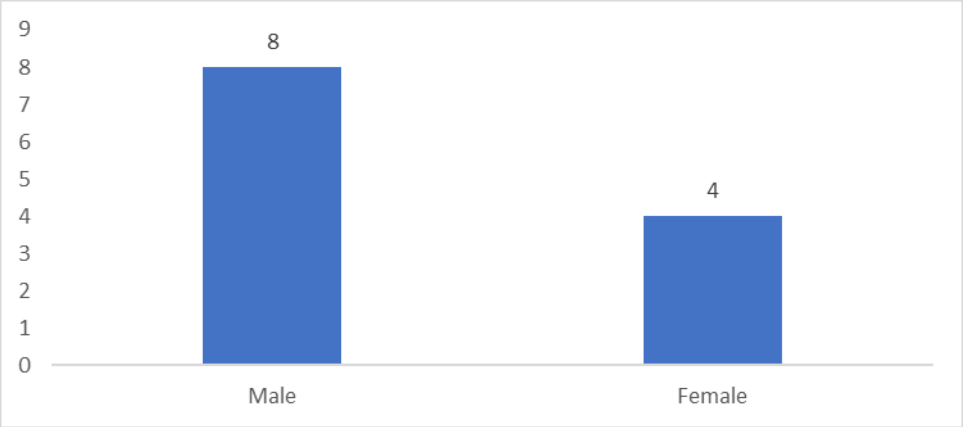


Figure 4. 17: Gender

The findings above showed that eight of the respondents representing 66.7 percent were males compared to four respondents representing 33.3 percent who were females. Thus, there were more males interviewed than females.

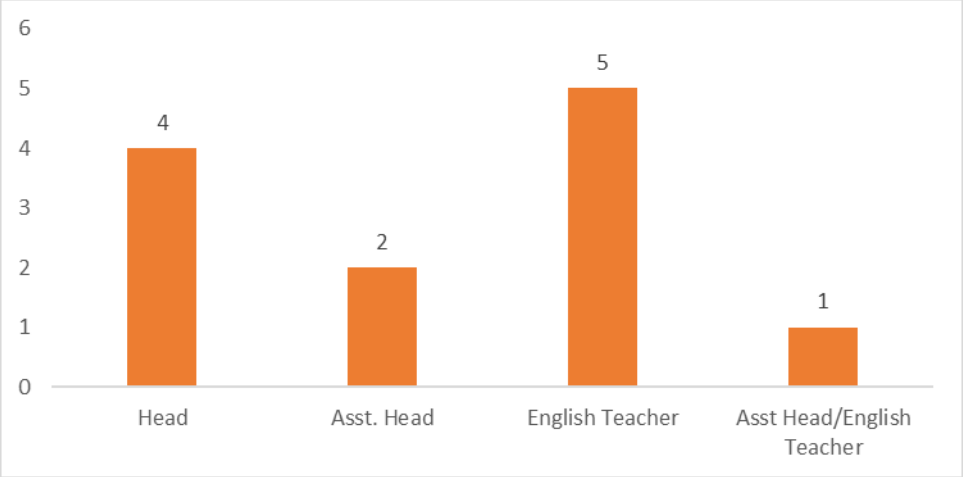


Figure 4.18: Status

Four out of the 12 respondents interviewed representing 33.3 percent were head teachers of their various schools, two respondents (16.7%) were assistant headmasters of their school and one respondent (8.5%) doubled as assistant headmaster as well as an English Teacher. Five respondents representing 41.7 percent forming the majority, were English Teachers. These respondents were English Language Teachers.

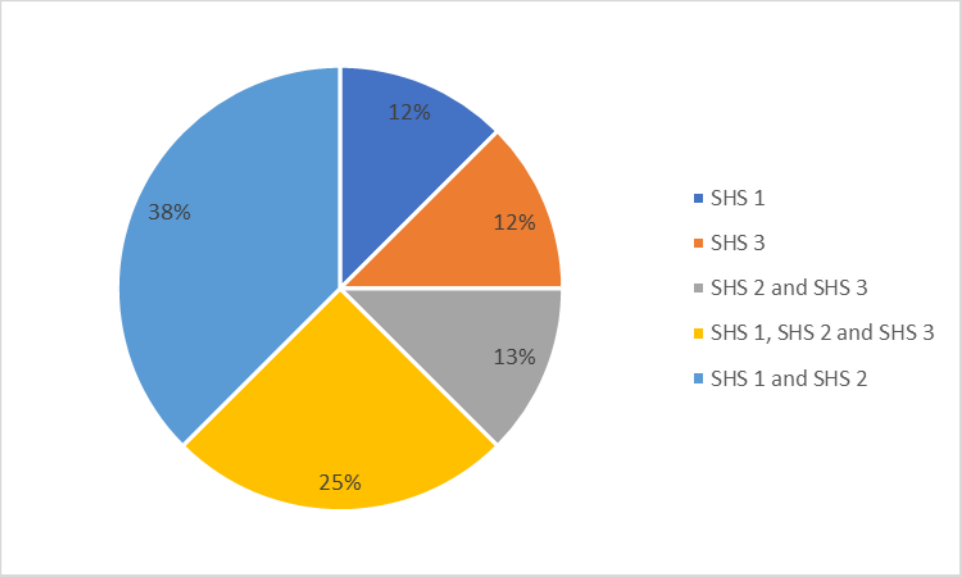


Figure 4.19: Class Taught

Respondents taught from Senior High School (SHS) form 1 to form 3 with majority (three respondents representing 37.5%) teaching SHS 1 and SHS 2. A quarter (25.0%) taught all the three forms; thus, from SHS 1 through to SHS 3, one respondent (12.5%) taught both SHS 1 and SHS 3, one respondent (12.5%) taught SHS 3 and one respondent (12.5%) taught SHS 1. The four Head teachers did not teach any class.

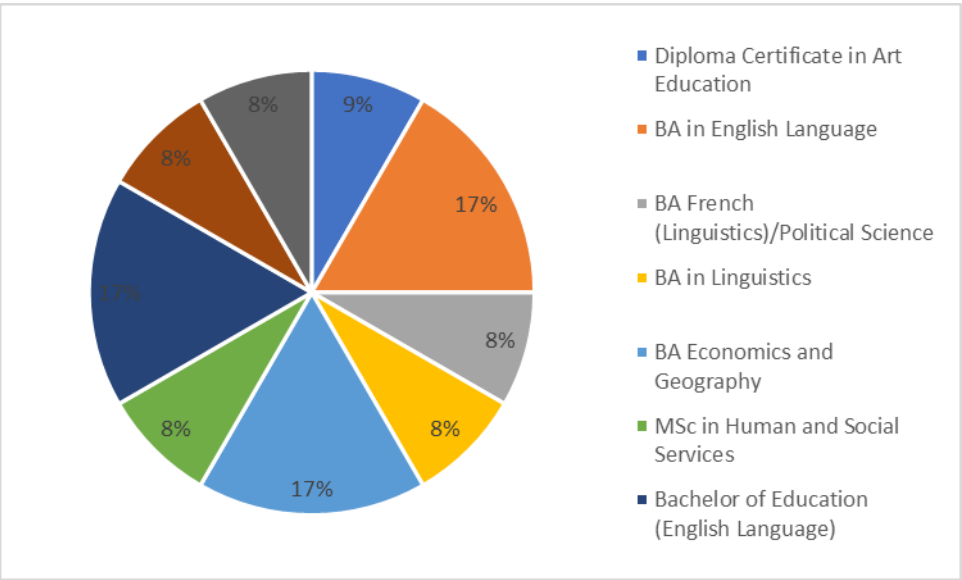


Figure 4. 20: Programme of study

All the respondents had tertiary education with the following as the program of study. From the findings, two respondents (16.7%) had Bachelor of Arts in English, two respondents (16.7%) had Bachelor of Arts in Economics and Geography as well as two respondents (16.7%) had Bachelor of Education in English Language. The rest were one respondent (8.3%) with Diploma Certificate in Art Education, one respondent (8.3%) with Bachelor of Art in French (Linguistic)/Political Science, one respondent (8.3%) with Bachelor of Arts in Linguistics, one respondent (8.3%) had a Master of Science in Human and Social Services, one had B.Ed in Home Economics and one had certificate in Teaching English as Second Language (TESL).

4.2.2 Main Results

The main results are thematically presented. Hence, the subsequent sub-headings capture the interview results under each theme and also in line with the interview guide.

Responsibility of selecting English language textbooks

The researcher inquired of the authorities who is responsible for selecting English language textbook for private SHS? The results indicated that management, headteachers, English teachers and proprietors were those responsible for the selection. For instance, ***M1, M2*** and ***M3*** noted that the selection of English language textbooks is the responsibility of management. ***Y1*** also submitted that: “The Proprietress in consultation with the board chair and teachers select textbooks. At other times textbooks are selected in accordance with the syllabus and booklist from WAEC”. ***D1*** also mentioned that “English Language teachers select their own textbooks based on a booklist from GES”.

On the question about whether the textbooks being used were prescribed by NaCCA or GES-Adenta, the analysis revealed that most of the textbooks were neither prescribed by NaCCA nor GES-Adentan. This is confirmed by one of the participants. For instance, ***D3*** noted that “no, the books we use especially supplementary readers are selected by teachers or management of the school.” “GES and NaCCA do not interfere in this decision making” she added.

It was also discovered that the private SHSs do not use the prescribed textbooks used by the public SHSs. ***U1*** justified that "The public schools use government prescribed textbooks but we choose something different to distinguish us from the public schools". Similarly, ***Y1*** also explained that the private schools do not use the same textbooks as public schools He gave the same reasons as U1 "just to set us apart from public schools we choose different textbooks". However, some respondents indicated that only one of their textbooks was being used by some public schools (***M1, M2,*** and ***M3***).

GES-Adentan's awareness of usage of non-prescribed supplementary English language textbooks

The participants were asked to affirm whether GES-Adentan is aware of the English language textbooks they select and use. All the participants indicated that GES-Adentan is fully aware of the English language textbooks they use in their schools. ***M2*** recounted that "…they see us use them when they visit the school but nobody questions nor query us for using these books". When other participants were asked whether officers from GES-Adentan had raised concerns about the textbooks they use the result showed that GES-Adentan officials were not concerned. This confirms M2's statement that they are neither questioned nor queried by the education officers. It is also evident in the response of ***Y1*** that "nobody questions us, once our students are performing well, that's it". ***D3*** also mentioned that "…nobody has informed us that the books are not prescribed".

Criteria used by GES-Adentan in the Selection of English language textbooks

Since the participants indicated that GES-Adentan was aware of the kind of textbooks they select and use the researcher sought to know whether any criteria were recommended by the GES-Adentan for use by the private schools in their selection of textbooks. The interview results revealed that no criteria were provided by the GES-Adentan. For instance, ***U2*** submitted that "… GES doesn't give any criteria". ***M2*** also noted that "we haven't received any document like that". ***D3*** also stated that "…we have never received any criteria from GES so management decides".

This implies that even though GES-Adentan was aware that private schools were not using the prescribed textbooks as used by their counterparts in the public schools, they failed to query them or provide them with criteria to follow. They simply leave them to take their own decisions regarding textbook selection and usage. Meanwhile, the private and public students write the same final examination. It follows that the private students are likely to be disadvantaged, if WASSCE examiners rely solely or mainly on prescribed and recommended SHS schools' textbooks.

The private school respondents were asked which criteria they use to select textbooks to suit the readability levels and age of their children their responses are summarized below;

> Authorities of private schools disclosed in the interview that they do not use any criteria in determining the suitability of textbooks before they are purchased. When asked what informed their choice of a textbook over the other, the following were their responses: the cost of the textbook, how popular the author and the book are, how much profit can be gained to support utility bills and teachers' salaries among others.

Readability Formulas

The researcher proceeded to find out whether the participants had any idea about readability formulas. All the participants indicated that they had no idea about readability formulas. It means that no scientific method is applied by management, proprietors and English language teachers in selecting supplementary English language textbooks for their students. This further suggests that the selected textbooks for the students might not be standard for the students.

English language textbooks meeting the relevance and demand for the curriculum

The study investigated whether the criteria the schools use to select English language textbooks meet the relevance and demand for the curriculum. While some participants indicated that they could not tell whether the selected English language textbooks meet the relevance and demand for the curriculum, others

believed that the selected textbooks meet the relevance and demand for the curriculum. This is evident in the responses of the following participants. ***M1*** provided that "…our textbooks cover the syllabi and curriculum so it is relevant". ***Y1*** also submitted that "…we check first to see if the book covers the syllabus before we add it to the book list". ***U1*** also said that "…it covers the topics in the curriculum". ***D1*** supported that "…we use *Aki-Ola* and *Approacher's* Series. Since they are good books, the content meets the demands of the curriculum". It follows that although the selection of textbooks for the private schools do not follow any criteria or readability formulas, the school authorities ensure that the textbooks cover the topics in the curriculum.

Content of textbooks as the foundation for learning across levels

The researcher also inquired to know if the content of textbooks were being considered as foundation for learning across levels before selection. The analysis revealed that the content of textbooks was not considered by the authorities who selected the books. This implies that there would be difficulty in assigning the textbooks across levels.

How does the English language textbooks develop the reader intellectually, emotionally and socially?

Responses to the above question were varied. Whereas some indicated that they had no idea, others believed it depended on examination. For instance, ***U1*** noted that "it is difficult to tell until their final external results come out". ***M3*** also suggested that it depends on "how well they pass their external exam". However, ***D3*** responded that "the reader's intellect is developed emotionally and socially. ***D2*** also stated that "the lessons cover all aspects of life".

How does the author explain facts in the textbook; is it a criteria for selecting the textbook?

The participants responded that facts were not considered as a criteria for selecting the textbooks. To illustrate, ***M2*** mentioned that "…the focus is more on the vocabularies". ***D3*** also indicated that "I didn't really consider that but since it's a good book used by other schools – both private and public I know it was considered".

Does your English language textbook contain adequate practical tasks for students' practice?

Here, the participants indicated that the English language textbooks do not contain adequate practical tasks for students' practice. However, English teachers construct their own exercises for the students.

Is the language used by the author reader-friendly?

The analysis of the interview data revealed that the language used by authors in the selected textbooks is reader-friendly. The participants indicated that the textbooks contained simple language. However, some of the justifications provided by the participants appear interesting. For instance, ***U2*** explained that the language is reader-friendly "because students like the passages so I think it is friendly". ***M2*** rather admitted that "most of them but some are a bit difficult for them so we let them research". Similarly, ***D3*** noted that:

> "…some of the students are lazy readers so they are not familiar with some and I have to compel them to look up words to understand the language used. Some of the language is also foreign so I give them the equivalent in local words".

Y2 also posited that "some are but others have to be put in context for the reader to follow". It follows, therefore, that not all the passages are reader-friendly.

Facilitator guide

The researcher inquired of whether the information in the Facilitator Guide is flexible and easy for use by the teacher. Unfortunately, all the participants indicated that they no longer use facilitator guide.

How the content of the textbook connects and relates to learners' environment

How the content of the textbooks connects and relates to learners' environment was asked. The results show mixed responses. Some participants said the content of the textbooks does not relate to the local environment of the learners but rather appears more foreign. "The learners sometimes find the passages quite foreign so I try to relate them to their environment", ***M3*** stressed. ***Y1*** shared

similar sentiment that “Hummm…that’s a problem. There is some foreign language so we intend to use a more localized one perhaps after the COVID”. On the other hand, other participants stated that the textbooks are well linked to learners’ environment. For instance, ***U2*** posited that “some of the occurrences in the textbook are similar to those that happen in their environment”. ***M1*** supported that “the contents are similar to events in the environment”. ***D3*** added that “a lot of the passages refer to practical situations in their environment”.

4.3 Awareness by authorities of GES – Adentan of the unsuitable nature of some English language textbooks used by private SHS in Adentan

This third objective of the study was also achieved through an interview exercise involving the GES authorities at the Adentan Municipal Education Directorate. Specifically, the interviewed authorities consisted of the Deputy Director of Monitoring and Supervision (which is labeled as DDMS), English Language Co-ordinator (which is labeled as ELC), and SHS Coordinator (which is labeled as SHSC). The same interview guide was used for the three participants to solicit their views on this objective. After the thematic analysis of the qualitative data gathered, the results are presented and discussed in the following paragraphs.

The use of non-prescribed English language textbooks by private SHS

First, the researcher sought to know whether GES was aware that private SHS in the Adentan Municipality are using non-prescribed English Language textbooks. All the participants affirmed that they are aware of the usage of non-prescribed supplementary English Language textbooks by private SHS. They also admitted that no measures have been put in place by NaCCA to ensure that the private SHS select and use prescribed textbooks.

The **ELC** explained that prescribed textbooks are usually provided by government, which are not for sale and so it is not possible to make them available for private schools. On the part of the **SHSC**, the usage of the non-prescribed English language textbooks by private SHS lingers on because NaCCA is not aware to enforce their regulations. It follows that the usage of non-prescribed supplementary English Language textbooks by private SHS is well

known by GES but no effort has been made over the years to compel the private senior high schools to use textbooks prescribed by NaCCA.

GES awareness of the criteria used by the private SHSs to select textbooks

The researcher sought to ascertain whether GES is aware of the criteria used by the private SHS to select textbooks for their students and whether the selection of the textbooks undergoes any scientific assessment and evaluation. Although the three Co-ordinators do not know the specific criteria used by the private SHS, they are certain that the private schools do not employ any scientific method such as readability formulas in selecting textbooks for their students. The Co-ordinators also submitted that unlike the prescribed textbooks that undergo assessment by NaCCA, which may follow a scientific process, the selection of textbooks by private SHS are usually done by English language teachers and proprietors.

The **ELC** accentuated that *"the teachers may just be interested in content of the textbooks, and if they feel it is good for the students then they use it …I don't think they use any scientific method".* The **SHSC** supported the claim that the proprietors do not use any scientific method, but they rely on the judgment of the teachers.

> *"Most often than not, what you hear teachers saying is that [oh!] This book is of good quality; this book is good; but the type of instrument used to measure the quality of the book is not scientific. The fact that they think that the material in it or the information that is given is good, whether the child can read it or not, they take it; for these reasons, all private secondary schools have their own textbooks apart from the prescribed ones which are compulsory for use in pre-tertiary institutions"* **SHSC** added.

The **ELC** further recounted that sometimes private Senior High Schools purchase textbooks that are cheap in the market and sell at a higher cost to parents and their wards to maximize profits so *"it is an issue of affordability and business creation rather than ensuring quality and coverage of content".*

Measures put in place to ensure selection and usage of textbooks prescribed by NaCCA

Furthermore, the Co-ordinators were asked whether they have tried in their various capacities to stop the private SHS from using non-prescribed supplementary English Language textbooks. They all responded that technically it is not their responsibility to do so. However, **SHSC** noted that attempts have been made by their office to stop the usage of textbooks that do not meet the standard, *"…sometimes we caution the private SHSs against the sale of non-prescribed textbooks but it falls on deaf ears".* **DDMS** added that GES do not evaluate the textbooks that are used by private SHS because they are not empowered to do so; therefore, they cannot impose the use of prescribed textbooks on them. *"Technically, it is not the responsibility of the English Coordinator to assess and evaluate English Language textbooks for private SHS" the* **ELC** submitted. The **ELC** however, alluded that *"…most of the non-prescribed supplementary English Language textbooks are standardized but as to whether the content covers the curriculum in aid of students' performance, I can't confirm".*

GES-Adentan's awareness of criteria used by NaCCA

The researcher asked to know if GES is aware of the criteria used by NaCCA to assess textbooks and whether the criteria are scientific. All the three Co-ordinators indicated that they do not think NaCCA applies any scientific method (readability formulas). **SHSC** posited that NaCCA uses traditional method to assess the textbooks instead and not scientific instruments like readability formulas.

> *"I don't think so; I rather feel they use the traditional ones. Why I am saying this is because most of our private schools adopt other textbooks because they feel that those that are prescribed by NaCCA are not of any good quality and for that matter it doesn't meet the standard of the children. So, if actually NaCCA was going by this approach, I don't think any private school will make such excuses"* **SHSC** explained.

Nevertheless, **ELC** and **DDMS** believed that NaCCA will consider age and level of the readers of the textbooks before prescribing. For instance, **ELC** pointed out that *"though NaCCA may not use scientific methods, I think they consider age and level because it is relative, depending on what you are applying it for".* In disagreement, **SHSC** argued that *"I also don't think they consider the age and*

level of the children, perhaps once the child can read few lines then they think it meets their standard".

Performances of private school candidates in BECE and WASSCE in Adentan Education Directorate

All in all, the participants were asked what they think accounts for the poor performance of the private SHS compared to their peers in public SHS. Among several factors stated, all the Co-ordinators pointed out lack of qualified teachers at the private SHS. They explained that less effort is put in to get qualified teachers at the private SHS level compared to the private JHS level; and this could explain the high performance at the private JHS as against the low performance at the private SHS.

> *"They go to the streets, anywhere to pick teachers to come and handle the students. Unlike the public schools that have professionals and experts who teach based on their areas of subject specializations and acquire good results at WASSCE. The exact opposite is what happens in the private senior high schools so performance is relatively lower"* **SHSC** elaborated.

The **DDMS** cited lack of qualified teachers at the private SHS as the root cause of their poor performance in the WASSCE exams. **ELC** added that usually JHS leavers who failed to get admission into public SHSs end up in the private SHSs. Since the private SHS normally admit these students with low grades and learning abilities, coupled with unqualified teachers, they are unable to perform well. The **DDMS** again added that to complicate the situation of engaging unprofessional teachers in the private schools, most of these schools are also understaffed. A teacher teaches two or more subjects including subjects outside his or her area of specialization.

Finally, the Co-ordinators suggested that there should be collaboration between NaCCA and GES in the prescription of textbooks and also to ensure that all SHSs including private schools use the prescribed textbooks. The participants were also of the view that NaCCA should follow standard procedures in prescribing textbooks so that it would be easier to assess the students' performance relative to the textbooks. For instance, the SHSC stated that

"I would be glad if NaCCA will follow the right procedure, come out with standard books to meet the various levels of the children so that when we are measuring them it will be realistic. Sometimes I feel that the criteria we use to measure their abilities are unrealistic because some of the textbooks are not readable. Even if NaCCA fails to use scientific tools to determine the appropriateness of textbooks for students, it should at least send us the list of [approved] textbooks with recommended publishers so that we ensure during monitoring that the private schools go in for such books and use them in our schools. If this done but students fail to perform well, we can actually trace and easily know where the challenge is. Now, it is very difficult to determine the root cause of non-performance in learners".

4.4 Interventions by NaCCA to ensure usage of suitable and prescribed textbooks at the SHS level

The fourth objective of the study investigated the interventions put in place by NaCCA to ensure compliance with usage of suitable and prescribed English language textbooks at the SHS level. This is achieved through a qualitative approach. Thus, an interview was conducted for the Curriculum Officer for Languages (which is labeled as COL) at NaCCA. The following presents the results of thematic analysis.

NaCCA's awareness of the usage of non-prescribed supplementary English Language textbooks by private SHS

To begin with, the researcher inquired whether NaCCA was aware of the usage of non-prescribed supplementary English Language textbooks by private SHS and if measures were put in place to compel the private schools to use only prescribed textbooks. The **COL** replied that NaCCA is mandated to prescribe all instructional resources including textbooks for use in all schools at the pre-tertiary level in Ghana but there are no measures to enforce usage by schools, especially private schools. **COL** added that NaCCA only prescribed textbooks but does not select textbooks for use in schools. It implies that SHSs are permitted to select their own textbooks but these textbooks should be one of those approved by NaCCA. This could explain why the private schools take undue advantage of the situation to

rather select and use non-prescribed supplementary English Language textbooks for their students.

The criteria NaCCA uses to determine the appropriateness and suitability of textbooks for learners

Secondly, the study investigated the criteria NaCCA uses to determine the appropriateness and suitability of textbooks for learners before approval is given for their use at the SHS. The interview results show that NaCCA has independent textbook assessors who use Textbook Assessment Form A as a tool for assessing textbooks. The Assessment Form 'A' a tool which is the criteria used for the assessment however, is not scientific and it does not consider readability formulas as instruments for determining age and grade appropriateness of textbooks for students. *"The assessment tool has been introduced to NaCCA by Independent Textbook Assessors, who assess the textbooks, give their reports before approval is given by the unit"* **COL** explained.

It was also revealed that NaCCA trains the Independent Textbook Assessors for the assessment and evaluation of textbooks for the selection and use by pre-tertiary institutions (private schools inclusive). When asked whether staff of private schools and those from the supervision of GES-Adentan are involved in the assessment process, the COL stated clearly that NaCCA per its mandate does not involve nor consult private SHS or Education units when it comes to the prescription of textbooks.

When the Curriculum Officer of Languages from NaCCA was asked about her knowledge on the use of scientific methods for determining the difficult nature of textbooks, she admitted that she knew what it was even though NaCCA does not use it as criteria for determining textbook appropriateness.

She further explained what readability formulas are, their basic use and she cited the following as the types of readability formulas she knew: Readable Pro (this analyses a text as a whole, saves time and gives a more accurate score), Dale-Chall, Readability formula, Rudolph Flesch's Reading Ease Formula, Flesch's Grade Level, J. Peter Kinkaid's Flesch-Kinkaid Index, Robert Gunning's Fog

Index, The SMOG Readability Formula, Fry's Readability Graph, Powers-Sumner-Kear Readability Formula, FORCAST readability formula, and Spache readability formula.

In describing the Assessment Form A which is the criteria they use, the **COL** noted that *"The assessment form does not suggest any readability formula. There is only one assessment form that is used for all textbooks. The Languages department does not have a separate one". The* **COL** further shared her views on the effectiveness of readability formulas as quoted below:

> *"Even though Readability formulas are effective scientific tools for measuring text difficulty levels, it focuses only on linguistic aspects of comprehension. It does not take into consideration the reader's background knowledge, experience and other comprehension strategies that contribute immensely to comprehension of a text. Additionally, they may not be effective when the target is 'struggling readers' or 'readers with learning disability' ".*

Conformity to the syllabus

Apart from the criteria used by NaCCA and readability formulas, the researcher also explored how criteria such as conformity to the syllabus (in terms of coverage of required topics, coverage of required skills and coverage of required syllabus concepts) ensure easy comprehension of the texts in the textbooks.

The **COL** responded that per their assessment criteria, conformity to the syllabus deals with the scope of content and not comprehension.

However, she admitted that content (in terms of accuracy and currency of subject matter, sufficiency of the content, and length of passages) are relevant factors to consider in textbook assessment. Additionally, the results indicated that methodology (in terms of sufficiency and relevance of exercises, encouragement of group and individual activities, how information is presented: teacher or learner-centered, coherence, assessment modes, systematic and consistent presentation of information) also play an important role in assessing textbooks.

With regard to cultural relevance and gender sensitivity (like gender balance of content and representation of Ghana's diverse culture), the **COL** explained that *"the cultural relevance of a text enables a reader to identify with the text and that, has a positive impact on comprehension".*

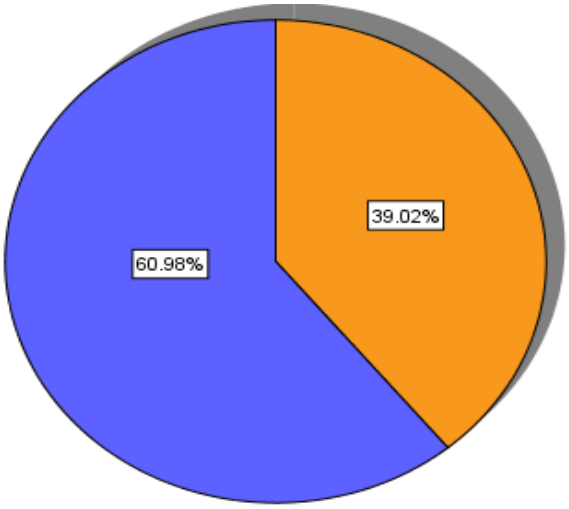
Lastly, language and editorial quality (accuracy and correctness of language use, and language appropriateness for the age of learner and background of the learner) are all important factors to consider in assessing textbooks to ensure text comprehensibility. For instance, the **COL** emphasized that *"these criteria have a correlation with the comprehension of a text".*

4.5 Relationship between Readability Levels and Students' Performance

To address this final objective, the performance of the students was first assessed and captured under sub-section 4.5.1, while the relationship is presented under sub-section 4.5.2.

4.5.1 Results of Students' Performance

The performance of the students was assessed from the passages administered to them as a comprehension test. This was based on the levels (Year 1, Year 2, and Year 3). Thus, this aspect of the chapter reports both the demographic characteristics of the respondents and descriptive statistics (mean, standard deviation, skewness and kurtosis) of the performance. Whereas the descriptive statistics are presented in tables, the demographic characteristics are presented in graphs, charts, and tables.



Source: Survey data, 2020

Figure 4. 21: Gender of Respondents

The gender of the respondents in Year 1 is shown in Figure 4.1. The results indicate that more females (61 percent) participated in the survey than males (39 percent) did. This is consistent with the enrolment data (there are more females than males in the selected schools).

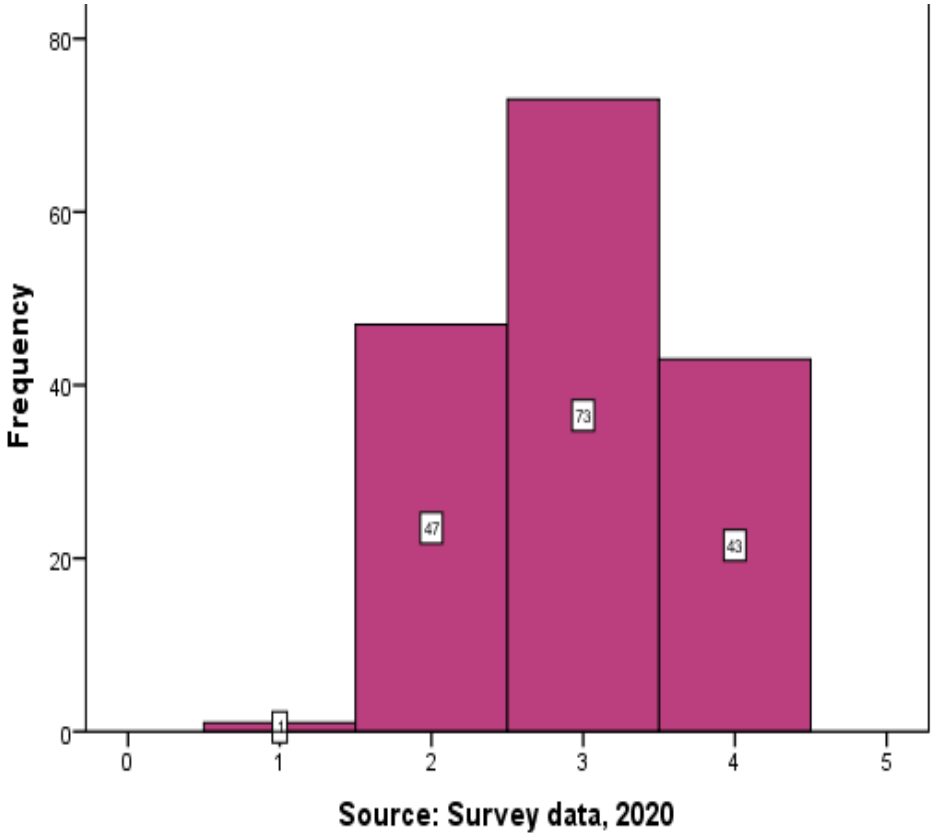
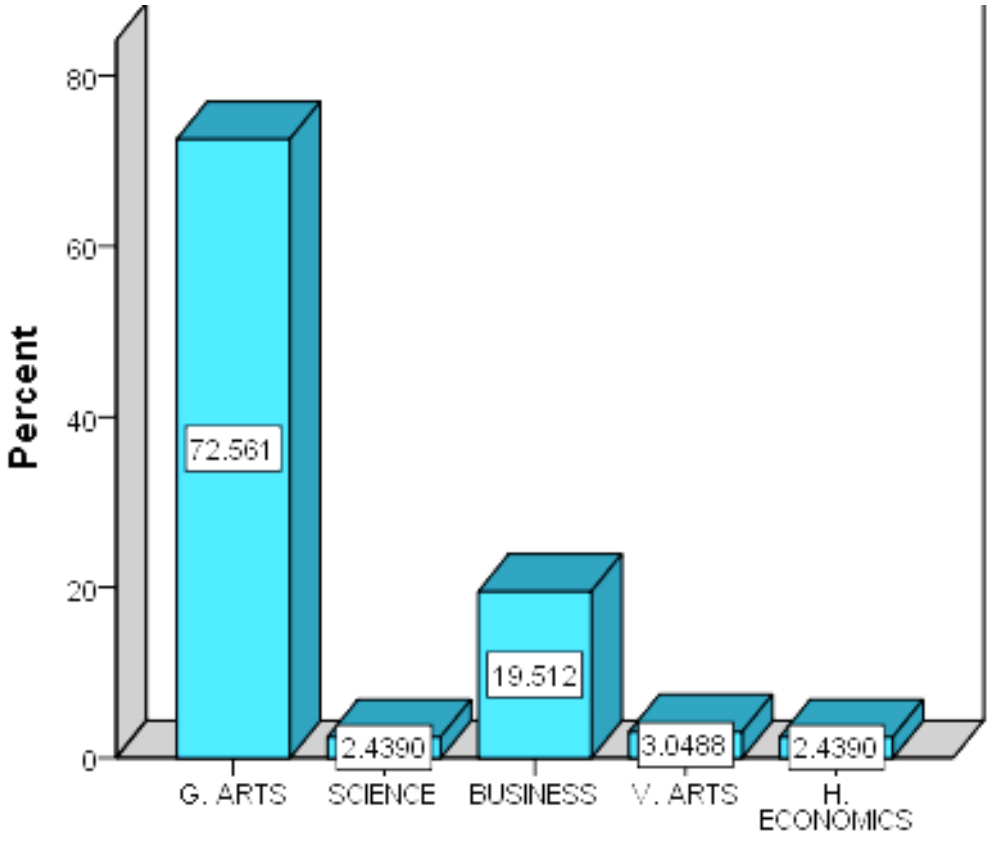


Figure 4. 22: Age of Respondents (YR 1)

Figure 4.22 above and Table 4.38 shows the age group of the respondents in Year 1. The results depict 0.6 percent of the respondents (representing 1 student) is below 13 years. Again, 28.7 percent of the respondents (representing 47 students) are in the age group of 13 – 15 years. Further, 44.5 percent of the respondents (representing 73 students) fall within the age group of 16 – 18 years. Lastly, 26.2 percent of the respondents (representing 43) are above 18 years. It means that majority of the respondents are aged between 16 and 18 years.



Source: Survey data, 2020

Figure 4. 23: Program of Study (YR1)

The programme of study of the respondents has been presented in Figure 4.23 above and Table 4.38. From the Figure 4.23, it can be seen that most of the respondents were offering General Arts (72.6 percent); followed by Business (19.5 percent); and Visual Arts (3 percent) with same number of respondents offering Science and Home Economics (2.4 percent).

Table 4. 38: Demographic characteristics of respondents (Year 1)

Variables	Frequency (*n* = 164)	Percent
Gender		
Male	64	39
Female	100	61
Age		
Below 13 years	1	0.6
13-15	47	28.7
16-18	73	44.5
Above 18 years	43	26.2
Programme of Study		
General Arts	119	72.6
Science	4	2.4
Business	32	19.5
Visual Arts	5	3
Home Economics	4	2.4

Source: ***Field data, 2020***

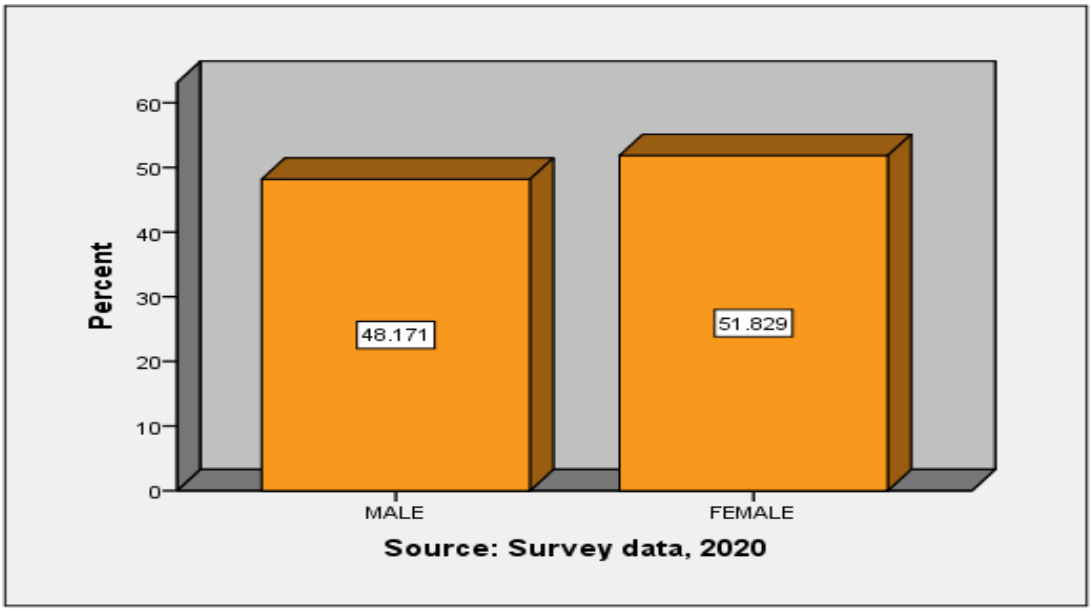
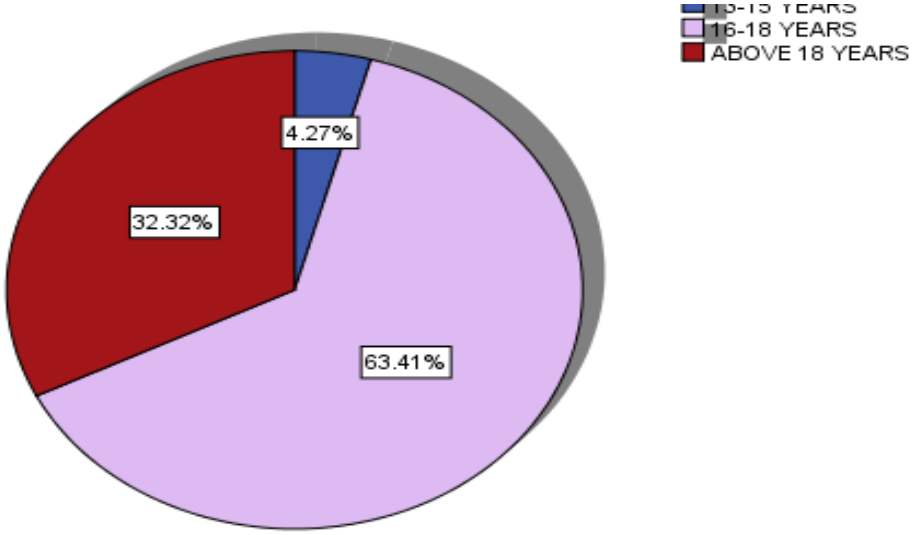


Figure 4. 24: Gender of Respondents (YR 2)

Figure 4.24 and Table 4.39 present the gender of the respondents in Year 2. The results show that more half of respondents are females (52 percent) while 48 percent of them are males, indicating that there were more female participants than male participants, and this is consistent with the enrolment data.



Source: Survey data, 2020

Figure 4. 25: Age of Respondents (YR 2)

Figure 4.25 above and Table 4.39 report the age group of the respondents in Year 2. The results indicate that majority of respondents fall within 16 – 18 years (63.4 percent), followed by those above 18 years (32.3 percent) with those in the age group of 13 – 15 years (4.3 percent) being the lowest.

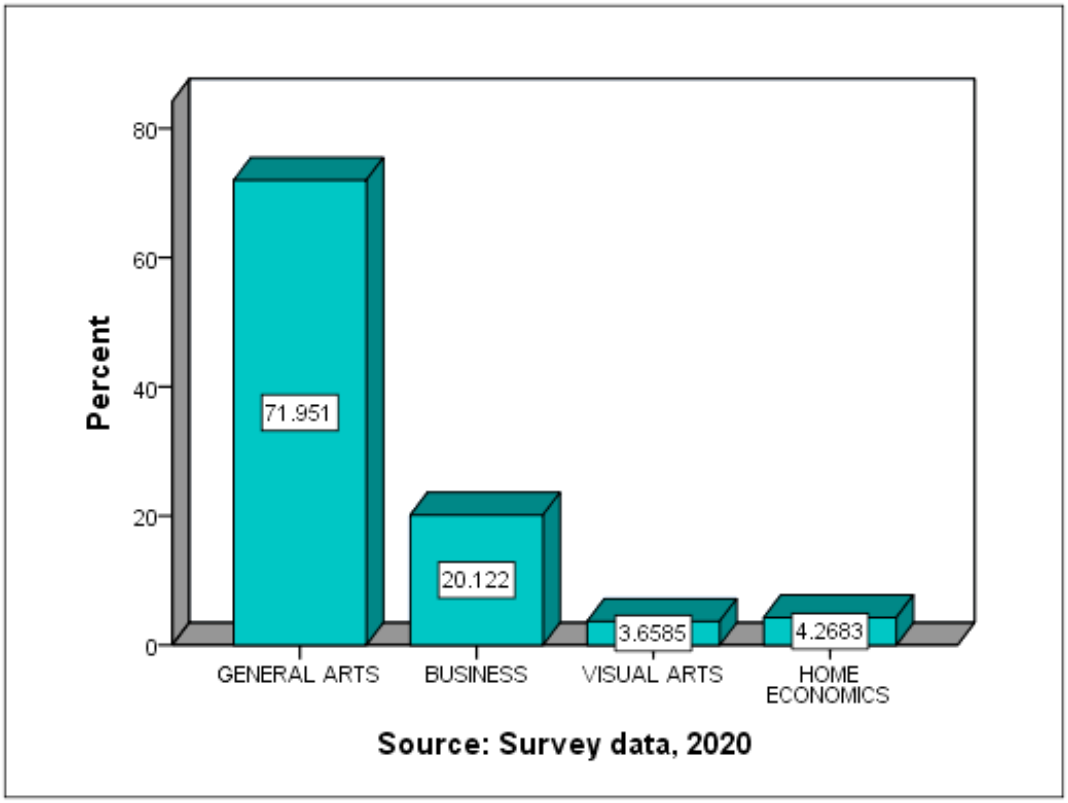


Figure 4. 26: Program of Study (YR 2)

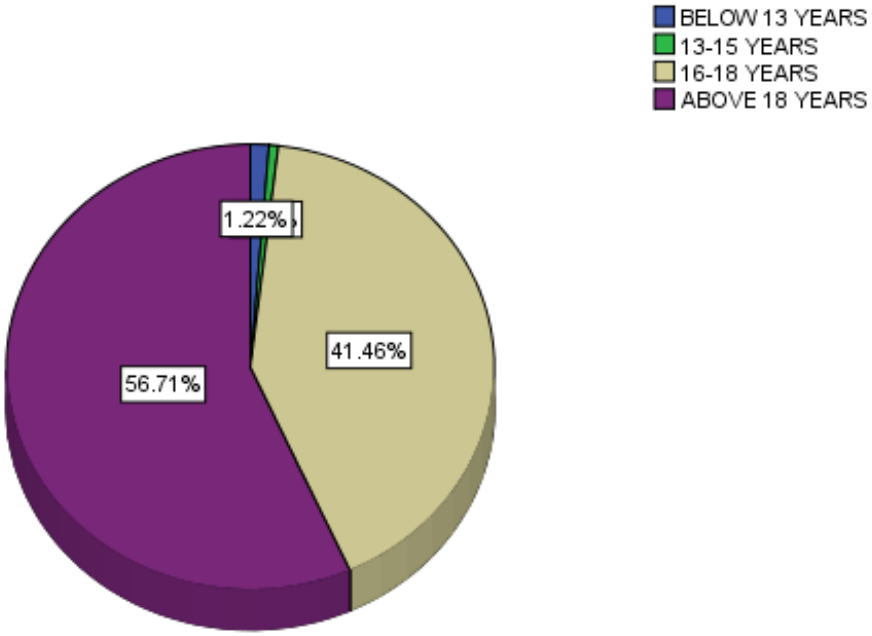
The programme of study of the respondents has been reported in Figure 4.26 above and Table 4.38. From the Figure 4.26, it can be observed that most of the respondents were offering General Arts (72 percent); followed by Business (20.1 percent); and Visual Arts (3.7 percent) with Home Economics (4.3 percent) being the least.

Table 4. 39: Demographic characteristics of respondents (Year 2)

Variables	Frequency (*n* = 164)	Percent
Gender		
Male	79	48.2
Female	85	51.8
Age		
13-15	7	4.3
16-18	104	63.4
Above 18 years	53	32.3
Programme of Study		
General Arts	118	72
Business	33	20.1
Visual Arts	6	3.7
Home Economics	7	4.3

Source: ***Field data, 2020***

The gender of the respondents in Year 3 is presented in Figure 4.27 and Table 4.40. The results show that the sampled population consisted of more females (66 percent) than males (34 percent). It suggests that more females were enrolled in the various schools than males.



Source: Survey data, 2020

Figure 4. 27: Age of Respondents

Figure 4.28 above and Table 4.40 depict the age group of the respondents in Year 3. In a descending order, 56.7 percent of the respondents are above 18 years, 41.5 percent of them are within 16 – 18 years, 1.2 percent of them are below 13 years, and 0.6 percent of them in the age group of 13 – 15 years. It means that most of the respondents in Year 3 are above 18 years.

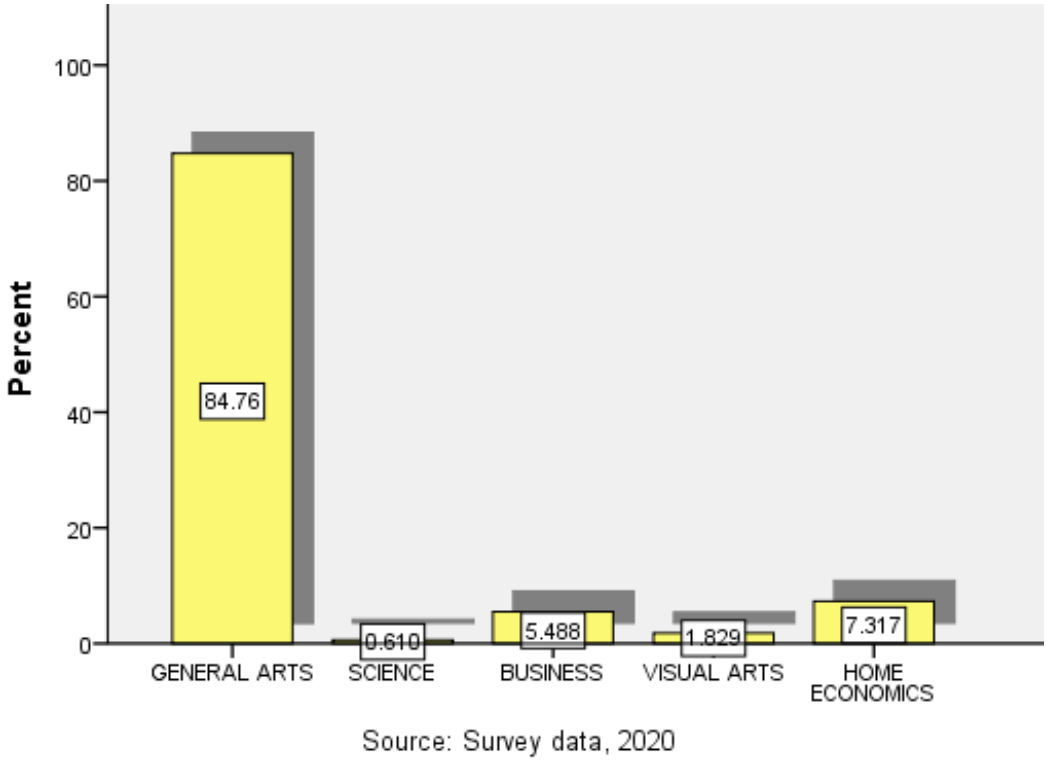


Figure 4. 28: Programme of Study (YR 3)

The programme of study of the respondents in Year 3 has been depicted in Figure 4.28 above and Table 4.40. From the Figure 5.9, it can be seen that most of the respondents were offering General Arts (84.8 percent); followed by Home Economics (7.3 percent); then Business (5.5 percent); and Visual Arts (1.8 percent) with Science (0.6) being the lowest. Just like the respondents in Year 1 and Year 2, the majority of the sampled population were offering General Arts.

Table 4. 40: Demographic characteristics of respondents (Year 3)

Variables	Frequency (*n* = 164)	Percent
Gender		
Male	55	33.53
Female	109	66.46
Age		
Below 13 years	2	1.2
13-15 years	1	0.6
16-18 years	68	41.5
Above 18 years	93	56.7
Programme of Study		
General Arts	139	84.8
Science	1	0.6
Business	9	5.5
Visual Arts	3	1.8
Home Economics	12	7.3

Source: *Field data, 2020*

Table 4. 41: Descriptive statistics for the performance of students

	Min	Max	Mean	SD	Skewness	Kurtosis
YEAR 1						
Passage 1	1.23	2.00	1.59	0.23	0.343	-0.765
Passage 2	1.23	2.00	1.78	0.19	-0.920	0.358
Overall Performance (YEAR1)	1.23	2.00	1.66	0.24	-0.109	-0.058
YEAR 2						
Passage 1	1.14	1.93	1.49	0.18	0.635	-0.109
Passage 2	1.17	2.00	1.55	0.20	0.412	-0.507
Overall Performance (YEAR2)	1.14	2.00	1.52	0.19	0.551	-0.313
YEAR 3						
Passage 1	1.13	2.00	1.58	0.19	0.145	-0.528
Passage 2	1.33	1.92	1.70	0.16	-0.367	-0.832
Overall Performance (YEAR3)	1.13	2.00	1.62	0.19	-0.090	-0.694

Source: *Field data, 2020*

Table 4.41 shows the descriptive statistics for all the levels. With regard to the performance in Year 1, passage 1 records a mean of 1.59, standard deviation of

0.23, skewness of 0.34, and kurtosis of -0.77 while passage 2 records a mean of 1.78, standard deviation of 0.19, skewness of -0.92 and kurtosis of 0.36. The overall performance (that is computation of passage 1 and 2) records mean of 1.66, standard deviation of 0.24, skewness -0.11 and kurtosis of -0.06. The mean values indicate that the performance of the students is poor or low on scale of 1 to 2 (where 1 relates to correct and 2 relates to incorrect or wrong).

However, the values of the standard deviation show that there is relatively less spread of the values around the mean in the distribution, indicating fewer variations in the responses obtained. Applying the normality criteria of Tabachnick *et al.* (2001), it can be concluded that the data is normally distributed since the skewness and kurtosis for the individual passages and overall performance are within +1 and –1. Hence, parametric statistical test can be carried out.

Under Year 2, mean of 1.49, standard deviation of 0.18, skewness of 0.64, and kurtosis of -0.11 are recorded for passage 1 whereas passage 2 records a mean of 1.55, standard deviation of 0.20, skewness of 0.41 and kurtosis of -0.51. The overall performance records mean of 1.52, standard deviation of 0.19, skewness 0.55 and kurtosis of -0.31. The mean scores show that the performance of the students is poor or low. The standard deviation scores indicate fewer variations in the responses obtained. Since the skewness and kurtosis fall within +1 and –1, the data is normally distributed and fit for parametric statistical analysis.

In terms of Year 3, passage 1 records mean of 1.58, standard deviation of 0.19, skewness of 0.15, and kurtosis of -0.53 but passage 2 records mean of 1.70, standard deviation of 0.16, skewness of -0.37 and kurtosis of -0.83. The overall performance records mean of 1.62, standard deviation of 0.19, skewness -0.09 and kurtosis of -0.69. The mean values suggest that the performance of the students is poor or low using the scale of 1 to 2. Nonetheless, the standard deviation values illustrate that there is comparatively less spread of the values around the mean in the distribution, implying fewer variations in the responses obtained. The data is also normally distributed for parametric tests because the skewness and kurtosis are within +1 and –1.

Comparing the mean scores for the overall performance in the three levels, it can be observed that even though generally the performances of the students across the three levels are low, those in Year 2 performed better, followed by Year 3 with Year 1 recording the worse performance. Furthermore, it can be noticed that in all the three levels, those who answered passage 1 performed better than those who answered passage 2. This could mean that passage 1 is quite readable than passage 2.

It is also interestingly to note that the performance results do not justify the readability of the textbooks. While the readability results by all the formulas show that the textbooks are below the readability standard of SHS students, and so they are expected to read and comprehend the passages with ease and pass the comprehension tests, the performance results depict a clear departure between readability of the passages and performance of the students.

It appears that readability of the textbook could not be a strong predictor of students' performance. However, Bashir and Mattoo (2012) argued that readability determines the academic achievements of students. The present finding therefore contradicts the argument of Bashir and Mattoo (2012). Thus, the researcher proceeded to run the regression analysis to establish the predictive relationship between readability level and performance of students.

4.5.2 Relationship between Readability Level and Performance of Students

To assess the relationship between readability and performance of students, the researchers focused on the Book 1 and Book 2 which are frequently and widely used by all the selected schools in the Municipality. As mentioned early on, the passages for the comprehension test were selected from these two books. Both correlation and regression analyses were carried out under this objective.

Correlation Analysis Results

To test the relationship, the Pearson correlation analysis was run to establish the correlation between readability level of the textbooks and performance of the students. The performance of the students is examined in terms of Year 1, Year 2

and Year 3, as well as the overall performance. The result of the analysis is presented in Table 4.42.

Table 4.42: Pearson Correlation Result

Variables	RL	YR1	YR2	YR3	OP
1. Readability Level	1.00				
2. YR1 Performance	-0.007	1.00			
3. YR2 Performance	-0.164	-0.007	1.00		
4. YR3 Performance	-0.243*	0.155*	0.179*	1.00	
5. Overall Performance	-0.183	0.672**	0.567**	0.664**	1.00

Note: **p < 0. 01 and *p < 0.05;* **Source: *Field data, 2020***

The table, readability level has negative correlation with performance. Specifically, there is -0.007 correlation between readability level and Year 1 performance, indicating that readability has weak negative and insignificant relationship with Year 1 performance. As the correlation is not significant, change in readability level is likely not to reflect in performance of the students.

First, the correlation between readability level and Year 2 performance is -0.164, meaning that readability level has modest negative but insignificant relationship with Year 2 performance. Since the relationship is not significant, readability level will not likely influence the performance of the students.

Second, the correlation between readability level and Year 3 performance is -0.243 and this correlation is significant at 5 percent significance level. It implies that readability level has modest negative and significant relationship with Year 3 performance. It further implies that should the current readability level be increased, there will likely be a correspondent decrease in the performance of students in SHS 3. This is because both variables are moving in the opposite direction.

Thirdly, the correlation between readability level and overall performance is -0.183, indicating that there is modest negative relationship between readability

level and overall performance, however the relationship is not significant. Hence, change readability level is not likely to affect overall performance of the SHS students.

Regression Analysis Results

It is important to note that correlation analysis can only establish the mere relationship between or among variables but cannot tell the predictive effect of the independent variable on the dependent variable. Hence, it is imperative to run regression analysis to establish the predictive effect of readability level (independent variable) on performance (dependent variable).

Table 4.43 presents a summary of the regression results for performance. The table contains four blocks where block 1 relates to Year 1 performance, block 2 relates to Year 2 performance, block 3 relates to Year 3 performance, and block 4 relates to overall performance. Blocks 1 to 3 contain two steps, where step 1 relates to readability level, and step 2 relates to gender and age as control variables. Dummy variables were created out of the categorical high values of gender and age.

The model summary and anova are summarized into R-square, adjusted R-square, F-statistics and p-values. Under Year 1, R-square is 0.000, indicating readability level could not explain any variation in the mean of Year 1 performance. In other words, readability cannot explain changes in Year 1 performance. However, gender and age could explain variations in the mean of Year 1 performance by 6.4 percent. The anova results (F-statistic and p-value) for both independent variable (readability) and control variables (gender and age) are not significant, indicating that the regression model could not predict Year 1 performance.

With regard to Year 2, the R-square is 0.027, meaning that readability could only explain variation in the mean of Year 2 by 3 percent, whereas gender and age could explain variation in the mean of Year 2 by 4.8 percent. The anova results are also not significant, meaning that the regression model could not predict Year 2 performance.

For Year 3, the R-square is 0.059, suggesting that readability could explain changes in the mean of Year 3 by 5.9 percent compared to the R-square of gender and age which could explain 10.6 percent of variations in the mean of Year 3 performance. The anova results for both independent variable and control variables are significant, implying that the regression model is good to significantly predicts changes in Year 3 performance.

In terms of the overall performance, the R-square is 0.033, meaning that readability could only explain 3.3 percent of variations in the mean of the overall performance. Since the anova results are not significant, it can be concluded that the regression model could not predict overall performance.

From Table 4.43, it can be seen the beta coefficients in step 1 for the 4 blocks are not significant except block 3 (which relates to Year 3). It means that readability could not predict Year 1 to 2 performance, and overall performance of the students. However, readability could predict the performance of Year 3 students by -0.243. It follows that should readability level be increased by 1 unit, there will be a corresponding decrease in performance of Year 3 students by -0.243. Therefore, it is important to note the readability does not have predictive effect on Year 1, Year 2 and overall performance of the students. Nonetheless, readability negatively and significantly predicts Year 3 performance.

In step 2, the researcher added gender and age as control variables to test whether gender of students and their respective age could influence their performance. It can be observed from Table 4.43 that except block 2, gender significantly predicts Year 1 performance and Year 3 performance by 0.23 and 0.195, respectively. Using a scale of 1 and 0, where 1 represents females. The findings imply that being a female in Year 1 or Year 3, one is more likely to perform better than one's male counterparts. It could also mean that female students read and understand comprehension passages better than male students. Relative to age, using an average age of 16 – 18 years, the findings suggest that students within this age group easily read and understand passages in their English language textbooks than those in other age categories.

4.6 Conclusion

The above findings are consistent with prior literatures which establish that other factors could significantly influence performance of students other than readability. For instance, after investigating whether adopting a more readable textbook can have a positive impact on students' performance in an online introductory corporate finance class, Peng (2015) revealed that student's age, student's major programme, students' bachelor's degree obtained, and the number of students' working hours appear to significantly affect students' performance.

The current findings also support Spinks and Wells (1993) who revealed that readability has an inverse relationship between student performance and the texts they read. Furthermore, the present findings agree with Wissing *et al.* (2016), who found contradiction between students' performance and readability of texts. The present findings support Gyasi's (2017) finding that readability of text has insignificant relationship with comprehension, and to a large extent performance. However, the present findings contradict with Singer and Tuomi (2003), who asserted that one of the major factors that accounts for the underperformance of learners at the pre-tertiary level is the difficult nature of most textbooks.

Table 4. 43: Regression Results for Performance

			Standardized betas							
			Model 1		Model 2					
Block	**Step**	**Predictor**	***B***	***t***	***B***	***t***	R^2	ΔR^2	***F***	***P***
Year1	1	Readability	-0.007	-0.06	0.004	0.04	0.000	-0.014	0.003	0.955
	2	Gender			0.230	1.97*	0.064	0.024	1.617	0.193
		Age			0.072	0.61	0.064	0.024	1.617	0.193
Year2	1	Readability	-0.164	-1.42	-0.179	-1.52	0.027	0.014	2.021	0.159
	2	Gender			0.135	1.15	0.048	0.008	1.201	0.316
		Age			-0.047	-0.41	0.048	0.008	1.201	0.316
Year3	1	Readability	-0.243	-2.14**	-0.250	-2.19**	0.059	0.046	4.574	0.036
	2	Gender			0.195	1.67*	0.106	0.068	2.802	0.046
		Age			0.151	1.30	0.106	0.068	2.802	0.046
OP	1	Readability	-0.183	-1.59			0.033	0.020	2.519	0.117

Note: **p<0.05 and *p<0.10; OP = Overall Performance

Source: ***Field data, 2020***

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter is the final chapter of this research. It presents the summary of the findings, conclusions of the study, recommendations based on the findings, suggestions for future research and limitations of the study. Readability of English language textbooks has attracted the attention of researchers and practitioners for decades. This has led to development of scientific formulas to determine readability of English language texts. In Ghana, a number of studies have been conducted on readability of textbooks. However, those studies did not focus on supplementary English Language textbooks used by SHS students in the private schools. While some concentrated on prescribed English language textbooks at the JHS level (Owu-Ewie, 2014), others focused on readability of articles at the college of education (Gyasi, 2017). Thus, the present research examined readability level of non-prescribed supplementary English Language textbooks in private SHSs within the Adentan Municipal Education Directorate. The study also assessed the age appropriateness of the textbooks and established the statistical relationship between readability levels and performance of students. In this vein, the study sought to find answers to the following questions:

1. What are the readability levels of selected passages of non-prescribed supplementary English language textbooks used by private SHS students in the Adentan Municipality?
2. Which scientific criteria are used by the authorities of private SHSs to select non-prescribed supplementary English language textbooks for their students?
3. To what extent are the officials of GES-Adenta aware of the use of non-prescribed supplementary English language textbooks by private SHSs in Adenta?
4. What measures have been put in place by NaCCA to ensure the usage of suitable and prescribed supplementary English language textbooks at the SHS level?
5. What is the relationship between readability levels of non-prescribed supplementary English language textbooks and performance of SHS students in English language?

The study adopted the mixed method approach. Specifically, the concurrent nested approach was used where the quantitative data was collected first and subsequently the qualitative data was collected to complement the quantitative data. Using a homogenous purposive sampling technique and the convenience sampling technique, sixteen (16) respondents (a NaCCA Curriculum Officer for Languages, 4 head teachers, 2 assistant head teachers and 5 English teachers across the five selected schools, and 3 GES staff) were interviewed based on a semi-structured interview guide. In addition, a comprehension tests were administered to 492 sampled students (SHS 1-3) from five selected schools and the data was subjected to a descriptive statistical analysis using SPSS version 21. Also, all comprehension passages (91) from four non-prescribed supplementary English Language textbooks were subjected to seven readability measures to determine their readability levels and age appropriateness to SHS students of the three levels (SHS 1-3). Thus, the quantitative data was obtained using the scores from the comprehension tests and the readability tests. The major findings are discussed below in relation with the research questions sequentially arranged.

5.1 Summary of findings

A summary of the major findings with reference to existing literature as discussed in Chapter Two of this study is presented in this section. Most of the literature discussed in the study confirmed the findings of this study although some have opposing views. Below is the report on the findings:

5.1.1 What are the readability levels of selected passages of non-prescribed supplementary English Language textbooks used by private SHS students in the Adentan Municipality?

As explained earlier, ninety-one comprehension passages were subjected to seven readability formulas to test the readability levels of passages in four non-prescribed supplementary English Language textbooks used by private SHS students. The results revealed that 22 passages out of 39 passages in Book 1-Aki-Ola Series are difficult to read while 17 are easy to read based on the Gunning Fog Index test (Fig.4.3 & Fig.4.4). Most (22) of these passages were equally found to be above the age of the students while a few (17) are relatively below their age. Based on the FRE

readability results for Book 2- Global/Approacher's Series most of the passages (representing 44.4 percent) as shown in table 4.10 are suitable for JHS 2 and JHS 3 students, whose age should be between 13 and 15 years yet these passages are given to SHS students instead. GFOG readability results also reveals that 25 passages in book 2 (representing 69.4 percent) are hard to read and 11 passages (representing 30.6) are fairly easy to read.

This implies that the passages are difficult for the SHS students to read and understand. In terms of the age appropriateness, the results indicate that most of the passages in book 2 are suitable for college level students, whose age should be between 18 – 22 years.

On the other hand, 30.6 percent of the passages were found to be easy to read for students within 12 – 13 years, who should be in JHS 1. Thus, according to GFOG readability formula, none of the passages in book 2 meet the readability standard of SHS students. The results for Book 3 indicate that 2 passages are difficult to read, whereas 4 passages are fairly easy to read. None of the passages meet the readability level of SHS students. As reported in table 4.20, two (2) out of the 6 passages are above the readability level of SHS students while 4 passages are easy to read for JHS 1 students, who should fall within 12 – 13 years.

Finally, the results for book 4 as shown in table 4.29 reveals that seven (7) out of the 10 passages tested are difficult to read, 2 passages are fairly easy to read, and 1 passage easy to read. The age appropriateness for these passages have thus been explained in percentage as follows: 70 percent of the passages are easy to read by college level students within ages 18 – 22 years; 20 percent is easy to comprehend by students within ages 12 – 13 years in JHS 1; and 10 percent is suitable for students within 10 – 12 years in Primary 5 – 6.

This means that none of the passages meet the readability level of SHS students. Since majority of the passages are suitable for college level students, SHS students are likely to find most of the passages difficult to read and understand. While some passages in the four selected non-prescribed supplementary English Language textbooks are above SHS students' readability level, majority of the passages across

the four textbooks are far below the readability standard of SHS students. The average readability level analysis revealed that all the four textbooks are rather suitable for 8th – 9th grade level students that is JHS 2 and JHS 3.

The results of this study support findings by some researchers who discovered that some textbooks were written in language that was too difficult for students to understand (Kasule, 2011; Gyasi, 2013, 2017 & 2018; Owu-Ewie, 2014; Sibanda, 2014; Essuman & Osei-Poku, 2015; Okonkwo, 2016). This is because the texts are often higher than the age and grade levels of the targeted students. The readability test revealed that the texts being used by the SHS students are rather suitable for JHS1-3 students. While some of the comprehension passages are above the age and grade levels of the SHS students, most of them are far below their age and grade levels. These findings confirm the second assumption of this study.

Age appropriateness however is a crucial factor in determining the suitability of reading materials for students (Peng, 2015). As emphasised by Fatirwati and Syarif (2017), a text that is above the age of learners tends to be very difficult to read and understand. This stresses readers while a too easy text does not challenge readers' abilities. Some literatures also support the views by Fatirwati and Syarif that if the text is beyond the level of the readers, they become frustrated and feel discouraged to read the text (Kasule, 2011; Mattoo, 2012; Tasaufy, 2017; Westwood & Holliday, 2019).

5.1.2 Which scientific criteria are used by the authorities of private SHSs to select non-prescribed supplementary English language textbooks for their students?

It was revealed by authorities of private SHSs that supplementary English Language textbooks and textbooks in general are purchased for students' use based on the following reasons; the cost of the textbooks, how popular the book and author are will promote easy and faster sale of the books to students, how much profit can be made from the sale of the books to pay teacher's salaries and utility bills and the number of past questions answered in the textbook. This was confirmed by the three education officers interviewed. It was also found that, no scientific and specific criteria was used by the private SHSs to determine the age appropriateness of the

textbooks prior to their purchase and use. This was also confirmed by the three respondents from Adenta Education Office.

Lastly, it was revealed by the authorities in private SHSs and confirmed by the three education officers in their interview that readability formulas were not used as criteria for determining the suitability of textbooks prior to their purchase and use. None of the private school participants knew about readability formulas and their uses. Two of the respondents from the Adentan Education Office also did not know about readability formulas except the SHSC who said she had heard about it but had no knowledge on its usage. This confirms the first assumption of this study that the criteria used by NaCCA officials and private school authorities to select and prescribe textbooks may not be scientific.

5.1.3 To what extent are the officials of GES-Adenta aware of the use of non-prescribed supplementary English language textbooks by private SHSs in Adenta?

The study gathered qualitative data through semi-structured interviews conducted for twelve (12) participants sampled from five selected private SHSs and three education officers who were purposely selected from the Adentan Municipal Education Office. The participants responded to questions regarding the selection and usage of non-prescribed supplementary English Language textbooks in private SHSs in Adentan.

The responses from the English language teachers, headteachers and their assistants revealed that officers from GES do not monitor the selection and use of non-prescribed supplementary English Language textbooks in private schools despite the fact that they are aware of its use and it is their responsibility to monitor the process. As explained by the participants, English teachers, headteachers and management staff of private schools select their own supplementary English readers without using any standard criteria. This information gathered from participants of the private SHSs were confirmed by the three education officers in their responses to same questions during their interview session. They admitted that they are aware of the usage of non-prescribed supplementary English Language textbooks by private SHSs but measures have not been put in place by NaCCA to curb this practice.

They also revealed that NaCCA is responsible for forming the policies but they are expected to supervise its implementation in the schools.

5.1.4 What measures have been put in place by NaCCA to ensure the usage of suitable and prescribed supplementary English language textbooks at the SHS level?

The Curriculum Officer for Languages (which is labeled as COL) at NaCCA was interviewed and her responses revealed that NaCCA is mandated to prescribe all instructional resources including textbooks for use at the pre-tertiary level in Ghana but measures have not been put in place to ensure its usage by schools, especially private schools. The respondent also disclosed that NaCCA only prescribes the textbooks. It does not select the textbooks nor provide any criteria to the schools for the selection. However, the prescribed list of textbooks for all subjects at the pre-tertiary institutions are published on NaCCA website. It was also discovered that though NaCCA is aware of the readability formulas, it does not include it on its assessment tool (Assessment Form A- see appendix 17) used for determining the suitability of textbooks. Finally, it was found that the Assessment Form A used by NaCCA is not scientific and this finding confirms the first assumption of this study.

5.1.5 What is the relationship between readability levels of non-prescribed supplementary English language textbooks and performance of SHS students in English language?

The assessment of the performance level of students through a comprehension test indicated that the performances of the students across the 3 years are very low. However, comparatively, Year 2 students performed better than Year 1 and Year 3. In addition, the correlation analysis established that readability has only significant negative relationship with Year 3 performance. Subsequently, the regression analysis revealed that readability could only predict the performance of Year 3 students. Thus, readability could not predict the overall performance of SHS students based on the comprehension tests.

This suggest that there are other factors other than readability that influence students' comprehension and performance. This confirms the third assumption of this study that the relationship between readability and students' level of

comprehension and performance may not be significant. It again confirms the results of the qualitative data of this study where the Adentan Education Officers and the private SHS respondents explained that the following are some reasons that account for performances in the private SHSs: students with low grades and low learning abilities, unqualified teachers, lack of motivation, student workers among many others. The above findings are equally consistent with earlier findings in readability studies that established the fact that other factors could significantly influence performance of students other than readability (Springs & Wells, 1993; Peng, 2015; Wissing et al.,2016; Gyasi, 2017)

5.2 Limitations of the Study

This study investigated the readability levels of non-prescribed supplementary English Language textbooks used by private SHS students using seven readability formulas.

Although, 10 private SHS were targeted for this study in Adenta Municipal Education Directorate, only 5 private SHS could be used. This is because three of the schools have folded up as a result of the negative impact of the free Senior High School policy implementation on their enrolment while the remaining two use international curriculum where the practice is different and the information needed to enrich this study may not be obtained. Two of the private school respondents declined the request to be interviewed for personal reasons they did not disclose.

In addition, the COVID-19 pandemic restricted the conduct of face-to-face interviews in some cases hence the use of google meet and zoom meetings as well as teleconferences were the main medium of engagements between the researcher and the respondents. This came with several interruptions as a result of network instability.

5.3 Conclusions of the Study

This study assessed the readability levels of passages of non-prescribed supplementary English language textbooks used by students of private SHS to determine their suitability for grade levels and age. Seven readability formulas were

used to determine the readability of ninety-one (91) passages selected from four non-prescribed supplementary English Language textbooks used by the students.

The results of the study showed that the textbooks are either higher than the grade levels and age of the students or relatively lower than their grade levels. In other words, the non-prescribed supplementary English Language textbooks were either difficult to comprehend by students or too low for their grade levels. In either case, students would be affected negatively because they either get frustrated and lose interest in the text as a result of its difficult nature or they are not challenged by the text due to its low readability level.

The results further suggest that authorities of private SHS and NaCCA do not use any scientific tool to determine the appropriateness of textbooks prior to its selection for their students. Referring to the results of the interviews conducted, majority of the school authorities and GES-Monitoring and supervision staff are not familiar with readability formulas hence the non-usage of the formulas.

Based on the findings of the study, it could be concluded that most of the passages of non-prescribed supplementary English Language textbooks used by private SHS students are not suitable for the various grade levels of students in terms of readability.

5.4 Recommendations

Based on the research findings, it is recommended that educators especially in the private schools select passages suitable for their students or select appropriate text that match the grade level and age of their students.

Moreover, it will be useful for NaCCA to include scientific formulas on their assessment tool for determining the suitability of textbook for pre-tertiary institutions.

To achieve better results, NaCCA should publish its criteria for assessing books in addition to prescribed booklist on their website for the perusal of private school authorities and GES Monitoring and Supervision officers.

To ensure effective implementation of the prescribed booklist from NaCCA, stringent measures must be put in place by GES Council and NaCCA on the purchase and use of textbooks in all pre-tertiary institutions (public and private).

Furthermore, NaCCA should collaborate with the District Education Offices to enforce the use of prescribed textbooks in all pre-tertiary institutions especially private schools.

It is essential that authors, editors and publishers of textbooks write text that is accessible to their target audience. To promote this culture, educational seminars and training workshops should be organised regularly for all stakeholders of pre-tertiary education to boost their knowledge in textbook evaluation and selection.

In addition, GES staff, proprietors, headteachers and their deputies, and teachers of English Language in particular, should be exposed to the concept of readability and the benefits of using readability formulas to ascertain the suitability of text prior to its selection and approval for use by their students.

This study was limited to only non-prescribed supplementary English Language textbooks used by private SHS. It is suggested that future researches should be conducted on the readability of non-prescribed English Language textbooks used by students of private Junior High Schools and other pre-tertiary institutions.

5.5 Conclusion

In conclusion, this study contributes to knowledge in the field of English Language teaching and learning, in particular, the readability of textbooks in private institutions. As private schools continue to play prominent roles in providing education to complement that of the nation's education, the Ministry of Education in collaboration with NaCCA, must ensure continuous monitoring of textbook selection and usage.

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APPENDICES

Appendix 1: Ethics Clearance

ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Mrs VE Fordjour

STUDENT NO:
18022912

PROJECT TITLE: Readability index assessment of non-approved English language textbooks in selected Ghanaian private senior high schools.

PROJECT NO: SHSS/20/ENG/02/2407

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr LMP Mulaudzi	University of Venda	Promoter
Prof EK Klu	University of Venda	Co - Promoter
Prof GSK Adika	University of Ghana	Co - Promoter
Mrs VE Fordjour	University of Venda	Investigator – Student

Type: **Doctoral Research**
Risk: **Minimal risk to humans, animals or environment**
Approval Period: **July 2020 – July 2023**

The Research Ethics Social Sciences Committee (RESSC) hereby approves your project as indicated above.

General Conditions
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following.

- The project leader (principal investigator) must report in the prescribed format to the REC:
  - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project
  - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
  - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, .the project leader must apply for approval of these changes at the REC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date; a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
  - Request access to any information or data at any time during the course or after completion of the project,
  - To ask further questions; Seek additional information; Require further modification or monitor the conduct of your research or the informed consent process.
  - withdraw or postpone approval if:
  - Any unethical principles or practices of the project are revealed or suspected.
  - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
  - The required annual report and reporting of adverse events was not done timely and accurately,
  - New institutional rules, national legislation or international conventions deem it necessary

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE
Date Considered: July 2020

Name of the RESSC Chairperson of the Committee: Mashau Takalani Samuel

Signature:

Director Research and Innovation

Signature: .....

UNIVERSITY OF VENDA
OFFICE OF THE DIRECTOR
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"A quality driven financially sustainable, rural-based Comprehensive University"

Appendix 2: Evidence of proofreading of thesis

Ref. No.: LC/FL02 2021

22nd February, 2021.

TO WHOM IT MAY CONCERN:

Evidence of Proofreading of Thesis

Mrs. Vera Esenam Fordjour (ID:18022912)

Upon proofreading the thesis entitled "**READABILITY INDEX ANALYSIS OF NON-PRESCRIBED SUPPLEMENTARY ENGLISH LANGUAGE TEXTBOOKS IN SELECTED GHANAIAN PRIVATE SENIOR HIGH SCHOOLS**", I certify that the editorial team meticulously paid detailed attention to the entire language and ensured grammatical and mechanical errors identified have been taken care of.

Yours faithfully,

Dr. Mohammed Sadat, **BA. (English and Linguistics); MPhil (Linguistics); Ph.D (TESL)**

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Appendix 3: Participant Information Sheet

I am Vera Esenam Fordjour, a doctoral student of the Department of English, University of Venda, South Africa. I am conducting a research on the topic, 'Readability Assessment of Non-prescribed Supplementary English Language Textbooks in Selected Ghanaian Private Senior High Schools'. This study aims at analysing the criteria used to select non-prescribed supplementary English Language textbooks; the readability levels of such textbooks; and the relationship between readability and performance. Kindly permit me to interview you and record the interview as your views would be very helpful in this research and also, in the selection of English language textbooks for your school.

You will have to fill-in a consent form if you agree to participate in this study. You are assured that information provided would be kept confidential. You will also remain anonymous in all verbal and written records and reports.

For further information, contact me either in person or through:
Phone number: +233 244 75 46 14
E-mail address: vera.e-fordjour@upsa.edu.gh

Thank you

Appendix 4: Participant Information Sheet For Nacca Personnel

I am Vera Esenam Fordjour, a doctoral student of the Department of English, University of Venda, South Africa. I am conducting a research on the topic, 'Readability Index Assessment of non-prescribed Supplementary English Language Textbooks in Selected Ghanaian Private Senior High Schools'. My study uses the mixed method approach and the concurrent nested design. This project aims at analysing the criteria used to select textbooks; the readability levels of such textbooks; and the relationship between readability and performance.

As the Curriculum Officer for Languages of NaCCA, and with regard to your role in the selection of English language textbooks for basic and second cycle institutions, it has become imperative that you are interviewed as your views would be very helpful in this research.

You will have to fill-in a consent form if you agree to participate in this study. You are assured that information provided would be kept confidential. You will, as well, remain anonymous in all verbal and written records and reports.

For further information, contact me either in person or through:

Phone number: +233 244 75 46 14

E-mail address: vera.e-fordjour@upsa.edu.gh

Thank you!

Appendix 5: Informed Consent Form – (Guardians/Parents Of SHS Students Under 18 Years)

I have read the participant information sheet, and the nature and purpose of the study has been explained to me by Mrs Vera Esenam Fordjour, a doctoral student of the University of Venda, South Africa.

I agree that my ward's views and contributions as a participant are paramount to the success of this study.

I also agree that s/he takes the test given in all sincerity, on conditions that information provided will be treated as confidential and used for research purposes only.

To facilitate the study, I shall ensure that s/he is available for all activities and likewise, give information voluntarily.

I understand that while the information gained during the study may be published, s/he will not be identified anywhere in the study through his or her real names and that s/he can withdraw from the study without penalty.

Signature of parent……
Name of parent……

Signature of student participant……
Name of student participant……
Date……

For further information, please contact:
Vera Esenam Fordjour
Tel.: +233 244 75 46 14
E-mail: vera.e-fordjour@upsa.edu.gh

Appendix 6: Informed Consent Form For Participants of the Study

I have read the participant information sheet, and the nature and purpose of the study has been explained to me by Mrs. Vera Esenam Fordjour, a doctoral student of the University of Venda, South Africa.

I also understand that as a participant of this study, my views and contributions are paramount to the success of this study.

In this regard, I agree to respond to all questions asked me in all sincerity, on conditions that information provided will be treated as confidential and used for research purposes only.

To facilitate the study, I shall be available for all activities and likewise, give information voluntarily. I understand that while the information gained during the study may be published, I will not be identified anywhere in the study through my real names and that I can withdraw from the study without penalty.

Signature of the participant……..
Name of the participant……..
Status of participant……
Name of District/School……
Date……

For further information, please contact:
Vera Esenam Fordjour
Tel.: +233 244 75 46 14
E-mail: vera.e-fordjour@upsa.edu.gh

Appendix 7: Informed Consent Form – (Headteachers On Behalf Of Students Under 18 Years)

I have read the participant information sheet, and the nature and purpose of the study has been explained to me by Mrs Vera Esenam Fordjour, a doctoral student of the University of Venda, South Africa.

I agree that my students' views and contributions as participants are paramount to the success of this study.

I also agree that they take the test given in all sincerity, on conditions that information provided will be treated as confidential and used for research purposes only.

To facilitate the study, I shall ensure that they are available for all activities and likewise, give information voluntarily.

I understand that while the information gained during the study may be published, they will not be identified anywhere in the study through their real names and that they can withdraw from the study without penalty.

Signature of headteacher……
Name of headteacher……
Name of school……..
Date……...

For further information, please contact:
Vera Esenam Fordjour
Tel.: +233 244 75 46 14
E-mail: vera.e-fordjour@upsa.edu.gh

Appendix 8: Questions / Marking Scheme For Comprehension Tst For SHS Three

SENIOR HIGH SCHOOL 3

DURATION: 40 Minutes

Read the following passage carefully and answer the questions on it.

One would expect a teacher to command respect from the children of a small town. But when this teacher walked the aisles of our supermarket, even the mothers stopped their idling and tended their business. If the truth were known, our mothers probably had felt the whack of Mrs. Frost's on many occasions.

If it's possible for one woman to **mould** the character of a whole town, then surely, Mrs. Frost did. No one left her Primary six (6) class sketchy on mathematics or sentence construction. Likewise, she left no question on our minds as to the meaning of **honesty**, **charity** or other virtues we were inclined to misinterpret. And if we didn't get the message from Monday to Friday, she also taught our Sunday school class as she was a missionary.

My day of reckoning came early in the year. We sat for a class test. She took her seat behind a desk. While we were seated, she **immersed** herself in a poetry book, grinning while she read.

I was only halfway down the first page and gearing up for good performance when my friend Elizabeth shoved a piece of paper into my hands. A quick glance at the desk confirmed that the transaction had gone unnoticed. Carefully, I unfolded the paper.

My eyes read the scrawling and my blood ran cold. The secret note contained answers to the test. **My heart throbbing in my fingertips**. I began writing my test. Elizabeth and I were the first to finish and sat quietly until the bell rang.

The longest weekend in my life followed. On Friday night I woke up with the ultimate nightmare. I couldn't sleep. I saw her face in all my dreams. I decided that the safest choice of a sinner was to stay awake. Not wanting to be miserable alone, I crept out of the window to Elizabeth's house where I found her in much the same condition.

Things got **steadily** worse. On Saturday morning Mrs. Frost phoned to ask me to help with her Sunday school lesson. The next day, Elizabeth received an assignment from Mrs. Frost to read a scripture lesson on 'honesty' for the Sunday school class. Thus, our plans to ditch Sunday school were **thwarted** so there we sat, fact-to-face with our would-be-accuser.

Everybody cheered when the bell rang on Monday afternoon, signaling freedom, but the sound held **dread** for the two of us. The room cleared and we were alone. Mrs. Frost and the sinners, Elizabeth and I. "We cheated on the test", I blurted out, "We felt very bad, we're so sorry, we'll never do anything like that again for the rest of our lives, if we're allowed to live the rest of …." Elizabeth stepped on my foot. "Please forgive us"! She said.

Mrs. Frost was slow to answer. Finally, she said: "I am glad you came to me, girls. That took courage and shows a great deal of integrity. But you have made a **sad mistake** and must suffer the consequences."

Questions

a) For each of the following words underlined in the passage, give another word or phrase that means the same and which can replace it in the passage:

(i) mould; to shape, transform, nurture, form, create, make, etc. 1 Mark

(ii) immersed; engrossed, absorbed, wrapped up, etc. 1 Mark

(iii) steadily; firmly, progressively, increasingly, little by little, regularly, etc. 1 Mark

(iv) thwarted; to prevent, to frustrate, to cause to fail, etc. 1 Mark

(v) Dread; dismay, fright, terror, fear, anxiety, etc. 1 Mark

b) Give two reasons why Mrs. Frost commanded respect in the whole town.

1. Mrs Frost enforced discipline among the people of her town. 2 Marks
2. She is disciplined and inculcated same in her students. 2 Marks

c) How did the two friends feel after the offence?

They felt miserable, ashamed, guilty, and afraid to meet Mrs Frost. 2 Marks

d) Give two reasons for your answer.

1. Elizabeth and her friend had nightmares and couldn't sleep as a result of cheating. 1 Mark
2. Paragraphs 6 and 7 explains how they felt after the offence. 1 Mark

e) Mention, in your words, two events that worsened their plight during the weekend.

1. When Mrs. Frost asked the writer to help with her Sunday school lesson. 2 Marks

2. When Mrs. Frost assigned Elizabeth to read a scripture lesson on 'honesty' for the Sunday school class. 2 Marks

f) ….. a sad mistake

(i) What is the grammatical name given to this construction?

Ans. It is a Noun Phrase. 1 Mark

(ii) What is its function?

It functions as the object of the sentence laying emphasis on the offence committed by the writer and her friend, Elizabeth. 1 Mark

g) … My heart throbbing in my fingertips.

What figure of speech is illustrated by the above expression?

…… 1 Mark

Total – 20 Marks

QUESTIONS / MARKING SCHEME FOR COMPREHENSION TEST FOR SHS TWO

SENIOR HIGH SCHOOL 2

DURATION: 45 Minutes

Read the following passage carefully and answer the questions on it.

We are interested in the various kinds of injury that can occur in road traffic accidents, how to prevent them and their first aid management. Most of us have probably witnessed one form of road traffic accident or another. The universal reaction of eye-witnesses is panic as they rush to the scene and stand there looking in dismay. Road traffic accidents are great crowd-pullers as everyone wants to stop and have a look. However, the three most useful things you can do if you are at the scene of road traffic accident are to assist in the rescue of the trapped victims; to render first aid treatment to victims; and to help in conveying injured people to the nearest hospital.

Road traffic accidents have a great potential for causing injury to the human body. The high velocity at which the motor vehicle is travelling, the sudden deceleration on impact and the hard rigid nature of the motor-car body, all contribute to increase the potentials of injury. Probably, the most risk-laden road traffic accidents are those which involve motor-cyclists as they do not have a solid motor-car body to protect them from the direct impact of an oncoming vehicle on the road. Road traffic accidents involving motor-cyclists are the cause of high mortality as they do not have a solid motor-car body to protect them from the direct impact of an oncoming vehicle on the road.

Road traffic accidents involving cars and their passengers can cause some serious problems as the wreckage of the car may trap some people inside. This may mean that the crumpled car body needs-to be cut away before the victims can be saved. If the road accident results in a fire, then this can be disastrous as the fire will prevent rescuers from coming near, thus resulting in the quick demise of the victims from burns. This is why every car-driver must possess a fire extinguisher in his vehicle. This little device may save lives in some situations.

Questions

(a) What, according to the writer, do eye-witnesses usually do as soon as an accident occurs?

They rush to the scene out of terror and simply stare in shock. 2 Marks

(b) What three things does he suggest that eye-witnesses should do?

Sentence 1. Eye-witnesses should help to save the trapped victims. 1 Mark

Sentence 2. They should also administer first aid to the victims. 1 Mark

Sentence 3. Again, eye-witnesses should also assist in transporting wounded people to the closest hospital. 1 Mark

(c) Mention two of the factors that can increase injuries during accidents.

Award mark for any two of the factors given below:

1. The high speed at which the car was travelling. 1 Mark
2. The sudden deceleration on impact. 1 Mark
3. The hard rigid nature of the motor-car body. 1 Mark

(d) Why are motor-cyclists more at risk when accident occurs?

1. Motor-cyclists do not have a solid motor-car body to protect them from the direct impact of an oncoming vehicle on the road. 1 Mark

2. They also don't have a solid motor-car body to protect them from the direct impact of an oncoming vehicle on the road. 1 Mark

(e) Why does the writer suggest that every car-driver should have a fire extinguisher in his vehicle?

The fire extinguisher will help save lives on the road and prevent instant death. 2 Marks

(f) "If the road accident results in a fire …"

(i) What is the grammatical name given to the above expression?

It is a Conditional Clause. 1 Mark

(ii) What is its function in the passage?

It functions as the subject of the sentence explaining how disastrous accidents that result in fire outbreak can be. 2 Marks

(g) For each of the following words, find another word or phrase that means the same and can replace it as it is used in the passage:

(i) Universal; worldwide, usual, widespread, vast, etc. 1 Mark
(ii) Conveying; taking, carrying, transporting, etc. 1 Mark
(iii) Velocity; speed, swiftness, rapidity, quickness, rate of speed, etc. 1 Mark
(iv) Potentials; capabilities, possibilities, abilities, etc. 1 Mark
(v) Disastrous; dreadful, tragic, frightful, catastrophic, devastating, calamitous, etc.

1 Mark

Total- 20 Marks

QUESTIONS / MARKING SCHEME FOR COMPREHENSION TEST FOR SHS ONE

SENIOR HIGH SCHOOL 1

DURATION: 1 Hour

Read the following passage carefully and answer the questions on it.

The finest asset any child can have is a happy home. Such environment will enable him to develop strength and stability of character, thereby teaching him to face the future without fear or undue anxiety. It also will give him something worthwhile to live for. If he exhibits good judgment in later years, much of the credit must go to those who trained him. If he fails, it may have been due to troubles in his home, his school or unsympathetic and hostile relatives.

A great percentage of juvenile problems can be traced to faulty home education and unwholesome influences in early childhood. Undoubtedly, there would be fewer juvenile delinquents if there were more homes where children learned to love and respect their fellow men.

Remember this: happy parents create happy homes; happy home produce happy children; happy children make happy communities and happy communities make a happier world.

Questions

(a) Give one word that could replace each of the following in the passage:

(i) asset; property, valuables , possessions, belongings, etc. 1 Mark

(ii) stability; consistency, steadiness, firmness, permanency, immovability, solidity, etc

1 Mark

(iii) worthwhile; useful, worthy, valuable, significant, important, relevant, etc.

1 Mark

(iv) exhibits; demonstrates, shows, displays, etc. 1 Mark

(v) hostile; aggressive, unfriendly, antagonistic,.. 1 Mark

(vi) unwholesome; unfavorable, unhealthful, unsound, repulsive, offensive,…

(b) State in three sentences, three reasons given by the writer to support his view that a happy home is the finest asset any child can have.

Sentence 1. To enable him develop strength and stability of character. 2 Marks

Sentence 2. Teach him to face the future without fear or undue anxiety. 2 Marks

Sentence 3. It will give him something worthwhile to live for. 2 Marks

(c) What does the writer mean by:

(i) undue anxiety- unpleasant state of mental uneasiness, nervous, apprehension, obsession, distressing desire, restlessness, agitation, etc, 2 Marks

(ii) juvenile delinquents? a persistent young offender, anti-social minor, juvenile offender, etc, 2 Marks

(d) Give, from the passage, one:

(i) abstract noun which means honour or praise; compliment, applaud, commend, acclaim, recommend, etc. 1 Mark

(ii) adverb which means certainly; undoubtedly, absolutely, doubtlessly, indisputably, surely, unquestionably, etc. 1 Mark

(iii) verb which means make or produce; create, construct, form, compose, build, etc

1 Mark

(e) In one sentence, state why you think the author used the word happy many times in the last paragraph.

Answer- To lay emphasis on what the finest asset means to a child. 2 Marks

Total- 20 Marks

Appendix 9a: Interview Schedule- Staff of Private Senior High Schools

Thank you for agreeing to take part in this study. My name is Vera Esenam Fordjour, a doctoral student of the University of Venda, South Africa, specializing in English Language. The project aims to analyze the criteria used to select the textbooks; the readability levels of such textbooks; and the relationship between readability and performance. This interview seeks to obtain information from teachers of English Language about the kinds of English Language textbooks they select for their students. You are invited to respond to this interview, as your views would be very helpful in this research and they would also help in your decision to select English Language textbooks for your school. I would like to assure you that information provided would be kept confidential.

BIO DATA

1. Name of School:
2. Gender: Male [ ] Female [ ]
3. Your status: Head [ ] Asst. Head [ ] English Teacher [ ]
4. Class Taught: SHS 1 [ ] SHS 2 [ ] SHS 3 [ ]
5. Educational background: Secondary [ ] Tertiary [ ] Others [ ]
6. Programme of study:

1. Who is responsible for selecting English language textbooks in your school?

   Are the books you use prescribed by NaCCA or GES-Adenta?

   a. Do you use the same books used by public SHS?

2. Is GES-Adenta aware of the English language textbooks you select and use in your school?

3. a. If Yes, were you given some criteria by GES-Adenta to follow in selecting English language textbooks for your students?

   b. If No what criteria do you use in selecting English language textbooks for your students?

4. a. Do you have any idea about readability formulas? YES [ ] NO [ ]
   b. If Yes, kindly explain what they are.
   c. Do you use readability formulas as tools to aid the selection of your English textbooks?
   d. Explain how you use readability tools to select your English language textbooks?

5. Do the criteria your school uses to select English language textbooks meet the relevance and demand for the curriculum?

6. How does the content of your textbook serve as the foundation for learning across levels?

7. How does the quality of information in the English language textbook develop the reader intellectually, emotionally and socially?

8. Do you consider the way the author explains facts in the textbook as a criteria for selecting the textbook?

9. Does your English language textbook contain adequate practical tasks for students' practice?

10. Does the reading level of the textbook match the age and grade level of the learner? Briefly explain

11. Is the font size of the textbook appropriate for readers to see letters clearly and identify characters?

12. Is the language used by the author reader-friendly? Briefly explain

13. How is the information in the Facilitator Guide flexible and easy for use by the teacher?

14. How does the content of the textbook connect and relate to learners' environment?

15. Does the Facilitator Guide of the English language textbook contain applicable methods that aid teaching and learning? Briefly explain

Appendix 9b: Interview Schedule – National Council for Curriculum and Assessment (NaCCA)

Thank you for agreeing to take part in this study. My name is Vera Esenam Fordjour, a doctoral student of the University of Venda, South Africa, specialising in English Language. The project aims to analyse the criteria used to select the textbooks; the readability levels of such textbooks; and the relationship between readability and performance. This interview seeks to obtain information from you as the Curriculum Officer for Languages of NaCCA about the criteria used by your unit to approve English Language textbooks for Senior High Schools (SHS). You are invited to respond to this interview sincerely as your views would be very helpful in this research and also, they would help in your decision to approve English Language textbooks for SHS students. I would like to assure you that information provided would be kept confidential.

BIO DATA

Name and status of Interviewer

Position of Interviewee

Educational Background of Interviewee

Institution of Interviewee

Place of Interview

Date/Time of Interview

1. Are you aware as the Curriculum Officer for languages of NaCCA, that some private Senior High Schools (SHS) use non-prescribed supplementary English Language textbooks?

a. If yes, what measures has NaCCA put in place to ensure that private SHS select and use textbooks based on the readability levels and age appropriateness of learners?

b. If no, what administrative measures serve as a check on private SHS that use non-prescribed supplementary English Language textbooks, particularly those of English language?

2a. Does NaCCA use any criteria for the selection and approval of textbooks for use at the SHS level?

b. Which criteria does NaCCA use to determine the appropriateness and suitability of textbooks for learners before approval is given for its use at the SHS?

3. Has NaCCA introduced this criteria to private Senior High School operators for use?

a. If No, why?
b. If Yes does NaCCA educate and train private school operators on the use of the criteria for selecting textbooks for their schools?
c. How often is the training done?

4. How does NaCCA educate and train private school operators on the use of the criteria for selecting textbooks?

5. Are you aware of any scientific method of measuring the difficult nature of textbooks?

a. If yes, which type of scientific methods do you used?
b. If no, is the team aware of Readability Formulas?
c. If yes, what are Readability Formulas about?
d. How would you describe readability formulas as effective scientific tools for measuring textbooks?

6. Apart from the criteria used by NaCCA, how do the under listed criteria ensure easy comprehension of the texts in the textbooks?

a. Conformity to the syllabus in terms of:

i. Coverage of required topics
ii. Coverage of required skills
iii. Coverage of required syllabus concepts

b. Does content play a role in your decision to select and approve a textbook in terms of the:

i. Accuracy and currency of subject matter?
ii. Sufficiency of the content?
iii. Length of passages?

c. Methodology in terms of:

i. Sufficiency and relevance of exercises
ii. Encouragement of group and individual activities

d. Cultural relevance and gender sensitivity

i. Gender balance of content
ii. Representation of Ghana's diverse culture

e. Language and editorial quality

i. Accuracy and correctness of language use
ii. Language appropriacy for the age of learner and background of the learner

Appendix 10: Interview Schedule – Designated Staff of GES-Adenta

This interview seeks to obtain information from the Monitoring and Supervision team of the Ghana Education Service, Adentan concerning their awareness of the use of non-prescribed supplementary English Language textbooks by some private Senior High Schools (SHS) in the Adentan Municipal Directorate of Accra - the capital city of Ghana. The project aims to analyse the criteria used to select the textbooks; the readability levels of such textbooks; and the relationship between readability and performance. You are invited to respond to this interview sincerely, as your views would be very helpful in this research and they would help in your monitoring and supervision of the use of prescribed English Language textbooks in private Senior High Schools within your District. I would like to assure you that information provided would be kept confidential.

BIO DATA

2. Gender: Male [ ] Female [ ]
3. Educational background: Secondary [ ] Tertiary [ ] Others [ ]
4. Programme of study:
5. Status:
    a. English Language Co-ordinator [ ]
    b. SHS Coordinator [ ]
    c. Deputy Director of Supervision [ ]

Name / Status of Interviewer / Contact

Mrs Vera E. Fordjour Reasearcher 0244754614

Status of Interviewee

English Language Co-ordinator

Position of Interviewee

Academic Qualification of Interviewee

Institution of Interviewee

Place of Interview

Date/Time of Interview

Questions

1. Are you aware some private Senior High Schools (SHS) use non-prescribed supplementary English language textbooks?
2. If yes, what measures do you put in place to ensure that private schools select and use textbooks that are prescribed by NaCCA?
3. Does the monitoring and supervision team evaluate textbooks used by private SHS?
4. Are you aware of any scientific method of measuring the difficult nature of textbooks?
    a. If yes, which type of scientific methods do you use?
    b. If no, are you aware of Readability Formulas?
    c. If yes, what are Readability Formulas about?
5. How would you describe readability formulas as effective scientific tools for measuring textbooks?

    6a. Does National Council for Curriculum and Assessment (NaCCA) use readability formulas for measuring textbooks before approving their use by private SHS?
    b. If no, which criteria does NaCCA use?

6. Do the criteria NaCCA use, consider the level of difficulty of the textbook and its age appropriateness?

7. Do private SHS select textbooks for their students' use after assessing the books by using readability formulas?

8. Does NaCCA in collaboration with the District Education Offices ensure compliance with the usage of prescribed supplementary English language textbooks at the SHS level?

9. What measures are put in place by your office to ensure compliance with the usage of prescribed supplementary English language textbooks at the SHS level?

10. Has NaCCA made available the prescribed list of books to your office and the private schools within your municipality since the curriculum change began?

a) If Yes, which English language books have been prescribed by NaCCA for Senior High Schools?
b) If No, which English language books did the SHS use for the current academic year (2019/20)?
c) What informed their choice of books?

11) How does this affect the learning outcome of students at the private SHS?

a) Have you made any observations regarding the differences in performances of both public and private candidates at the BECE and WASSCE levels in your district?
b) What accounts for the differences in their performances in these external exams?

12) What measures are your education office putting in place to improve performances in both BECE and WASSCE whether in public or private senior high schools?

Appendix 11: Aki-Ola Series – Book 1 (Readability Test)

PASSAGE	Flesch Reading Ease score	Gunning Fog	Flesch-Kincaid Grade Level	The Coleman-Liau Index	The SMOG Index	Automated Readability Index	Linsear Write Formula	Readability Consensus	Total words	Average # of words per sentence	Total # of sentences	Total # of characters	Average # of characters per word
1	Text scale 72.8 (fairly easy to read)	Text scale 8.7 (fairly easy to read)	Scale: 6.6, Grade level – 7th grade	Scale- 8 Grade Level – 8th grade	Scale- 8 Grade Level – 8th grade	Scale- 6.2 Grade Level – 10-11 yrs. (5th & 6th Graders)	Scale- 7.5 Grade Level – 8th grade	**Grade Level:** 7 **Reading Level:** fairly easy to read. **Reader's Age:** 11-13 yrs. old (Sixth to Seventh graders)	499	14	35	2167	4.3
2	Text scale 84 (easy to read)	Text scale 7.2 (fairly easy to read)	Scale: 4.8, Grade Level – 5th grade	Scale - 6 Grade Level – 6th grade	Scale – 5.4 Grade Level – 5th grade	Scale - 4.2 Grade Level – 8-9 yrs. (4th & 6th Graders)	Scale – 6.3 Grade Level – 6th grade	**Grade Level:** 5 **Reading Level:** Easy to read. **Reader's Age:** 8-9 yrs. old (fourth to fifth graders)	470	13	36	1911	4.1
3	Text scale 57.4 (fairly difficult to read)	Text scale – 13.7 (Hard to read)	Scale: 10.7 Grade Level – 11th grade	Scale - 10 Grade Level – 10th grade	Scale -9.6 Grade Level – 10th grade	Scale - 11.4 Grade Level – 15-17 yrs. (10th & 11th Graders)	Scale – 13.6 Grade Level – college	**Grade Level:** 11 **Reading Level:** fairly difficult to read. **Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)	501	22	23	2332	4.7
4	Text scale 73.4 (fairly easy to read)	Text scale – 8 (fairly easy to read)	Scale: 5.7 Grade Level – 6th grade	Scale - 8 Grade Level – 8th grade	Scale – 6.3 Grade Level – 6th grade	Scale -4.6 Grade Level – 8-9 yrs. (4th & 5th Graders)	Scale – 5.4 Grade Level – fifth Grade	**Grade Level:** 6th **Reading Level:** fairly easy to read. **Reader's Age:** 10-11 yrs. old (Fifth to sixth graders)	413	11	39	1821	4.4

5	Text scale 64.8 (standard /average)	Text scale – 12.2 (Hard to read)	Scale: 9.2 Grade Level – 9th grade	Scale - 9 Grade Level – 9th grade	Scale -8.5 Grade Level – 9th grade	Scale – 9.7 Grade Level – 14-15 yrs. (9th & 10th Graders)	Scale – 12.1 Grade Level – 12 grade	**Grade Level:** 10 **Reading Level:** standard/ average **Reader's Age:** 14-15 yrs. old (Ninth to tenth graders)	318	20	16	1431	4.5
6	Text scale - 73.1 (fairly easy to read)	Text scale – 8.3 (Hard to read)	Scale: 6 Grade Level – 6th grade	Scale - 7 Grade Level – 7th grade	Scale -6.4 Grade Level – 6th grade	Scale -4.3 Grade Level – 8-9 yrs. (4th & 5th Graders)	Scale – 6 Grade Level – 6th grade	**Grade Level:** 6 **Reading Level:** fairly easy to read. **Reader's Age:** 10-11 yrs. old (Fifth to sixth graders)	234	12	20	988	4.2
7	Text scale 56.2 (fairly difficult to read)	Text scale – 12.6 (Hard to read)	Scale: 9.8 Grade Level – 10th grade	Scale - 10 Grade Level – 10th grade	Scale – 9.6 Grade Level – 10th grade	Scale -9.6 Grade Level – 14-15 yrs. (9th & 10th Graders)	Scale – 11.6 Grade Level – Twelfth Grade	**Grade Level:** 10th **Reading Level:** fairly difficult to read. **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	479	18	27	2269	4.7
8	Text scale 40.6 (difficult to read)	Text scale – 16.5 (difficult to read)	Scale: 12.7 Grade Level – college	Scale – 12 Grade Level – 12th grade	Scale – 12.3 Grade Level – 12th grade	Scale - 12.7 Grade Level – 18-19 yrs. (college level entry)	Scale – 14.9 Grade Level – college	**Grade Level:** 13th **Reading Level:** difficult to read. **Reader's Age:** 18-19 yrs. old (college level entry)	476	21	23	2408	5.1
9	Text scale 62.9 (standard /average)	Text scale – 9.7 (easy to read)	Scale: 8 Grade Level – 8th grade	Scale - 9 Grade Level – 9th grade	Scale -7.3 Grade Level – 7th grade	Scale – 7.3 Grade Level – 11-13 yrs.	Scale – 7.9 Grade Level – 8th grade	**Grade Level:** 8 **Reading Level:** standard/ average **Reader's Age:** 12-14	323	15	22	1464	4.5

						(6th & 7th Graders)		yrs. old (Seventh to Eighth graders)					
10	Text scale 54.6 (difficult to read)	Text scale – 12.7 (Hard to read)	Scale: 9.4 Grade Level – 9th grade	Scale - 11 Grade Level – 11th grade	Scale – 9.4 Grade Level – 9th grade	Scale – 8.9 Grade Level – 13-15 yrs. (8th & 9th Graders)	Scale – 9.2 Grade Level – 9th Grade	**Grade Level:** 9th **Reading Level:** fairly difficult to read. **Reader's Age:** 13-15 yrs. old (Eight and Ninth graders)	317	15	21	1534	4.8
11	Text scale 54.3 (difficult to read)	Text scale – 14.1 (Hard to read)	Scale: 10.8 Grade Level – 11th grade	Scale - 9 Grade Level – 9th grade	Scale – 10.4 Grade Level – 10th grade	Scale – 10.2 Grade Level – 14-15 yrs. (9th & 10th Graders)	Scale – 13.6 Grade Level – College	**Grade Level:** 11th **Reading Level:** difficult to read. **Reader's Age:** 15-17 yrs. old (Tenth to eleventh graders)	457	21	22	2058	4.5
12	Text scale 48 (difficult to read)	Text scale – 15.4 (Hard to read)	Scale: 11.8 Grade Level – 11th grade	Scale – 11 Grade Level – 11th grade	Scale – 11.1 Grade Level – 11th grade	Scale – 12.3 Grade Level – 17-18 yrs. (12th Graders)	Scale – 14.2 Grade Level – college	**Grade Level:** 12 **Reading Level:** difficult to read. **Reader's Age:** 17-18 yrs. old (Twelfth graders)	421	21	20	2078	4.9
13	Text scale 65.6 (standard /average)	Text scale – 12.2 (Hard to read)	Scale: 9.2 Grade Level – 9th grade	Scale - 8 Grade Level – 8th grade	Scale – 8.5 Grade Level – 8th grade	Scale -9.9 Grade Level – 14-15 yrs. old (9th & 10th Graders)	Scale – 12.3 Grade Level – Twelfth Grade	**Grade Level:** 10th **Reading Level:** standard /average. **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	472	21	23	2108	4.5
14	Text scale 57.2 (fairly difficult to	Text scale – 12.3	Scale: 9.5 Grade Level –	Scale - 10 Grade Level –	Scale – 9.4 Grade	Scale -9.9 Grade Level –	Scale – 11.1 Grade	**Grade Level:** 10th **Reading Level:** fairly difficult to read	476	17	28	2261	4.8

	read)	(Hard to read)	10th grade	10th grade	Level – 9th grade	13-15 yrs. old (8th & 9th Graders)	Level – Twelfth Grade	**Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)					
15	Text scale 41.1 (difficult to read)	Text scale – 16.3 (difficult to read)	Scale: 12.7 Grade Level – College	Scale - 12 Grade Level – 12th grade	Scale – 12.3 Grade Level – 12th grade	Scale - 12.9 Grade Level – 18-19 yrs. old (College level entry)	Scale – 15 Grade Level – college	**Grade Level:** 13th **Reading Level:** difficult to read **Reader's Age:** 18-19 yrs. old (College level entry)	482	21	23	2444	5.1
16	Text scale 62.7 (Standard/ average)	Text scale – 11.1 (Hard to read)	Scale: 8.5 Grade Level – 9th grade	Scale - 10 Grade Level – 10th grade	Scale – 8.1 Grade Level – 8th grade	Scale - 9 Grade Level – 13-15 yrs. old (8th & 9th Graders)	Scale – 8.9 Grade Level – Ninth Grade	**Grade Level:** 9th **Reading Level:** Standard/ average **Reader's Age:** 13-15 yrs. old (Eighth to Ninth graders)	451	16	28	2144	4.8
17	Text scale 69.2 (Standard/ average)	Text scale – 10.2 (fairly easy to read)	Scale: 7.4 Grade Level – 7th grade	Scale - 8 Grade Level – 8th grade	Scale – 7.4 Grade Level – 7th grade	Scale -6.8 Grade Level – 11-13 yrs. old (6th & 7th Graders)	Scale – 8.2 Grade Level – Eighth Grade	**Grade Level:** 7th **Reading Level:** (Standard/ average) **Reader's Age:** 11-13 yrs. old (Sixth to Seventh graders)	509	15	33	2209	4.3
18	Text scale 69.3 (Standard/ average)	Text scale – 10.2 (fairly easy to read)	Scale: 7.3 Grade Level – 7th grade	Scale - 10 Grade Level – 10th grade	Scale – 7.5 Grade Level – 8th grade	Scale - 8 Grade Level – 12-14 yrs. old (7th & 8th Graders)	Scale – 8 Grade Level – Eighth Grade	**Grade Level:** 8th **Reading Level:** (Standard/ average) **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	371	15	25	1733	4.7

19	Text scale 80.7 (easy to read)	Text scale – 6.9 (fairly easy to read)	Scale: 4.8 Grade Level – 5th grade	Scale - 7 Grade Level – 7th grade	Scale – 5.6 Grade Level – 6th grade	Scale -4.3 Grade Level – 8-9 yrs. (4th & 5th Graders)	Scale – 5.4 Grade Level – fifth Grade	**Grade Level:** 5th **Reading Level:** Easy to read. **Reader's Age:** 8 - 9 yrs. old (Fourth and Fifth graders)	502	11	45	2148	4.3
20	Text scale 86.1 (easy to read)	Text scale – 7.4 (fairly easy to read)	Scale: 4.3 Grade Level – 4th grade	Scale - 6 Grade Level – 6th grade	Scale – 5.5 Grade Level – 6th grade	Scale -3.5 Grade Level – 8-9 yrs. (4th & 5th Graders)	Scale – 6 Grade Level – sixth Grade	**Grade Level:** 5th **Reading Level:** Easy to read. **Reader's Age:** 8 - 9 yrs. old (Fourth and Fifth graders)	420	12	34	1668	4
21	Text scale 64.6 (Standard/ average)	Text scale – 11.4 (Hard to read)	Scale: 8.5 Grade Level – 9th grade	Scale - 9 Grade Level – 9th grade	Scale – 8.2 Grade Level – 8th grade	Scale - 9 Grade Level – 13-15 yrs. (8th & 9th Graders)	Scale – 10.6 Grade Level – 11th Grade	**Grade Level:** 9th **Reading Level:** Standard/ average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	276	17	16	1275	4.6
22	Text scale 65 (Standard/ average)	Text scale – 11.9 (Hard to read)	Scale: 8.5 Grade Level – 9th grade	Scale - 8 Grade Level – 8th grade	Scale – 8.6 Grade Level –9th grade	Scale -7.9 Grade Level – 12-14 yrs. (7th & 8th Graders)	Scale – 10.8 Grade Level – 11th Grade	**Grade Level:** 9th **Reading Level:** Standard/ Average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	311	17	18	1366	4.4
23	Text scale 65.4 (Standard/ average)	Text scale – 10 (fairly easy to read)	Scale: 8.3 Grade Level – 8th grade	Scale – 8.3 Grade Level – 8th grade	Scale – 9 Grade Level – 9th grade	Scale – 8.1 Grade Level – 12-14 yrs. (7th & 8th Graders)	Scale – 9.2 Grade Level – Ninth Grade	**Grade Level:** 8th **Reading Level:** Standard/average **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	332	17	20	1496	4.5
24	Text scale	Text	**Scale:**	**Scale**: 9	**Scale:**	Scale -	Scale –	**Grade Level:** 11th	334	24	14	1533	4.6

	55.7 (fairly difficult to read)	scale – 14.9 (Hard to read)	11.4 Grade Level – 11th grade	Grade Level – 9th grade	10.4 Grade Level – 10th grade	12.1 Grade Level – 13-15 yrs. old (8th & 9th Graders)	15.1 Grade Level – college	**Reading Level:** fairly difficult to read **Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)					
25	Text scale 75.4 (fairly easy to read)	Text scale: 8.6 (fairly easy to read)	Scale: 6.1 Grade Level – 6th grade	Scale: 9 Grade Level: 9th grade	Scale: 6.5 Grade Level – 7th grade	Scale: 6.6 Grade Level – 11-13 yrs. (6th & 7th Graders)	Scale: 7 Grade Level – Seventh Grade	**Grade Level:** 7th **Reading Level:** Fairly Easy to read. **Reader's Age:** 11- 13 yrs. old (Sixth and seventh graders)	476	14	35	2146	4.5
26	Text scale 61 (Standard/ average)	Text scale – 11.8 (Hard to read)	Scale: 8.9 Grade Level – 9th grade	Scale: 9 Grade Level – 9th grade	Scale – 8.6 Grade Level –9th grade	Scale – 8.1 Grade Level – 12 -14 yrs. (7th & 8th Graders)	Scale – 9.5 Grade Level – 10th Grade	**Grade Level:** 9th **Reading Level:** Standard/ average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	449	17	27	2023	4.5
27	Text scale 66.7 (Standard/ average)	Text scale: 11 (Hard to read)	Scale: 8.2 Grade Level – 8th grade	Scale: 7 Grade Level – 7th grade	Scale: 7.9 Grade Level – 8th grade	Scale: 7.1 Grade Level – 12 -13 yrs. (6th & 7th Graders)	Scale: 9.4 Grade Level – 9th Grade	**Grade Level:** 8th **Reading Level:** Standard/ average **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	497	17	29	2105	4.2
28	Text scale 71.9 (fairly easy to read)	Text scale: 10.4 (fairly easy to read)	Scale: 7.4 Grade Level – 7th grade	Scale: 8 Grade Level: 8th grade	Scale: 7.4 Grade Level – 7th grade	Scale: 7.3 Grade Level – 11-13 yrs. (6th & 7th Graders)	Scale: 8.9 Grade Level – Ninth Grade	**Grade Level:** 8th **Reading Level:** Fairly Easy to read. **Reader's Age:** 11- 14 yrs. old (Seventh and	418	17	25	1806	4.3

								Eighth graders)					
29	Text scale 80.7 (easy to read)	Text scale: 7.7 (fairly easy to read)	Scale: 4.7 Grade Level – 6th grade	Scale: 7 Grade Level: 7th grade	Scale: 5.8 Grade Level – 7th grade	Scale: 3.8 Grade Level: 8-9 yrs. old (4th & 5th Graders)	Scale: 5.3 Grade Level – Fifth Grade	**Grade Level:** 5th **Reading Level:** Easy to read. **Reader's Age:** 8-9 yrs. old (Fourth and fifth graders)	364	11	34	1533	4.2
30	Text scale 72.7 (fairly easy to read)	Text scale: 9.9 (fairly easy to read)	Scale: 6.9 Grade Level – 7th grade	Scale: 7 Grade Level: 7th grade	Scale: 7.1 Grade Level – 7th grade	Scale: 5.9 Grade Level – 10 -11 yrs. (5th & 6th Graders)	Scale: 8.1 Grade Level – Eighth Grade	**Grade Level:** 7th **Reading Level:** Fairly Easy to read. **Reader's Age:** 11- 13 yrs. old (Sixth and seventh graders)	442	15	29	1854	4.2
31	Text scale 71.3 (fairly easy to read)	Text scale: 8.8 (fairly easy to read)	Scale: 6.2 Grade Level – 6th grade	Scale: 9 Grade Level: 9th grade	Scale: 6.6 Grade Level – 7th grade	Scale: 5.6 Grade Level – 10 -11 yrs. (5th & 6th Graders)	Scale: 6.1 Grade Level – Sixth Grade	**Grade Level:** 7th **Reading Level:** Fairly Easy to read. **Reader's Age:** 11- 13 yrs. old (Sixth and seventh graders)	341	12	29	1529	4.5
32	Text scale 48 (difficult to read)	Text scale – 14.1 (Hard to read)	Scale: 10.6 Grade Level – 11th grade	Scale: 12 Grade Level – 12th grade	Scale: 10.2 Grade Level – 10th grade	Scale – 10.5 Grade Level: 15 – 17 yrs. old (10th to 11th Graders)	Scale – 11.1 Grade Level: Eleventh grade	**Grade Level:** 11th **Reading Level:** difficult to read. **Reader's Age:** 15-17 yrs. old (Tenth to eleventh graders)	337	16	21	1713	5.1
33	Text scale 66.4 (Standard/ average)	Text scale: 10.7 (Hard to read)	Scale: 8 Grade Level – 8th grade	Scale: 9 Grade Leve: 9th grade	Scale: 7.8 Grade Level – 8th grade	Scale: 8.3 Grade Level – 12 -14 yrs.	Scale: 8.8 Grade Level – 9th Grade	**Grade Level:** 8th **Reading Level:** Standard/ average **Reader's Age:** 12 -14	354	16	22	1633	4.6

						old (7th & 8th Graders)		yrs. old (Seventh and Eighth graders)					
34	Text scale 65 (Standard/ average)	Text scale: 10 (fairly easy to read)	Scale: 7.8 Grade Level – 8th grade	Scale: 10 Grade Leve: 10th grade	Scale: 7.5 Grade Level – 8th grade	Scale: 7.7 Grade Level – 12 -14 yrs. old (7th & 8th Graders)	Scale: 7.8 Grade Level – 8th Grade	**Grade Level:** 8th **Reading Level:** Standard/ average **Reader's Age:** 12 -14 yrs. old (Seventh and Eighth graders)	332	14	23	1542	4.6
35	Text scale 57.4 (fairly difficult to read)	Text scale: 12.8 (Hard to read)	Scale: 11.1 Grade Level – 11th grade	Scale: 9 Grade Level: 9th grade	Scale: 10.3 Grade Level – 10th grade	Scale: 11.8 Grade Level – 17 -18 yrs. Old (12th Graders)	Scale: 14.9 Grade Level – college	**Grade Level:** 11th **Reading Level:** Fairly difficult to read. **Reader's Age:** 15- 17 yrs. old (Tenth to Eleventh graders)	353	24	15	1609	4.6
36	Text scale 23.6 (Very difficult to read)	Text scale: 12.2 (Very Hard to read)	Scale: 19.4 Grade Level – college Graduate and above	Scale: 12 Grade Level: 12th grade	Scale: 15.4 Grade Leve: College	Scale: 21.8 Grade Level – College	Scale: 26.2 Grade Level – college graduate and above	**Grade Level:** 19th **Reading Level:** Very difficult to read. **Reader's Age:** College	228	38	6	1172	5.1
37	Text scale 75.7 (fairly easy to read)	Text scale: 7 (fairly easy to read)	Scale: 5.6 Grade Level – 6th grade	Scale: 8 Grade Level: 89th grade	Scale: 6.4 Grade Level – 6th grade	Scale: 4.8 Grade Level: 8-9 yrs. old (4th & 5th Graders)	Scale: 6 Grade Level – Sixth Grade	**Grade Level:** 6th **Reading Level:** Fairly Easy to read. **Reader's Age:** 10- 11 yrs. old (Fifth and sixth graders)	327	12	28	1416	4.3
38	Text scale	Text	Scale: 6.4	Scale: 8	Scale: 6.2	Scale: 5.8	Scale:	**Grade Level:** 7th	306	13	23	1338	4.4

	73.1 (fairly easy to read)	scale: 8.6 (fairly easy to read)	Grade Level – 6th grade	Grade Level: 8th grade	Grade Level – 6th grade	Grade Level – 10 -11 yrs. (5th & 6th Graders)	6.7 Grade Level – Seventh Grade	**Reading Level:** Fairly Easy to read. **Reader's Age:** 11- 13 yrs. old (Sixth and seventh graders)					
39	Text scale 55.1 (fairly difficult to read)	Text scale: 12.8 (Hard to read)	Scale: 10.2 Grade Level – 10th grade	Scale: 11 Grade Level: 11th grade	Scale: 9.2 Grade Level – 9th grade	Scale: 11.2 Grade Level – 15 -17 yrs. Old (10th – 11th Graders)	Scale: 11.8 Grade Level – Twelfth	**Grade Level:** 11th **Reading Level:** Fairly difficult to read. **Reader's Age:** 15- 17 yrs. old (Tenth to Eleventh graders)	149	19	8	738	5

Appendix 12: Global / Approacher's Series – Book 2 (Readability Test)

PASSAGE	Flesch Reading Ease score	Gunning Fog	Flesch-Kincaid Grade Level	The Coleman-Liau Index	The SMOG Index	Automated Readability Index	Linsear Write Formula	Readability Consensus	Total words	Total # of words per sentence	Total # of sentences	Total # of characters	Average # of characters per word
1 Form 1	**Text scale:** 62.2 (standard / average)	**Text scale:** 12 (Hard to read)	**Scale:** 9.1 **Grade level:** 9th grade	**Scale:** 10 **Grade Level** – 10th grade	**Scale:** 8.7 **Grade Level:** 9th grade	**Scale:** 9.8 **Grade Level:** 14-15 yrs. (9th & 10th Graders)	**Scale:** 11.3 **Grade Level:** 11th grade	**Grade Level:** 10 **Reading Level:** Standard / Average. **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	**454**	**18**	**25**	**2137**	**4.7**
2 Form 1	**Text scale:** 65.3 (standard / average)	**Text scale:** 12.2 (Hard to read)	**Scale:** 9 **Grade level:** 9th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 8.5 **Grade Level:** 9th grade	**Scale:** 9.5 **Grade Level:** 14-15 yrs. (9th & 10th Graders)	**Scale:** 11.9 **Grade Level:** 12th grade	**Grade Level:** 10 **Reading Level:** Standard / Average. **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	**333**	**20**	**17**	**1495**	**4.5**
3 Form 1	**Text scale:** 55.7 (fairly difficult to read)	**Text scale:** 13 (Hard to read)	**Scale:** 10.1 **Grade level:** 10th grade	**Scale:** 10 **Grade Level** – 10th grade	**Scale:** 9.8 **Grade Level:** 10th grade	**Scale:** 10.1 **Grade Level:** 14-15 yrs. Old (9th & 10th Graders)	**Scale:** 12.1 **Grade Level:** 12th grade	**Grade Level:** 10 **Reading Level:** fairly difficulty to read. **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	**479**	**18**	**26**	**2273**	**4.7**
4 Form 1	**Text scale:** 55.6 (fairly difficult to read)	**Text scale:** 15 (Hard to read)	**Scale:** 11.9 **Grade Level:** 12th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 10.6 **Grade Level:** 11th grade	**Scale:** 13.2 **Grade Level:** 18-19 yrs. old (college)	**Scale:** 16.3 **Grade Level:** College graduate and above	**Grade Level:** 12 **Reading Level:** fairly difficult to read. **Reader's Age:** 17-18 yrs. old (Twelfth graders)	**441**	**26**	**17**	**2024**	**4.6**

5 Form 1	**Text scale:** 74.7 (fairly easy to read)	**Text scale:** 8 (Fairly easy to read)	**Scale:** 5.6 **Grade Level:** 6th grade	**Scale:** 8 **Grade Level** – 8th grade	**Scale:** 6.4 **Grade Level:** 6th grade	**Scale:** 4.4 **Grade Level:** 8-9 yrs. Old (4th & 5th Graders)	**Scale:** 5.7 **Grade Level:** 6th grade	**Grade Level:** 6 **Reading Level:** Fairly easy to read **Reader's Age:** 10-11 yrs. old (Fifth and sixth graders)	**472**	**11**	**43**	**2039**	**4.3**
6 Form 1	**Text scale:** 69.9 (fairly easy to read)	**Text scale:** 10.8 (Hard to read)	**Scale:** 7.6 **Grade level:** 8th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 8.1 **Grade Level:** 8th grade	**Scale:** 9.8 **Grade Level:** 12-14 yrs. Old (7th & 8th Graders)	**Scale:** 9.2 **Grade Level:** 9th grade	**Grade Level:** 8 **Reading Level:** Fairly easy to read **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	431	17	26	1943	4.5
7 Form 1	**Text scale:** 52 (fairly difficult to read)	**Text scale:** 13.3 (Hard to read)	**Scale:** 10.8 **Grade level:** 11th grade	**Scale:** 11 **Grade Level** – 11th grade	**Scale:** 10.2 **Grade Level:** 10th grade	**Scale:** 11.3 **Grade Level:** 15-17 yrs. Old (10th to 11th Graders)	**Scale:** 12.8 **Grade Level:** College	**Grade Level:** 11 **Reading Level:** fairly difficult to read **Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)	389	19	20	1902	4.9
8 Form 1	**Text scale:** 55.2 (fairly difficult to read)	**Text scale:** 15.2 (Hard to read)	**Scale:** 13.1 **Grade level:** college	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 9.9 **Grade Level:** 10th grade	**Scale:** 14.7 **Grade Level:** College graduate	**Scale:** 18 **Grade Level:** College graduate and above	**Grade Level:** 13 **Reading Level:** fairly difficult to read **Reader's Age:** 18-19 yrs. old (college level entry)	483	30	16	2159	4.5
9 Form 1	**Text scale:** 55.5 (fairly difficult to read)	**Text scale:** 14.7 (Hard to read)	**Scale:** 10.9 **Grade level:** 11th grade	**Scale:** 8 **Grade Level** – 8th grade	**Scale:** 10.8 **Grade Level:** 11th grade	**Scale:** 10.3 **Grade Level:** 14-15 yrs. old (9th to 10th	**Scale:** 11.8 **Grade Level:** 12th grade	**Grade Level:** 11 **Reading Level:** fairly difficulty to read. **Reader's Age:** 15-17 yrs. old (Tenth to	346	22	16	1540	4.5

						Graders)		Eleventh graders)					
10 Form 1	**Text scale:** 65.9 (standard / average)	**Text scale:** 11 (Hard to read)	**Scale:** 8.6 **Grade level:** 9th grade	**Scale:** 8 **Grade Level** – 8th grade	**Scale:** 7.8 **Grade Level:** 8th grade	**Scale:** 8.6 **Grade Level:** 13-15 yrs. old (8th to 9th graders)	**Scale:** 10.8 **Grade Level:** 11th grade	**Grade Level:** 9 **Reading Level:** standard / average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth)	290	18	16	1289	4.4
11 Form 1	**Text scale:** 43 (standard / average)	**Text scale:** 13.7 (Hard to read)	**Scale:** 10.7 **Grade Level:** 11th grade	**Scale:** 14 **Grade Level:** College	**Scale:** 10 **Grade Level:** 10th grade	**Scale:** 10.9 **Grade Level:** 15-17 yrs. old (10th to 11th graders)	**Scale:** 8.9 **Grade Level:** 9th grade	**Grade Level:** 11 **Reading Level:** difficult to read **Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)	363	14	26	1954	5.4
12 Form 1	**Text scale:** 59.5 (standard / average)	**Text scale:** 12.5 (Hard to read)	**Scale:** 9.1 **Grade level:** 9th grade	**Scale:** 10 **Grade Level** – 10th grade	**Scale:** 9.6 **Grade Level:** 10th grade	**Scale:** 9.1 **Grade Level:** 13-15 yrs. old (8th to 9th graders)	**Scale:** 11 **Grade Level:** 11th grade	**Grade Level:** 10 **Reading Level:** standard / average **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	384	17	23	1805	4.7
13 Form 1	**Text scale:** 78.5 (fairly easy to read)	**Text scale:** 9.2 (fairly easy to read)	**Scale:** 6.6 **Grade level:** 7th grade	**Scale:** 7 **Grade Level** – 7th grade	**Scale:** 6 **Grade Level:** 6th grade	**Scale:** 6.7 **Grade Level:** 11-13 yrs. old (6th to 7th graders)	**Scale:** 8.5 **Grade Level:** 9th grade	**Grade Level:** 7 **Reading Level:** fairly easy to read **Reader's Age:** 11-13 yrs. old (Sixth and Seventh)	256	17	15	1065	4.2
14 Form 1	**Text scale:** 63.7 (standard /	**Text scale:** 12 (Hard to read)	**Scale:** 8.8 **Grade level:** 9th	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 8.7 **Grade Level:** 9th	**Scale:** 9 **Grade Level:** 13-15 yrs. old (8th to 9th	**Scale:** 11 **Grade Level:** 11th	**Grade Level:** 9 **Reading Level:** standard / average **Reader's Age:** 13-15	371	18	21	1698	4.6

	average)		grade		grade	graders)	grade	yrs. old (Eighth and Ninth)					
15 Form 1	**Text scale:** 48.2 (difficult to read)	**Text scale:** 12.6 (Hard to read)	**Scale:** 9.7 **Grade level:** 10th grade	**Scale:** 13 **Grade Level** – college	**Scale:** 9.4 **Grade Level:** 9th grade	**Scale:** 9.3 **Grade Level:** 13-15 yrs. old (8th to 9th graders)	**Scale:** 8.1 **Grade Level:** 8th grade	**Grade Level:** 10 **Reading Level:** difficult to read **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	129	13	10	666	5.2
16 Form 1	**Text scale:** 64.4 (standard / average)	**Text scale:** 10.2 (Fairly easy to read)	**Scale:** 7.8 **Grade level:** 8th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 7.6 **Grade Level:** 8th grade	**Scale:** 7.6 **Grade Level:** 12-14 yrs. old (7th to 8th graders)	**Scale:** 7.8 **Grade Level:** 8th grade	**Grade Level:** 8 **Reading Level:** standard / average **Reader's Age:** 12-14 yrs. old (Seventh and Eighth)	344	14	24	1594	4.6
17 Form 1	**Text scale:** 62.1 (standard / average)	**Text scale:** 12.7 (Hard to read)	**Scale:** 9.5 **Grade level:** 10th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 9.3 **Grade Level:** 9th grade	**Scale:** 10 **Grade Level:** 14-15 yrs. old (9th to 10th graders)	**Scale:** 12.4 **Grade Level:** 12th grade	**Grade Level:** 10 **Reading Level:** standard / average **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	454	20	23	2075	4.6
18 Form 1	**Text scale:** 31.9 (fairly difficult to read)	**Text scale:** 14.6 (Hard to read)	**Scale:** 12 **Grade level:** 12th grade	**Scale:** 15 **Grade Level** – College	**Scale:** 10.5 **Grade Level:** 11th grade	**Scale:** 11.2 **Grade Level:** 15-17 yrs. Old (Tenth to Eleventh)	**Scale:** 8.8 **Grade Level:** 9th grade	**Grade Level:** 12 **Reading Level:** difficult to read **Reader's Age:** 17-18 yrs. old (Twelfth graders)	260	13	20	1441	5.5
19 Form 1	**Text scale:** 69.3 (Standar	**Text scale:** 9.8 (fairly	**Scale:** 7.8 **Grade**	**Scale:** 7 **Grade Level** –	**Scale:** 6.7 **Grade**	**Scale:** 6.9 **Grade Level:** 11-13 yrs. Old	**Scale:** 8.7 **Grade Level:**	**Grade Level:** 8 **Reading Level:** standard / average **Reader's Age:** 12-14	118	17	7	498	4.2

	d / Average)	easy to read)	**level:** 8th grade	7th grade	**Level:** 7th grade	(Sixth and Seventh graders)	9th grade	yrs. old (Seventh and Eighth graders)					
20 Form 1	**Text scale:** 60.8 (standard / average)	**Text scale:** 10.5 (Hard to read)	**Scale:** 8.7 **Grade level:** 9th grade	**Scale:** 10 **Grade Level** – 10th grade	**Scale:** 7.6 **Grade Level:** 8th grade	**Scale:** 8.6 **Grade Level:** 13-15 yrs. (8th & 9th Graders)	**Scale:** 8.6 **Grade Level:** 9th grade	**Grade Level:** 9 **Reading Level:** standard / average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	**317**	16	20	1489	4.7
21 Form 2	Text scale 79.4 (fairly easy to read)	Text scale – 7.1 (fairly easy to read)	Scale: 4.7 Grade Level – 5th grade	Scale - 7 Grade Level – 7th grade	Scale – 5.6 Grade Level – 6th grade	Scale – 3.9 Grade Level – 8-9 yrs. old (4th & 5th Graders)	Scale – 5 Grade Level – 5th Grade	**Grade Level:** 5th **Reading Level:** (fairly easy to read) **Reader's Age:** 8-9 yrs. old (Fourth and fifth graders)	403	10	39	1724	4.3
22 Form 2	Text scale 67.6 (Standard/ average)	Text scale – 8.8 (fairly easy to read)	Scale: 7.4 Grade Level – 7th grade	Scale - 9 Grade Level – 9th grade	Scale – 7.5 Grade Level – 8th grade	Scale - 7.1 Grade Level – 11-13 yrs. (6th & 7th Graders)	Scale – 7.7 Grade Level – 8th Grade	**Grade Level:** 8th **Reading Level:** Standard/ Average **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	454	14	32	2064	4.5
23 Form 2	Text scale 67.7 (Standard / average)	Text scale – 10.7 (Hard to read)	Scale: 8.4 Grade Level – 8th grade	Scale – 8.3 Grade Level – 8th grade	Scale – 7.5 Grade Level – 8th grade	Scale – 8.4 Grade Level – 12-14 yrs. (7th & 8th Graders)	Scale – 10.8 Grade Level – 11th Grade	**Grade Level:** 9th **Reading Level:** Standard/average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	349	18	19	1531	4.4
24 Form 2	Text scale	Text scale –	**Scale:** 5	**Scale**: 6 Grade	**Scale:** 5.7	Scale - 4.4 Grade	Scale – 6.9	**Grade Level:** 6th **Reading Level:** Easy to	446	14	32	1782	4

	83.8 (Easy to read)	8 (fairly easy to read)	Grade Level – 5th grade	Level – 6th grade	Grade Level – 6th grade	Level – 8-9 yrs. old (4th & 5th Graders)	Grade Level – 7th grade	read **Reader's Age:** 10-11 yrs. old (Fifth and sixth graders)					
25 Form 2	Text scale 66.5 (Standard / average)	Text scale: 11 (hard to read)	Scale: 8.2 Grade Level – 8th grade	Scale: 7 Grade Level: 7th grade	Scale: 7.9 Grade Level – 8th grade	Scale: 7.2 Grade Level – 11-13 yrs. (6th & 7th Graders)	Scale: 9.4 Grade Level – Ninth Grade	**Grade Level:** 8th **Reading Level:** standard / average **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	497	17	29	2113	4.3
26 Form 2	Text scale 74.8 (fairly easy to read)	Text scale – 9.1 (fairly easy to read)	Scale: 6.3 Grade Level – 6th grade	Scale: 9 Grade Level – 9th grade	Scale – 6.6 Grade Level – 7th grade	Scale – 6.8 Grade Level – 11 -13 yrs. Old (7th & 8th Graders)	Scale – 7.3 Grade Level – 7th Grade	**Grade Level:** 7th **Reading Level:** fairly easy to read **Reader's Age:** 11-13 yrs. old (Sixth and Seventh graders)	453	14	32	2035	4.5
27 Form 2	Text scale 70.1 (fairly easy to read)	Text scale: 11 (Hard to read)	Scale: 8.2 Grade Level – 8th grade	Scale: 8 Grade Level – 8th grade	Scale: 7.5 Grade Level – 8th grade	Scale: 8.3 Grade Level – 12 -14 yrs. old (7th & 8th Graders)	Scale: 11.1 Grade Level – 11th Grade	**Grade Level:** 9th **Reading Level:** fairly easy to read **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	398	19	21	1713	4.3
28 Form 2	Text scale 76.1 (fairly easy to read)	Text scale: 9 (fairly easy to read)	Scale: 6.6 Grade Level – 7th grade	Scale: 7 Grade Level: 7th grade	Scale: 6.9 Grade Level – 7th grade	Scale: 6.7 Grade Level – 11-13 yrs. (6th & 7th Graders)	Scale: 8.3 Grade Level – Eighth Grade	**Grade Level:** 7th **Reading Level:** Fairly Easy to read. **Reader's Age:** 11-13 yrs. old (Sixth and Seventh graders)	380	16	24	1630	4.3
29 Form 2	Text scale	Text scale:	Scale: 7.4	Scale: 7 Grade	Scale: 7.1	Scale: 7.6 Grade	Scale: 9.2	**Grade Level:** 8th **Reading Level:** fairly	351	18	20	1507	4.3

	73.3 (fairly easy to read)	10.1 (fairly easy to read)	Grade Level – 7th grade	Level: 7th grade	Grade Level – 7th grade	Level: 12-14 yrs. old (7th & 8th Graders)	Grade Level – Ninth Grade	easy to read. **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)					
30 Form 2	Text scale 54.3 (fairly difficult to read)	Text scale: 13.3 (hard to read)	Scale: 10.2 Grade Level – 10th grade	Scale: 11 Grade Level: 11th grade	Scale: 9.6 Grade Level – 10th grade	Scale: 10.4 Grade Level – 14-15 yrs. old (9th & 10th Graders)	Scale: 11.8 Grade Level – Twelfth Grade	**Grade Level:** 11th **Reading Level:** Fairly difficult to read. **Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)	542	18	30	2624	4.8
31 Form 2	Text scale 61.4 (standard / average)	**Text scale:** 11.4 (hard to read)	**Scale:** 8.6 **Grade Level** – 9th grade	**Scale:** 11 **Grade Level:** 11th grade	**Scale:** 8.8 **Grade Level** – 9th grade	**Scale:** 9.2 **Grade Level** – 13 -15 yrs. old (8th & 9th graders)	**Scale:** 9.2 **Grade Level** – Ninth Grade	**Grade Level:** 9th **Reading Level:** standard / average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	365	16	23	1758	4.8
32 Form 2	Text scale 55.5 (fairly difficult to read)	Text scale – 14.9 (Hard to read)	Scale: 11.4 Grade Level – 11th grade	Scale: 9 Grade Level – 9th grade	Scale: 10.4 Grade Level – 10th grade	Scale – 12.2 Grade Level: 17 – 18 yrs. old (12th Graders)	Scale – 15 Grade Level: college	**Grade Level:** 11th **Reading Level:** fairly difficult to read. **Reader's Age:** 15-17 yrs. old (Tenth to eleventh graders)	330	24	14	1529	4.6
33 Form 2	Text scale 48.6 (difficult to read)	Text scale: 14 (Hard to read)	Scale: 10.5 Grade Level – 11th grade	Scale: 12 Grade Level: 12th grade	Scale: 10.2 Grade Level – 10th grade	Scale: 10.4 Grade Level – 14 -15 yrs. old (9th & 10th Graders)	Scale: 11.1 Grade Level – 11th Grade	**Grade Level:** 11th **Reading Level:** difficult to read **Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)	338	16	21	1710	5.1
34 Form 2	Text scale 64.6	Text scale: 9.7	Scale: 8 Grade Level –	Scale: 10 Grade Level:	Scale: 7.3 Grade	Scale: 8.7 Grade	Scale: 8.2 Grade	**Grade Level:** 8th **Reading Level:** Standard/	474	15	31	2263	4.8

	(Standard/ average)	(fairly easy to read)	8th grade	10th grade	Level –7th grade	Level – 13 -15 yrs. old (8th & 98th Graders)	Level – 8th Grade	average **Reader's Age:** 12 -14 yrs. old (Seventh and Eighth graders)					
35 Form 1	Text scale 41.9 (difficult to read)	Text scale: 14.7 (hard to read)	Scale: 10.8 Grade Level – 11th grade	Scale: 14 Grade Level: college	Scale: 10.4 Grade Level – 10th grade	**Scale:** 10.7 **Grade Level** – 15 -17 yrs. old (10th to 11th Graders)	**Scale:** 9.1 **Grade Level** – 9th grade	**Grade Level:** 11th **Reading Level:** difficult to read **Reader's Age:** 15 -17 yrs. old (Tenth to Eleventh graders)	249	14	18	1331	5.3
35 Form 2	Text scale 64.5 (Standard/ average)	Text scale: 12.7 (hard to read)	Scale: 9.4 Grade Level – 9th grade	Scale: 9 Grade Level: 9th grade	Scale: 9.2 Grade Level – 9th grade	Scale: 10.4 Grade Level – 14 -15 yrs. old (9th & 10th Graders)	Scale: 12.8 Grade Level – College	**Grade Level:** 10th **Reading Level:** Standard / average **Reader's Age:** 14 -15 yrs. old (Ninth to Tenth graders)	394	21	19	1795	4.6
36 Form 3	Text scale 65 (Standard/ average)	Text scale: 14.1 (hard to read)	Scale: 10.7 Grade Level – 11th grade	Scale: 6 Grade Level: 6th grade	Scale: 9 Grade Level – 9th grade	Scale: 11 Grade Level – 15 -17 yrs. old (10th to Eleventh Graders)	Scale: 15.4 Grade Level – College	**Grade Level:** 10th **Reading Level:** Standard / average **Reader's Age:** 14 -15 yrs. old (Ninth to Tenth graders)	470	26	18	1931	4.1

Appendix 13: A Comprehensive Core for English Language – Book 3 (Readability Test)

PASSAGE	Flesch Reading Ease score	Gunning Fog	Flesch-Kincaid Grade Level	The Coleman-Liau Index	The SMOG Index	Automated Readability Index	Linsear Write Formula	Readability Consensus	Total words	Average # of words per sentence	Total # of sentences	Total # of characters	Average # of characters per word
1	**Text scale:** 53 (fairly difficult to read)	**Text scale:** 12.9 (Hard to read)	**Scale:** 10.4 **Grade level:** 10th grade	**Scale: 1**1 **Grade Level** – 8th grade	**Scale:** 9.5 **Grade Level:** 10th grade	**Scale:** 11.1 **Grade Level:** 15-17 yrs. (10th & 11th Graders)	**Scale:** 11.8 **Grade Level:** 12th grade	**Grade Level:** 11 **Reading Level:** fairly difficulty to read. **Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)	423	18	23	2094	5
2	**Text scale:** 71.8 (fairly easy to read)	**Text scale:** 8.7 (Fairly easy to read)	**Scale:** 6.3 **Grade level:** 6th grade	**Scale: 8** **Grade Level** – 8th grade	**Scale:** 6.6 **Grade Level:** 7th grade	**Scale:** 5 **Grade Level:** 8-9 yrs. old (4th & 5th Graders)	**Scale:** 6.3 **Grade Level:** 6th grade	**Grade Level:** 6 **Reading Level:** fairly easy to read. **Reader's Age:** 10-11 yrs. old (Fifth and sixth graders)	**231**	12	19	997	4.3
3	**Text scale:** 77.9 (fairly easy to read)	**Text scale:** 8.5 (fairly easy to read)	**Scale:** 6.2 **Grade level:** 6th grade	**Scale: 7** **Grade Level** – 7th grade	**Scale:** 5.9 **Grade Level:** 6th grade	**Scale:** 6.1 **Grade Level:** 10 - 11 yrs. old (5th & 6th Graders)	**Scale:** 7.6 **Grade Level:** 8th grade	**Grade Level:** 7 **Reading Level:** fairly easy to read. **Reader's Age:** 11-13 yrs. old (Sixth to Seventh graders)	227	15	18	1169	4.2
4	**Text scale:** 63.6 (Standard / average)	**Text scale:** 12.4 (Hard	**Scale:** 9.7 **Grade level:**	**Scale: 10** **Grade Level** –	**Scale:** 8.5 **Grade**	**Scale:** 11.1 **Grade Level:**	**Scale:** 12.7 **Grade Level:**	**Grade Level:** 11 **Reading Level:** Standard / average.	212	21	10	989	4.7

		easy to read)	10th grade	10th grade	**Level:** 9th grade	- 17 yrs. old (10th & 11th graders)	college	**Reader's Age:** 15-17 yrs. old (Tenth to Eleventh graders)					
5	**Text scale:** 75.3 (fairly easy to read)	**Text scale:** 9.5 (fairly easy to read)	**Scale:** 7.1 **Grade level:** 7th grade	**Scale:** 8 **Grade Level** – 8th grade	**Scale:** 6.3 **Grade Level:** 6th grade	**Scale:** 6.3 **Grade Level:** 12 - 14 yrs. old (7th & 8th Graders)	**Scale:** 8.8 **Grade Level:** 9th grade	**Grade Level:** 8 **Reading Level:** fairly easy to read. **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	329	17	19	1420	4.3
6	**Text scale:** 71.9 (fairly easy to read)	**Text scale:** 9.7 (fairly easy to read)	**Scale:** 6.8 **Grade level:** 7th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 7 **Grade Level:** 7th grade	**Scale:** 7.2 **Grade Level:** 11 - 13 yrs. old (6th & 7th Graders)	**Scale:** 7.6 **Grade Level:** 8th grade	**Grade Level:** 8 **Reading Level:** fairly easy to read. **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	462	14	32	2101	4.5

Appendix 14: West Africa Book Project – Book 4 (Readability Test)

PASSAGE	Flesch Reading Ease score	Gunning Fog	Flesch-Kincaid Grade Level	The Coleman-Liau Index	The SMOG Index	Automated Readability Index	Linsear Write Formula	Readability Consensus	Total words	Average # of words per sentence	Total # of sentences	Total # of characters	Average # of characters per word
1	**Text scale:** 68.3 (standard / average)	**Text scale:** 11.5 (Hard to read)	**Scale:** 7.4 **Grade level: 7**th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 8.5 **Grade Level:** 9th grade	**Scale:** 7.8 **Grade Level:** 11-13 yrs. (6th & 7th Graders)	**Scale:** 8 **Grade Level:** 8th grade	**Grade Level:** 8 **Reading Level:** Standard / Average. **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	**292**	**15**	**20**	**1327**	**4.5**
2	**Text scale:** 52.8 (fairly difficult to read)	**Text scale:** 14.3 (Hard to read)	**Scale:** 12 **Grade level:** 12th grade	**Scale:** 10 **Grade Level** – 10th grade	**Scale:** 9.9 **Grade Level:** 10th grade	**Scale:** 13 **Grade Level:** 18-19 yrs. (college)	**Scale:** 15.3 **Grade Level:** college	**Grade Level:** 12 **Reading Level:** fairly difficult to read **Reader's Age:** 17-18 yrs. old (Twelfth graders)	**470**	**25**	**19**	**2206**	**4.7**
3	**Text scale:** 55.3 (fairly difficult to read)	**Text scale:** 13.5 (Hard to read)	**Scale:** 10.3 **Grade level:** 10th grade	**Scale:** 9 **Grade Level** – 9th grade	**Scale:** 10 **Grade Level:** 10th grade	**Scale:** 9.6 **Grade Level:** 14-15 yrs. Old (9th & 10th Graders)	**Scale:** 12.6 **Grade Level:** college	**Grade Level:** 10 **Reading Level:** fairly difficulty to read. **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	**462**	**19**	**24**	**2097**	**4.5**
4	**Text scale:** 92.7	**Text scale:**	**Scale:** 3	**Scale: 5**	**Scale:** 3.6	**Scale:** 2 **Grade**	**Scale:** 4.7	**Grade Level:** 4 **Reading**	**488**	**11**	**45**	**1867**	**3.8**

	(very easy to read)	5.4 (easy to read)	**Grade Level:** 3rd grade	**Grade Level** – 5th grade	**Grade Level:** 4th grade	**Level:** 6-8 yrs. old (1st and 2nd graders)	**Grade Level:** 5th grade	**Level:** Very easy to read **Reader's Age:** 8-9 yrs. old (fourth and fifth graders)					
5	**Text scale:** 50.5 (fairly difficult to read)	**Text scale:** 14.8 (hard to read)	**Scale:** 11.5 **Grade Level:** 12th grade	**Scale:** 11 **Grade Level** – 11th grade	**Scale:** 10.7 **Grade Level:** 11th grade	**Scale:** 12.2 **Grade Level:** 17-18 yrs. Old (Twelfth Graders)	**Scale:** 14.1 **Grade Level:** college	**Grade Level:** 12 **Reading Level:** Fairly difficult to read **Reader's Age:** 17-18 yrs. old (Twelfth graders)	**364**	**21**	**17**	**1768**	**4.9**
6	**Text scale:** 66.6 (standard / average)	**Text scale:** 11.8 (Hard to read)	**Scale:** 8.9 **Grade level:** 9th grade	**Scale:** 8 **Grade Level** – 8th grade	**Scale:** 8.2 **Grade Level:** 8th grade	**Scale:** 9.4 **Grade Level:** 13-15 yrs. Old (8th & 9th Graders)	**Scale:** 11.9 **Grade Level:** 12th grade	**Grade Level:** 9 **Reading Level:** standard / average **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	447	20	24	2117	4.4
7	**Text scale:** 56.8 (fairly difficult to read)	**Text scale:** 12.3 (Hard to read)	**Scale:** 9.5 **Grade level:** 10th grade	**Scale:** 10 **Grade Level** – 10th grade	**Scale:** 9.5 **Grade Level:** 10th grade	**Scale:** 9.4 **Grade Level:** 13-15 yrs. Old (8th to 9th Graders)	**Scale:** 11 **Grade Level:** 11th grade	**Grade Level:** 10 **Reading Level:** fairly difficult to read **Reader's Age:** 14-15 yrs. old (Ninth to Tenth graders)	471	17	28	2240	4.8

8	**Text scale:** 62.6 (standard / average)	**Text scale:** 11 (Hard to read)	**Scale:** 8.4 **Grade level:** 8th grade	**Scale:** 10 **Grade Level** – 10th grade	**Scale:** 8 **Grade Level:** 8th grade	**Scale:** 8.9 **Grade Level:** 13-15 yrs. Old (8th to 9th Graders)	**Scale:** 8.8 **Grade Level:** 9th grade	**Grade Level:** 9 **Reading Level:** (standard / average) **Reader's Age:** 13-15 yrs. old (Eighth and Ninth graders)	458	16	29	2186	4.8
9	**Text scale:** 80.8 (easy to read)	**Text scale:** 14.7 (fairly easy to read)	**Scale:** 4.7 **Grade level:** 5th grade	**Scale:** 7 **Grade Level** – 7th grade	**Scale:** 5.6 **Grade Level:** 6th grade	**Scale:** 4.1 **Grade Level:** 8-9 yrs. old (4th to 5th Graders)	**Scale:** 5.3 **Grade Level:** 5th grade	**Grade Level:** 5 **Reading Level:** easy to read. **Reader's Age:** 8-9 yrs. old (fourth and fifth graders)	509	11	47	2169	4.3
10	**Text scale:** 72 (fairly easy to read)	**Text scale:** 10 (fairly easy to read)	**Scale:** 7.4 **Grade level: 7**th grade	**Scale:** 8 **Grade Level** – 8th grade	**Scale:** 7.1 **Grade Level:** 7th grade	**Scale:** 7.6 **Grade Level:** 12-14 yrs. old (7th to 8th graders)	**Scale:** 9.1 **Grade Level:** 9th grade	**Grade Level:** 8 **Reading Level:** fairly easy to read **Reader's Age:** 12-14 yrs. old (Seventh and Eighth graders)	329	17	19	1423	4.3

Appendix 15: List Of Recommended Books For Elective Subjects

LIST OF BOOKS RECOMMENDED

SCIENCE ELECTIVES					
S/N	**TITLE OF BOOK**	**AUTHOR**	**PUBLISHER**	**ISBN**	**CONTACT**
ELECTIVE MATHEMATICS					
1	Aki Ola Series - Elective (Further) Mathematics	Peter Asiedu	Aki-Ola Publications	**9988786433**	
2	Elective Mathematic for SHS 1-3	H.N. Archer B. Lugu	Kabkok Publication Ltd	**9789988870379**	
3	Effective Elective Mathematics for SHS – Students' Book (Revised)	Samuel Tsey	Sedco Publishing	**9789964725204**	
4	Concise Elective Mathematics for SHS	Dominic Otoo, PhD	Not provided	**9988022603**	
CHEMISTRY					
1	Essential for SHS Chemistry	Isaac Yaw Togbe	Bestas Press Ltd	**9789988143312**	
BIOLOGY					
1	Biology for SHS – (GAST)	Sadick Adu Ali Clement Bessa Nyavor Samuel Sedoh	Winmat Publishers Limited	**9789988042769**	
2	Biology for SHS	J. Asima A. E Safo R. Dzongor W. Nartey	Kabkok Publication Ltd	**9789988254193**	

SCIENCE ELECTIVES (CONT'D)					
S/N	**TITLE OF BOOK**	**AUTHOR**	**PUBLISHER**	**ISBN**	**CONTACT**
PHYSICS					
1	Understanding Physics Book 1	Dominic Julius Cudjoe Dzidefo Afram	Sedco Publishing Ltd	9789964726485	
2	Understanding Physics Book 2	Dominic Julius Cudjoe Dzidefo Afram	Sedco Publishing Ltd	9789964726928	
3	Understanding Physics Book 3	Dominic Julius Cudjoe Dzidefo Afram	Sedco Publishing Ltd	9789964726935	
4	Aki Ola Series – Physics for SHS	Peter Asiedu Henric Atta Baah-Yeboah	Aki-Ola Publications	9988786484	

BUSINESS ELECTIVES					
S/N	**TITLE OF BOOK**	**AUTHOR**	**PUBLISHER**	**ISBN**	**CONTACT**
ECONOMICS					
1	Jubilee Series – Economics for SHS 1-3	Kwaku Anim	Kabkork Publishing	**9789988270278**	
2	Aki-Ola Series – Standard Economics for SHS	Paul K. Tawiah	Aki-Ola Publications	**9988846336**	

3	Economics Explained for SHS	Emmanuel Effah-Sakyi	Smartline Publishing Ltd	**9789988880828**	
4	"Prof & Figures" – Simplified Economics Textbook for SHS in West Africa	Alidu Mohammed Yakubu Alex Addae Korankye	Sahabia Enterprise	**9988757301**	
5	Sedco Economics Series – Economics for SHS – Students' Book	Joel Abrokwah	Sedco Publishing Ltd	**9789964725600**	
6	Economics Without Tears	Yaw Owusu Asante	Black Mask Limited	**9789988291082**	
BUSINESS MANAGEMENT					
1	Apo Golore Business Management Made Simple for SHS	Frankline Atoagyire	Fonky Publications	**998807744**	
2	Bazooka Series –Business Management for SHS with A Complete Dictionary	Dan –Sandy Timinka	Hybrid H. Ltd	**9988034784**	
3	GABET – Business Management for SHS	Ben Attieku Edward Marfo-Yiadom Thoams Dorkey Kwaw Tekyi	Smartline (Second publication 2009)	**9988600771**	
FINANCIAL ACCOUNTING					
1	Financial Accounting	E. Marfo-Yiadom et al	Kwadwoan Publishing	**9789988830335**	
2	Okay Series – Fundamental Principles of Financial Accounting	Frederick Appiah-Kusi	Okay Series Publications – Kumasi (Year of publication 2017)	**9988017069**	

3	The Fundamentals of Financial Accounting	Richmond Sam-Quam	University of Education, Winneba Printing Press	**978996432665**	
4	Financial Accounting for SHS	William Asamoah	Aki Ola Publications	**9789988846350**	
COST ACCOUNTING					
1	Okay Series – Principles of Cost Accounting Combined with Workbook for SHS	Frederick Appiah-Kusi	Okay Series Publications – Kumasi	**9988017069**	
2	Principles of Cost Accounting for SHS	Cyril Attipoe	Masterman Publications Ltd	**978-9988135485**	

GENERAL ARTS ELECTIVES (CONT'D)

S/N	TITLE OF BOOK	AUTHOR	PUBLISHER	YEAR OF PUBLICATION	CONTACT
HISTORY					
1	K4 Series-Concise Notes on Africa and Ghanaian History	Prince Adjei-Kuffour	K4 Series Investment Ventures	**9789988179427**	
3	Aki-Ola Series – History for SHS	Enoch Amoah	Aki-Ola Publications	**9789988849405**	
LITERATURE-IN-ENGLISH					
1	Miller's Aid Authentic Africa and Non-African Poetry – Literature-In-English (Elective) WASSCE 2016-2020	David Miller	Miller's Aid and Morning Sun Enterprise	**9789988204426**	

2	Literature In English – Aspects of English Language, Tips on Test and Examination Questions	Rebecca A. Vorsah	Xlibris Publishing	**9781465302335**	
3	A Guide to Study of English Language Grammar and Literature (Second Edition) Volume 1	C. K. Dondieu	Anest Company Ltd.	**9789964632665**	

GENERAL ARTS ELECTIVES (CONT'D)					
S/N	**TITLE OF BOOK**	**AUTHOR**	**PUBLISHER**	**YEAR OF PUBLICATION**	**CONTACT**
FRENCH					
1	Mastering French with Ease for SHS Forms 1, 2, & 3	Moses Owereko Mensah	Mosey Publications and Educational Supplies	97s89988257972	
TWI					
1	Asante Twi Nyansap4 for SHS **(Asante Twi Elective)**	Nana Akwasi Agyemang Prempeh	Adwinsa Publications Ltd	9789964633181	
2	Akwapem Twi Nyansap4 for SHS **(Akuapem Twi Elective)**	Nana Akwasi Agyemang Prempeh	Adwinsa Publications Ltd	9789964633181	
3	Twi Kasa Adesua SHS 1,2, & 3 **(Akuapem Twi)**	Wilfred Offei Aboagye	Step Publishing	9789988219185	

4	Twi Kasa Adesua SHS 1,2, & 3 **(Asante Twi)**	Wilfred Offei Aboagye	Step Publishing	9789988219185	

VISUAL ARTS/HOME ECOMONOMICS ELECTIVES

S/N	TITLE OF BOOK	AUTHOR	PUBLISHER	YEAR OF PUBLICATION	CONTACT
MANAGEMENT IN LIVING					
1	Management in Living for SHS	Christine Brew Christina Offei –Ansah Augustina Araba Amissah Theresa Alexandra Amu	Adwinsa Publications Ltd	9789964632665	
2	Understanding Management in Living	Elizabeth Asare Mercy Kafoa	Kwadwoan Publishing	9789988095104	
FOOD AND NUTRITION					
1	Kwadwoan – A Complete Course in Food and Nutrition for SHS	Eileen Cecilia Adigo Comfort Kutum Maddah	Kwadwoan Publishing	9789988824793	
2	Aki-Ola Series – Food and Nutrition for SHS	John Kwabena Dollar	Aki-Ola Series	9789988875305	

3	Adwinsa – Food and Nutrition for SHS	Dr. Fuastina Yaa Amoako-Kwakye Mrs. Rosaline Love MacArthur	Adwinsa Publications	9789964630913	

VISUAL ARTS/HOME ECOMONOMICS ELECTIVES (CONT'D)

S/N	TITLE OF BOOK	AUTHOR	PUBLISHER	YEAR OF PUBLICATION	CONTACT
GENERAL KNOWLEDGE IN ART					
1	General Knowledge In Art for SHS	Angel Publications	Angel Publications	978988288891	
2	Aki-Ola Series – General Knowledge in Art for SHS	Isaac Annor Adom K. Dickson Amuzu G. Dzidzornu	Aki-Ola Publications	9789988849405	
3	General Knowledge In Art for SHS	Emmanuel Effah-Sakyi	Smartline Publishing Ltd	9789988880828	

VISUAL ARTS/HOME ECOMONOMICS ELECTIVES (CONT'D)

S/N	TITLE OF BOOK	AUTHOR	PUBLISHER	YEAR OF PUBLICATION	CONTACT
GRAPHIC DESIGN					

1	Inside Graphic Design	Yaw Odame Gyau & Eric Obir-Yeboah	Kwadwoan Publishing	9789988095112	

AGRICULTURAL SCIENCE ELECTIVES					
S/N	**TITLE OF BOOK**	**AUTHOR**	**PUBLISHER**	**YEAR OF PUBLICATION**	**CONTACT**
GENERAL AGRICULTURE					
1	General Agricultural Science for SHS	Sasu George Mensah Emile N. Koranteng Agya K. Baffou-Antwi	Adwinsa Publications	9789964631782	
2	General Agriculture for SHS Books 1-3	Smartline Publishing Ltd	Smartline Publishing Ltd	9789988880897	

Appendix 16: Supplementary Readers For Senior High School

S/N	TITLE OF BOOK	AUTHOR	PUBLISHER	ISBN	CONTACT	YEAR ASSESSED
1	Break of The Dawn	Candace Sackey	Adwinsa Publications(Gh) Ltd P.O. Box LG 92 Legon Accra	9789964632584	0508230188 0242366537	March 2018
2	1ST National Drama Festival	National Commission On Culture	Adwinsa Publications(Gh) Ltd P.O. Box LG 92 Legon Accra	9789964633904	0508230188 0242366537	March 2019
4	Unexpected Joy At Dawn	Alex Agyei-Agyiri	Agyiri Consult P.O. Box Ds 2011 Dansoman	998855091X	0208183722	March 2018
5	One More Dance In December	Alex Agyei-Agyiri	Agyiri Consult P.O. Box Ds 2011 Dansoman	9780985222000	0208183722	April 2018
6	The Hazardous Hunt	Mary Saniba Kyere	Prisebs, Anwomaso-Kumasi P.O.Box Ks 5588 Kumasi-A/R	9789988257712	0208201133	September, 2017
7	Crossroads At Ankobea	Kojo Yankah	Asempa Publishers P. O. Box 919 Accra	9964784538	0261602575	March 2018
8	Bright's Plight	Noelyne Anansewaa Mensah	ET- Cetra Publishing House P.O.Box 2430 Takoradi	9781782801986	0547198313	April 2018
9	The Boy in the Oversized Coat	Michael Frimpon	Michael Frimpon P.O. Box AN 50 Achimota	9780986421143	0202504498	August, 2017
10	Friendship Across The Sissian Bridge	Joe Frazier	Joe Frazier P.O. Box UP 1110 KNUST Kumasi	9789988249878	0244456055	September, 2017

11	An Enemy from Within (The Fall of King Deru and Clash of Power)	Nana Asaare (Philip Boakye Dua Oyinka)	Clean Vision Ghana Limited P.O.Box Nx 308 Kumasi	99880124557	0208236777	April 2019
12	Censor	Francis Yao Djabaku	Francis Yao Djabaku P. O. Box B 533 Tema	9789988254391	0548953953	April 2018
13	African Tales	Francis Yao Djabaku	Francis Yao Djabaku P. O. Box B 533	9789988218270	0548953953	April 2018

			Tema			
14	Holidays In Ghana	Francis Yao Djabaku	Francis Yao Djabaku P. O. Box B 533 Tema	978998825438	0548953953	April 2018
15	The Hunt	David Sangmor	Mountype Publishing 15 SamoraMachel Street Asylum Down Accra	9789988258139	0244959653	April 2018
16	Between Wars	Yaa Asamoah Aning	Mountype Publishing 15 SamoraMachel Street Asylum Down Accra	9789988236052	0244959653	January 2018
17	Against The Odds	David Sangmor	Mountype Publishing 15 SamoraMachel Street Asylum Down Accra	9789988236069	0244959653	April 2017
18	Sintim - Making of an Empire	Yaa Asamoah –Aning	Mountype Publishing 15 Machel Samora Street Asylum Down Accra	9789988273026	0244959653	Nov 2018
19	The Black Race Rising (Perspectives From West Africa)	Michael K O Appiah	Michael K O Appiah P. O. Box CT 4374 Cantonments	9964783868	0209038854	May 2018

20	Journey	Ga Agambila	Sub-Saharan Publishers P. O. Box LG 358 Legon - Accra	9789988550912	0266704605	June 2018
21	Sosu's Call (Upgraded Version)	Meshack Asare	Sub-Saharan Publishers P. O. Box 358 Legon - Accra	9789988883003	0266704605	Dec 2018
22	The Cross Drums	Meshack Asare	Sub-Saharan Publishers P. O. Box LG 358 Legon - Accra	9789988647063	0266704605	June 2018
23	Great Expectations	Charles Dickens	Smartline Publishing C3 Coastal Estates DTD Baatsona, Spintex Road Accra	9781909221420	0244372387	June 2018
24	Between Sisters	Adowa Badoe	Smartline Publishing C3 Coastal Estates DTD Baatsona, Spintex Road Accra	9988600895	0244372387	August 2018
25	The Race To Find	Nurudeen Jamio	NurudeenJamio Takoradi Hospital P. O. Box 7 Takoradi	9781537283005	0247756333	July 2018
26	Yoofi and The Forest Ranger	Charles Anson- Lawson	Presbyterian Press Ltd P. O. Box 3255 Accra	9789988235666	026276-7983	July 2018
27	A Quarter Past Midnight	Faith Ben-Daniels	Flozzies Company Ltd P.O.Box 38 Sunyani-Brong Region	9789988176662	0244649413	July 2018
28	Mimosa	Faith Ben-Daniels	Flozzies Company P.O. Box 38 Sunyani - B/A	9789988855307	024464-9413	June 2018

29	False Twins	Haruna Ayuba	Haruna Ayuba Karaga SHS P. O. Box KA Karaga	9789988271336	0202307588 0242201889	August 2018
30	The Dream of Akousa Frempomaa	Bright Kweku Appiah	Bright Kweku Appiah P. O. Box NT 102 Accra- Newtown	9789988261726	0244406151	August 2018
31	The Girl On A Mission	Bright Kweku Appiah	Bright Kweku Appiah P. O. Box NT 102 Accra- Newtown	9789988261719	0244406151	August 2018
32	Ways of the Ant	Francis Yaw Ansah	Francis Yaw Ansah P. O. Box CS 8238 Tema	978-9988195984	0544347277	August 2018
33	Above The King	Francis Yaw Ansah	Francis Yaw Ansah P. O. Box CS 8238 Tema	9789988153724	0544347277	August 2018
34	The Curves of Destiny	Francis Yaw Ansah	Francis Yaw Ansah P. O. box CS 8238 Tema	9789988170646	0544347277	August 2018
35	The Cemetery without Graves	Macdonald K. B Simpson	M. K. B Simpson P. O. Box KN 2534 Kaneshie	5800131874175	0560200270	September 2018
36	It's Achimota or Death	J.C. Quansah	J. C Quansah P.O.Box MC 1183 Takoradi	978-9988212162	0208176705	November 2018

38	The Son of Umbele	Bill Marshall	Aki-Ola Publications CO Ltd P.O.Box ST 425 Accra	9789988273026	0208129119	November 2018
37	Edufa	Efua T Sutherland	Sedco Publishing P.O.Box 2051 Accra	978 9964720728	0208113985	November 2018

38	The Marriage of Anansewaa	Efua T Sutherland	Sedco Publishing P.O.Box 2051 Accra		0208113985	November 2018
40	Sacrificial Lambs	Charity Afua Boateng	Sedco Publishing P.O.Box 2051 Accra	9789964725471	0208113985	May 2017
41	The Slaves	Mohammed Ben Abdallah	Sedco Publishing Ltd P. O. Box 2051 Accra	9789964721541	0208113985	June 2018
42	The Adventures of Princess Pauline Prince Ademola Jnr and their Blue Dragon	Rita Akoto Cooker	Makivi Venture P.O. Box AN 8200 Accra		0553009748	Dec 2018
43	Moon in Daylight	Abukari Abdul-Jalil Paasor	Masterman Publications Ltd P.O.Box AN 19720 Accra-North	9789988261122	0243425554	Dec 2018
44	Service the Way to the Top	Agyepong-Danquah	Masterman Publications Ltd P.O.Box AN 19720 Accra-North		0243425554	Dec 2018
45	Jewel of Kabi	Mawuli Adzei	Masterman Publications Limited P.O. Box An 19720 Accra	9789988192198	0243425554	June 2018
46	Lone Rescue Mission	Joel Borboryoe	Masterman Publications Limited P.O. Box An 19720 Accra	9789988649562	0243425554	Dec 2018
47	The Witch of Lagbati	Mawuli Adzei	Masterman Publications Limited P.O. Box An 19720 Accra	9988649495	0243425554	June 2018
48	Until the days After	Ebenezer Adansi	Masterman Publications Limited P.O. Box An 19720 Accra	998820060	0243425554	June 2018

49	In My Father's House	Abubakari Abdul-Jalil	Masterman Publications Limited P.O. Box An 19720 Accra	9789988261139	0243425554	June 2018
50	Serwah - The Saga of an African Princess	Rita Akoto Coker	Afram Publications Ltd P.O. Box Ltd M 18 Accra	996402450	0501266669 0541020993	November 2018
51	Fate's Promise-Sequel to the Lost Princess	Rita Akoto Coker	Afram Publications Ltd P.O.Box M 18 - Accra	9789964705282	0501266669 0541020993	December 2018
52	The Adventure of Elizabeth Sam	CNN Lokko	Afram Publications Ltd P.O.Box M 18 Accra	9789964701512	0501266669 0541020993	July 2018
53	The Lost Princess	Rita Akoto Cooker	Afram Publications GH Ltd P.O.Box M18 Accra	9964705212	0501266669 0541020993	December 2018
54	Choices-Memorable Short Stories	Lawrence Darmani	Step Publishers P.O.Box AN 1150 Accra-North	9988618025	0269601954	December 2018
55	The Heritage - A Story To Remember	Lawrence Darmani	Step Publishers P.O.Box AN 1150 Accra-North	99887632618697	0269601954	September 2017
56	God Bless Our Homeland Ghana	Lawrence Darmani	Step Publishers P.O.Box AN 1150 Accra-North	9789988219178	0269601954	September 2016
57	Grief Child	Lawrence Darmani	Step Publishers P.O.Box AN 1150 Accra-North	9789988763251	0269601954	September 2017
58	Lightning	Lawrence Darmani	Step Publishers P.O.Box AN 1150 Accra-North	9789988211345	0269601954	September 2017
	Ossie's Dream	Nanayaa Amankwah	Step Publishers P.O.Box AN 1150 Accra-North	9789988618766	0269601954	April 2015
59	Willing to Serve - The Life of Nana Ofori Atta 1	Abyna Ansaa Adjei	Frangipani Books Ltd P.O.Box 0259 Osu-Accra	9789988280451	0205959359	December 2018

60	A Child is a Subject of Law	Bright Kweku Appiah	Bright Kweku Appiah P.O.Box NT 102 Accra Newtown	9789988279226	024440-6151	January 2019
61	Sunshine After Rain	Rose Rwakasisi	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	9789988573539	0207742184	March 2019

62	The 'Coup' Maker	Asare Konadu	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	9789988573232	0207742184	March 2019
63	The Return of The Falcon	Asare Konadu	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	9988573375	0207742184	March 2019
64	A Husband for Esi Ellua	K. A. Bediako	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	97899988573201	0207742184	March 2019
55	Painful Road to Kadjebi	R. Kofi Hihetah	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	97899988573416	0207742184	March 2019
66	The Narrow Path	Francis Selormey	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	9789988573119	0207742184	March 2019
67	Prejudice	Kwabena Asare Bediako	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	9789988573652	0207742184	March 2019

68	Recipe for Disaster	Lilian Tindyebwa	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	9789988573782	0207742184	March 2019
69	Victims of Circumstance	Asare Konadu	Adaex Educational Publications Ltd P.O. Box AQ 252 Abossey Okai	978998857379-9	0207742184	March 2019
70	Murder in the Cassava Patch	Bai T Moore	NNF Esquire Limited P.O. Box AN 8644 Accra-North	9789964725013	0262113117	December 2018
71	Things Fall Apart	Chinua Achebe	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435913502	0262113117	June 2018
72	Money Galore	Chinua Achebe	NNF Esquire Limited P.O.BOX AN 8644	9780435091615	0262113117	June 2018

			Accra-North			
74	No Longer at Ease	Chinua Achebe	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435913519	0262113117	June 2018
75	Arrow of God	Chinua Achebe	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435905309	0262113117	June 2018
76	The Anthills of the Savannah	Chinua Achebe	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435905385	0262113117	June 2018
77	A Man of the People	Chinua Achebe	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435905347	0262113117	June 2018
78	The Concubine	Elechie Amadi	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435905569	0262113117	June 2018

79	Weep Not Child	Ngugi Wa Thiongo	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435908300	0262113117	June 2018
80	The Beautiful Ones Are Not Yet Born	Ayi Kwei Armah	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435905408	0262113117	June 2018
81	The Joy of Motherhood	Buchi Emecheta	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435913540	0262113117	June 2018
82	The Enemy Within	Steve Jacobs	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435909987	0262113117	December 2018
73	The Housemaid	Ama Darko	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	9780435910082	0262113117	December 2018
84	Mine Boy	Peter Abrahams	NNF Esquire Limited P.O.BOX AN 8644 Accra-North	97804359056620	0262113117	December 2018
85	Lion's Whisper	Elizabeth-Irene Batie	Kwadwoan Publishing 10 ARS Lane Obodjo East Legon Accra	978-9988-2714-2	0243486022 0501619910 0242276855	August 2018
86	Ebony Girl	Vera Akumiah	Kwadwoan Publishing 10 Ars Lane	9789988227135	0243486022	September 2018

			Obodjo East Legon Accra			
87	Santrofi Abroad	Richard Addae	Kwadwoan Publishing 10 ARS Lane Ogbojo East Legon Accra	9789988841183	0501288834 0501619910	September 2018

88	Olivia	Benard Tetteh	Kwadwoan Publishing 10 Ars Lane Obodjo East Legon Accra	9789988841476	0243486022 0501619910 0242276855	September 2018
89	Rattling In the Closet	Elizabeth-Irene Baitie	Kwadwoan Publishing 10 Ars Lane Obodjo East Legon Accra	9789988227203	0243486022 0501619910 0242276855	Nov 2016
	The Lost Royal Treasure	Ruby Goka	Kwadwoan Publishing 10 Ars Lane Obodjo East Legon Accra	9789988841188	0501288834 0501619910	Nov 2016
	The Dorm Challenge	Elizabeth-Irene Baitie	Kwadwoan Publishing 10 Ars Lane Obodjo East Legon Accra	978998884042	0501288834 0501619910	Nov 2018
90	Twins Divided	Dr. Robert Peprah-Gyamfi	Dr. Robert Peprah-Gyamfi P.O. Box MP 4474 Mamprobi - Accra	9780995552418	0266799520	September 17
91	World War II Revised - Memoirs of a Forced African Conscript	Dr. Robert Peprah-Gyamfi	Dr. Robert Peprah-Gyamfi P.O. Box MP 4474 Mamprobi - Accra	9790995552425	0266799520	September 17
92	The Step-Monster	Rubby Yayra Goka	Digibooks Close DTD Service Plot Sakumono C13 - Tema	9789988230395	0246493842	September 17
93	To Kiss A Girl	Rubby Yayra Goka	Digibooks Close DTD Service Plot Sakumono C13 - Tema	9789988871437	0246493842	November 2018
94	A Gift for Fafa	Rubby Yayra Goka	Harinex Publishers	9789988187422	024428-8148	
95	The Dream Weaver	J.M.E Hagan	Pages and Stationary Ltd	9879988856380	0243248242	
96	Brilliant Quarry	J.M.E Hagan	Pages and Stationary Ltd	9789988856366	0243248242	

97	Wild Ox Heart	J.M.E Hagan	Pages and Stationary Ltd	9788899856380	0243248242	
98	Love Over the Distance	Richard Acquah-Harrison	ACW Press	9781934668061	0243587777	
99	The Dream Weaver	J.M.E Hagan	Pages and Stationary Ltd	9879988-856380	024324-8242	
100	Witches of Honour	Asare Adei	Asdan Vision Publishers		0501210279	
101	A Beautiful Daughter	Asare Adei	Asdan Vision Publishers	99880-29942	0501210279	
102	Thumbprints of Dishonour	Asare Adei	Asdan Vision Publishers		0501210279	
103	The Angel without the Aura	Ernest Emmanuel Branttie	SEDESEL	9789988237431	0242042565	
104	The Betrothal	Edward Naazie	Adwinsa Publications (Gh) Ltd	9799988632428	0245413767	

Appendix 17: National Council For Curriculum And Assessment (NaCCA), Assessment Form A

NOTE: ***Use the signs and prescribed font type and size provided in the boxes below.***

Signs	✓	X	**Font Types**	***Arial (Body) Italics***	**Date Material Received:**
E-mail all soft copies to **-** **naccatextbookevaluation@gmail.com**					

DIRECTIONS FOR COMPLETING THIS BOOK ASSESSMENT FORM

This form has 8 sections. Section 1 is not scored. Sections 2 – 6 should be scored. Each of these five main sections has a number of marks that should be allocated to the section after careful evaluation of the items in that section. The total mark awarded for the section should be written in the space for

"Assessed Mark" on the right side at the top of the section. **The total mark for the assessment is 200. After completing the assessment of the five sections indicated, add the assessed marks for the sections and divide by 2 to convert the total assessed mark to the scale of 100.** Write this percentage mark in the appropriate space on page 9. Relate the percentage mark to the grading scale also on page 9 and award a grade for the book. Details for scoring the sections are presented at the beginning of each section in the form.

SECTION 1 1. PRELIMINARIES (FRONT MATTER)

Title of Book:	**Cover Page**	**Remarks**	
	i. Title Page Clearly Written: Yes: __No: __		
	ii. Does the title reflect the content of the book? Yes: __Not Quite:___ No:___		
Author(s):	**Publisher(s)**	**Copyright Owner:**	**No of Pages**:

	Self-Published Yes ____ ***(Self**-publishing is the publication of any **book** or other media by its author without the involvement of an established publisher.*		
	ISBN:		

Cover Design/ Illustrations	**Remarks**
a. Available: Yes: __No:___ b. Well Designed and Written: Yes: __No:___ c. Does the cover design reflects the content of the book: Yes: __No:___	

Type of Book	Fiction: ___	Non-Fiction: __	**Specify Area:**
Language of Material	English Language: __Ghanaian Language: _____ French: _____ Any Other (Specify) _____		

Scoring Guidelines for Section 2 Section 2: Physical Considerations Total Marks - 20

Section 2 has 20 marks to be allocated over 11 items. Items (i) and (ii) should not be scored. Of the remaining nine items, items (iii)-(x) should be scored out of 2

marks. Item (xi) should be scored out of 4 marks, two marks for (a) and 2 marks for (b). A “yes” response should be scored 2 and a “no” response scored zero

PHYSICAL CONSIDERATION (*Please Tick* ✓) **(20 marks) Assessed mark**

Shape of Book i. Portrait: __Landscape: ____ Square: ____ Others (Specify): _____ ii. Size of Book:				**Remarks**
	Yes 2	**No 0**	**Score**	
iii. Is the shape suitable for intended users?	2	0		
iv. Is the size suitable for intended users?	2	0		
v. **Kind of Cover** (*Please Tick* ✓) Hard___ Limp-back: ___ Paper: ___ Cloth: ___ Laminate:___ Chromo coat: __Other (Specify):				
a. Is the cover suitable for the book and intended users Yes: ____No: ___	2	0		
vi. **Kind of Binding** (*Please Tick* ✓) a. Saddle Stitching: ____ b. Perfect Binding:_____ c. Side Stitching: _____ d. Mechanical Binding: ___ e. Multi-Section Binding: ___ f. Other (Specify): _____				
It is suitable Yes: __ No:____	2	0		
vii. **Kind of paper used:** Bond: __ ii Newsprint: __ iii. Other (Specify):__ □ Is it suitable for the intended users? Yes: __ No: ___	2	0		
viii. **Font size: ____points.** Is it suitable for intended users? Yes: __No: ___	2	0		
ix. **Type face (Serif: __ Sans Serif: _____)** Is type face suitable for intended users?	2	0		

x.	Quality of Print. Are there any of the following? e.g. Blots/smudges___ Fade outs_____ Yes: ___ No: __ Is quality of print suitable? Yes: ___ No: __	2	0		
xi	Quality of layout e.g. quality of alignment, arrangement and positions e.g. pages, pictures, icons etc.	**Good 2**	**Poor 0**		
	a. Quality of alignment and lengths of sentences	2	0		
	b. Quality of typesetting without density of text but showing effective balance of spaces between text and non-text areas e.g. margins, headings, words, sentences paragraphs, illustrations Good: ____ Poor_____	2	0		

Scoring Guidelines for Section 3 Section 3: Presentation Total Marks – 35

Section 3 has three sub-sections. The marks for each of the sub-sections are as follows:

Beginning Pages (10 marks)

Beginning pages has five items. Allocate 2 marks for each item. Item (i): "Yes" 2 marks, Not quite, 1 mark, and "No" zero.

Items (ii) and (iii): 2 marks for "Yes" and 0 for "No".

Item (iv) and (v): If the item is provided, mark "Yes" as 1 and "No" as 0. If the item is relevant, mark "Yes" as 1 and "No" as 0.

Illustrations: (16marks)

This sub-section consists of 7 items and carries 16 out of the 20 marks allocated for "The Text". Score the sub-items as follows: (a) 2 marks for Yes; 0 for No.

(b) 3 marks if illustrations consist of three or more of the kinds of illustrations specified; 2 marks if illustrations consist of only 2 of the specified illustrations and 1 mark if illustrations are of only one type. (c) 2 marks for more than one colour; 1 mark for one colour.

(d) 3 marks if illustrations are good; 2 marks for "Satisfactory" and 1 mark for "Poor". (e) 2 marks for "Yes"; 0 for "No".

(f) 2 marks for "Yes"; 0 for "No".

(g) 2 marks for "Yes"; 0 for "No".

End Pages (10 marks)

This sub-section has 10 marks to be allocated to five items.

Items (i)-(iv): Each item has 2 marks. Allocate 1 mark for Yes if the item is provided, and 1 mark for Yes if it is well written.

Item (v): Allocate 2 marks if the book consists of other end pages material that may be relevant and also enhances the quality of the book.

PRESENTATION – (35marks) Assessed marks:_____

Beginning Pages– Are the following provided? (*Please Tick* ✓) **(10 marks)**					
	Yes-2	**Not Quite - 1**	**No - 0**	**Score**	**Remarks**
i. Does the title reflect the content of the book	2	1	0		
ii. Does the cover design reflect content of the book	2		0		
iii. Is the Table of Contents well set out? iv. **Yes:__No:___**	2		0		
v. Copyright Page: **Yes:__ No:___**	1		0		
	Relevant? [1]	**Not Relevant? [0]**		**Score**	**Remarks**
vi. Is Introduction **Yes:___ No:__** Preface provided? **Yes:__ No:___**	1	0			
vii. Is Foreword **Yes:___ No:__** Acknowledgement provided? **Yes:___ No:__**	1	0			
viii. Any other material provided? (Specify) **Yes:✓ No:__**	1	0			

The Text (15 marks)					
i. Division of the Material. *Are the following clearly provided in the book?* (*Please Tick* ✓)	**Yes - 2**	**No - 0**	**Scor e**		**Remarks**
a. Chapters/Units/Parts **Yes:__ No:___**	2	0			
b. Sections (As applicable) **Yes:__No:___**	2	0			
c. Sub-sections (As applicable) **Yes:__ No:___**	1	0			
ii. Illustrations					
a. Are there illustrations in the book? **Yes:__ No:___**	2	0			
b. Kinds of illustration? 1. Photographs__ 2. Cartoons____ 3. Diagram:___ 4.Digital Art___ 5. Paintings:___ 6. Line Drawings:___ 7.Charts:__ 8. Graphs:___ 9. Tables:__ 8.Others (Specify):_____ **(Score *not applicable here)*** Specify combinations of illustrations in the book (Use numbers 1-7) c. Colour of illustrations? One colour:__Two colours:___ Three colours: ___ Other (Specify):____					
	Good 2	**Satisfactory 1**	**Poor 0**	**Score**	
d. Quality of illustrations: Good:__ Satisfactory:___ Poor:___	2	1	0		
d. Are the illustrations properly positioned in the text? Yes:__ No:___	Yes - 2	No - 0			
f. Are illustrations adequate? Yes:__ No:____	Yes - 2	No - 0			

g. Are illustrations relevant and effective? Yes:__ Not Quite:___ No:__	Yes - 2	Not Quite - 1	No - 0		

End Pages (Back Matter) (May not apply in some cases) 10marks

Are the following provided and well written? Please Tick (✓)

	Yes	No	Score	Remarks
a. Bibliography: Yes__ No___	1	0		
Well Written	1	0		
b. Glossary: Yes___ No__	1	0		
Well Written	1	0		
c. Index: Yes____ No:__	1	0		
Well Written	1	0		
d. The Blurb Yes: __No___	1	0		
Well Written	1	0		
Any other material provided and relevant.	2	0		

Scoring Guidelines for Section 4
Section 4: Content Material
Total Marks - 70

Item (i): 9 marks if content is factually correct; 6 marks if few errors here and there, and 3 marks if the book contains much incorrect information. Item (ii): Do not score.

Item (iii): 9 marks for "Yes". 5 marks for "Somewhat", and 0 for "No".

Item (iv): 6 marks for "Yes" and 2 marks for "No".

Item (v): 9 marks for "Adequate"; 6 marks for "Fair", and 3 marks for "Inadequate".

Item (vi): 9 marks for "Very relevant"; 5 marks for "Relevant" and 0 for "Irrelevant".

Item (vii): 9 marks for "Very well"; 6 marks for "Quite well" and 3 marks for "Inadequate coverage".

Item (viii): 6 marks for "Yes" and 3 marks for "No".

Item (ix): 5 marks for "Yes"; 3 marks for "Just right", and 0 for "No".

Item (x): 5 marks for "Good"; 3 marks for "Just right", and 1 mark for "Low". Item (xi): 3 marks for "Yes" and 0 for "No".

CONTENT MATERIAL (70 marks) Assessed mark_____

*Please Tick (✓) and make your comments at the **remarks** column if any.*	**Marks**	**Score**	**Remarks**
i. a. Is the content factually correct? Yes:__ No: __ (**9marks)**	9		
b. Much incorrect information? Yes:____ No: ___ (**6marks)** Give examples of incorrect information observed:	6		
c. Few errors: Yes: ____ No: ___ (**3 marks)**	3		

ii. Aims and objectives of the writer(s): State in a few words the aims of the writer. (**No score)**					
iii. Are the aims achievable in the book? Yes__Partially: ___ No:_____ If partially, explain:	**Marks**			**Score**	**Remarks**
	Yes 9	**Partially 6**	**No 0**		
iv. Do the chapters/units logically follow each other in the book? Yes:__No: ____ Arrangement could be improved: *Explain*	**Yes - 6**	**No - 0**			
v. Treatment of subject matter: Adequate:__Fair: ____ Inadequate: ____ Explain if inadequate:	**Adequate**	9			
	Fair	6			
	Inadequate	3			
vi. Relevance of the content to the national curriculum (national syllabus): Very relevant:__ Relevant: _____ Irrelevant: ____ Not Quite____	**Very Relevant**	9			
	Relevant	5			
	Irrelevant	0			
vii. How well does the material cover other requirements of the syllabus? (e.g. Dimensions of thinking): Very well:__Quite well:___ Inadequate coverage: ___	**Very Well**	9			
	Quite well	5			
	Inadequate Coverage	0			
viii. Are some interesting and new concepts introduced in the book Yes:___ No:__ Give one or two examples:	**Yes**	5			
	No	3			
ix. Language level: Is the level of language suitable for the	**Yes**	6			

intended learners? Yes:__ Just right:___ No: ___	**Just Right**	3		
	Low	0		
x. Quality of the language is Good:__ Right ___ Low___	**Good**	5		
	Right	3		
	Low	1		
xi. Consistency in the use of: a. British English Yes:___ No:___ b. American English: Yes: ___ No: ____ ***(NOTE:** Provide examples for either British or American spellings or **both** if identified in the materials. Indicate the page/paragraph and line in which it may occur.)*	**Yes**	3		
	No	0		

Scoring Guidelines for Section 5

Section 5: Methodology Total Marks – 60 marks

Item (i): 8 marks if pupil/student centered; 0 is teacher-centred.

Item (ii): 12 marks for creativity and artistic skill of the work. High creativity 12;

Moderate creativity- 8; 4 marks for just adequate creativity and 0 for no creativity whatsoever.

Item (iii): 8 marks for "Yes"; 3 marks for "Not quite", and 0 for "No".

Item (iv): (a) 5 marks for "Yes"; 2 marks for "Few times", and 0 for "No". (b) 5 marks for "Yes"; 2 marks for "Few times", and 0 for "No".

(c) 5 marks for "Yes" and 2 marks for "No".
(d) 5 marks for "Yes" and 0 for "No".
(e) 2 marks for "Yes" and 0 for "No".

(d) 5 marks for "High quality"; 3 marks for "Just right" and 1 mark for "Poor quality"

Item (v): (a) 3 marks

(b) 2 marks
(c) 0 mark

METHODOLOGY (60 MARKS) Assessed marks_____

*Please Tick (✓) and make your comments at the **remarks** column if any.* i. Is the material**: a. Pupil/student centred: __ b. Teacher-centred: _____** Give reasons for your answer:	**Marks**	**Score**	**Remarks**
	8 marks		
	0 marks		

ii. Comment on the creativity or artistic skill of the writer (Use of drama, graphics, dialogue, role play, imagery and other devices to get message across):	**Marks**	**Score**	
High creativity:____	12 marks		
Adequate creativity:	8 marks		
Moderate creativity: ____	4 marks		
No creativity whatsoever:____	0 mark		

		Yes	**Not Quite**	**No**	**Score**	**Remarks**
iii. Is there consistency in the way information is presented? (i.e. logicality and systematic presentation of information) Yes: __Not Quite: __ No: __		8	3	0		
iv. Does the book contain adequate information on the following? **(*This may not apply in all cases*)** a. Group activities/assignments. Yes: ___Few times: __No: ___		5	3	0		
b. Individual activities/assignments. Yes:__Few times: ___ No:___		5	3	0		
c. Assignments and activities leading to acquisition of high ability thinking skills (i.e. Application of knowledge and skills, analysis of issues, synthesis of ideas and skills, comparisons and evaluation etc.) Yes:___Few times:____ No:____ **Give reasons:**		5	2	0		
d. Assignments for report writing: Yes:___ No___		5	___	0		
e. Formative review questions/assignments? Yes:___No: ___		5	___	0		
f. End of unit review questions/assignments? Yes: __No: ___		1	___	0		
g. Quality of exercises:	High quality	3				

	Just right:	2			
	Poor quality:	0			
Impact of exercises on learning: *(Tick **One** option in this section and record the marks in the appropriate column)* The exercises will;				**Score**	
i. Help learners to advance their knowledge, skills and attitudes: **Yes:** ___ **No:** ___		3			
ii. Help learners to acquire some amount of knowledge, skills and attitudes: **Yes:** __ **No:** ___		2			
iii. Not help learners to learn much: **Yes:**_ **No:** _		0			

CULTURAL RELEVANCE AND GENDER SENSITIVITY (15marks) Assessed marks_____

*Please Tick (✓) and make your comments at the **remarks** column if any.*	***Marks***			***Score***	**Remarks**
Gender balance (May not apply to all materials) a. Do males and females feature equally in the material? Yes: ___Not Quite:___ No: ___	**Yes 5**	**Not Quite 2**	**No 0**		
a. Are diversity of cultural values and ethnic issues in the country well addressed? Yes: __ Not Quite__ No: ___	**5**	**2**	**0**		

b. Does the material bring out issues and illustrations on persons with special needs? Yes __ A few times ___ No: ___	**Yes 5**	**Few Times 2**	**No 0**		

GRADE LEVEL:

i. State the grade or level the material would be most suitable for in spite of what the author might have stated:
Grade/Class/Form: _____

Give reasons for above:_____ ii.

Recommendations for improvement:

_____

OTHER COMMENTS AND RECOMMENDATIONS ON THE FOLLOWING

Title/Cover	
Physical Considerations	
Presentation	
Content material	
Methodology	
Exercises (where applicable)	
Cultural Relevance and Gender Sensitivity	

OVERALL GRADE

Total Assessed Mark: _____

90 – 100 A Excellent Book; Recommended for schools.
80 – 89 B Very Good Book; Recommended for schools.
70 – 79 C Good Book: Needs to effect some changes in sections scoring low marks before acceptance for schools.
60 – 69 D Creditable Work, but needs more improvement in sections specified.
50 – 59 E Not quite good; Needs more work in sections specified. <50 F Poorly written book; Needs no consideration.

Overall Grade:_____ Recommendations for improvement:_____

Name:	**Phone No.**	**Date:**

SUMMARY REPORT

Appendix 18: Research Advisors' Required Sample Size

Required Sample Size†

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586