READABILITY OF HIV AND AIDS PRINTED MATERIALS USED

BY STUDENTS IN KENYAN SECONDARY SCHOOLS: A STUDY
OF NAIROBI PROVINCE

BY

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EDUCATION, OF KENYATTA UNIVERSITY

2005
DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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ABSTRACT

This study is an analysis of printed materials used to teach about HIV and AIDS in Kenyan secondary schools to establish whether they are comprehensible to the students and thus whether they are effective in communicating the message to them. Since the Human Immunodeficiency Virus (HIV) has continued to spread yet no cure has been found, the importance of clear communication on the prevention measures cannot be underestimated.

In Kenya, 80-90% of HIV infections are among the youth (Republic of Kenya, 2000). The AIDS education program in schools aims at equipping the youth with knowledge and skills to enable them to avoid infection and also educate other peers on the same. A review of literature revealed that printed materials were the main channels of communicating the message to students in schools. Printed materials have been used for a while but there is evidence that the pandemic continues to spread very rapidly and threatens to wipe out an entire generation hence the need for the study.

The study was undertaken in Nairobi Province. Three readability formulae were used to analyze twenty printed materials. These formulae are: Flesch, Smog and Fog readability formulae. Questionnaires were administered to a total of 210 students to find out their attitudes on the HIV and AIDS materials. A total of 14 teachers of HIV and AIDS were also interviewed. It was found out that some of the teachers taught it as a subject but most...
of them integrated in other subjects like social education and ethics and Home science and programs such as guidance and counseling and peer counseling.

Responses were analyzed and the data revealed that:

- Most of the materials were found to be appropriate for students in secondary schools as revealed by the readability formulae. However, some of them were found to be suitable for higher levels.

- In general, students had a positive attitude towards the materials. They found them to be readable. However, the students, however, complained that the materials were too few, lacked details, use of symbolic language, unfamiliar terminologies and monotonous due to lack of variety.

- Teachers also found that most of the materials were readable to their students. They, however, found some materials to be lacking current information, recent statistics and learning activities that are learner centred to encourage openness.

- The teachers advocated that more materials be produced for schools and that they be written specifically for each class.
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LIST OF ABBREVIATIONS

CPE Certificate of Primary Education

HIV Human Immunodeficiency Virus

KIE Kenya Institute of Education

NGO Non-governmental Organization

STD Sexually Transmitted Diseases

WHO World Health Organization
LIST OF ACRONYMS

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<tr>
<td>AMREF</td>
<td>African Medical Research Foundation</td>
</tr>
<tr>
<td>KANCO</td>
<td>Kenya AIDS NGOS Consortium</td>
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<td>National AIDS and STD Control Programme</td>
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<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
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DEFINITION OF TERMS

**Adequacy:** Sufficient to meet certain needs or requirements.

**Anaphoric reference:** Referring to words in a text that have already been mentioned.

**Books:** Written or printed work produced and issued as an independent unit, generally more than 50 pages in length.

**Cataphoric reference:** Referring to words in a text that are yet to be mentioned.

**Ellipsis:** Leaving out words or phrases from sentences where they are unnecessary because they have already been mentioned or referred to. This avoids repetition.

**Epidemic:** A communicable disease that spreads rapidly.

**Fixation:** The pause that the eyes make when one is reading a word.

**Grade level:** The minimum level at which a task can be successfully attempted by students.

**Lexis:** All the words that belong to a particular subject or language.

**Magazines:** Forms of printed periodicals, published at regular intervals.

**Pamphlets:** Unbound independent publications, generally less than 50
Pandemic: A fatal disease that affects most of the population.

Printed materials: Sheets of (mainly paper) on which information is displayed in the form of symbols. They include books, brochures, magazines, leaflets, and newsletters.

Readability: The ease with which a message is comprehended from a printed material.

Scourge: A cause of widespread affliction, for example a wasting disease that affects a large area

Syntax: The study of how words combine to form sentences and the rules governing the formation of sentences.
CHAPTER ONE

1.0 Introduction

This chapter discusses the background to the study, the statement of the problem, objectives of the study, significance of the study, the scope and limitations of the study.

1.1 BACKGROUND TO THE STUDY

The Human Immunodeficiency Virus (HIV) and the Acquired Immune Deficiency Syndrome (AIDS) have been termed as the world’s most devastating epidemic. (National Aids Control Council (Republic of Kenya, 2000). By the end of the year 2000, as many as 36.1 million people in the world were estimated to be living with HIV and AIDS (Republic of Kenya, 2001-2002). According to WHO estimates, about six million cases of HIV infection are found in Africa. It is estimated that 2.2 million Kenyan’s are now living with HIV infection and about 250,000 develop AIDS each year.

In Kenya, the first case of AIDS was reported in mid 1980’s. Since then, the epidemic has spread very rapidly. The first response was to treat the disease as a medical problem, so it was left to the Ministry of Health. In the 1990’s, the number of AIDS related deaths began to rise. The government, working together with the National AIDS Control Program (NASCOP) reported over 500 deaths, which occurred daily due to AIDS related illnesses. It became apparent that the scourge was not only a public health problem; but it was a major constraint to national socio- economic development. The Koech commission of inquiry into educational issues points out that, HIV and AIDS are not
only a medical problem but also a social, economic, educational, religious and cultural problem (Koech, 2000). It affects all areas of human life.

In 1999, the then President of Kenya Daniel Arap Moi declared HIV and AIDS a national disaster when he pointed out that the scourge was not just a threat to our social and economic development, but a real threat to our very existence (Republic of Kenya, 2000).

The importance of health as an input to the economic development and growth of a country is well established. A healthier population is more productive and has an increased capacity for hard work. At the family level, an adult with AIDS will severely compromise household resources as the functional capacity to work is reduced. Money is diverted away from food, schools and other expenditure to pay medical costs and taking care of orphans.

The youth are at higher risk of contracting the virus because of their interaction with peers who could be engaging in high-risk social practices. Adolescence is a time of experimentation and risk taking, often with little regard for the possible consequences. Most young people engage in high-risk practices at this stage. Mann (1992:353) argues that among adolescents personal perception of risks is usually low and that misperceptions continue about transmission modes and the efficacy of prevention measures. Johnston (1999) observed that Kenyan adolescents have poor perceptions of HIV and AIDS risk because they believe that this infection will affect others and not themselves and that the consequences need not be thought about now. Generally, urban youth are more at risk than rural youth because they tend to engage in high-risk behavior.
than those in rural areas. In urban areas, it is common to find the youth who use drugs, which they inject into their bodies and the use of alcohol is also a factor that makes one to be more vulnerable to risky behavior, which includes unsafe sex. Contracting HIV and then developing AIDS while young means the end of many cherished hopes and ambitions in life.

According to William (1997), most young people in Kenya lack basic information about sexuality and reproductive health. This is because parents do not discuss issues on sexuality with their children. It is either regarded as a taboo or it is discussed very superficially. The youth, therefore, seek for more information from other sources like the mass media and their peers.

Young people already know something about sex and AIDS but their information could be inadequate, wrong or incomplete. They should get clear information that will help them develop responsible behavior for their own good and for the common good.

AIDS education is a powerful tool in the struggle to tame the spread of HIV. HIV and AIDS education program for youth in and out of school is a joint effort between the Ministry of Education, Science and Technology and UNICEF. It is offered with an aim of imparting knowledge, skills and attitudes meant to assist learners to change their sexual behavior, thus, it will curb the spread of the scourge. AIDS messages are taught through subjects in the curriculum such as Biology, Social Education Ethics, Religious Education
and through guidance and counselling and peer counselling programmes. It is also taught as a separate subject in some schools.

There are several objectives for teaching about HIV and AIDS. According to the HIV and AIDS syllabus by KIE, the learner should be able to:

1. Acquire necessary knowledge and skills about HIV, AIDS and STDs.
2. Develop life skills that will lead to AIDS and STDs free life.
3. Appreciate facts and issues related to HIV, AIDS and STDs.
4. Identify appropriate sources of information on HIV and STD related issues.
5. Make decisions about personal and social behavior that reduce the risk of HIV and STDs infection.
6. Show compassion towards and concern for those infected and affected by HIV and AIDS.
7. To be actively involved in school and out of school activities aimed at prevention and control of HIV and STDs infections.
8. Communicate effectively with peers and others, issues and concerns related to HIV and AIDS and STDs.

In order to attain the above-mentioned objectives, several elements come into play. According to Patel (1993), elements that are involved in the teaching–learning process are content, objectives, teaching strategies, media, evaluation of performance, size of the group and feedback. All these elements are interdependent and none of them can be ignored. All of them are important for successful teaching.
Print media are the most commonly used learning materials in Kenyan secondary schools. They range from textbooks, magazines, pamphlets, newspapers, comic books, brochures and newsletters.

The quality of these materials depends on the content and their ability to communicate clearly to the intended learners. The readability of the learning materials is one of the factors that determine the success of the learning process. Materials can fail to communicate the intended message due to various reasons, including the level of readability.

Alderson (2000) points out that learner’s linguistic knowledge continues to develop with age and experience. For example, vocabulary size and depth develops and the ability to process the more complex linguistic structures associated especially with written language. This most inevitably develops with increasing literacy. Mann (1997: 334) argues that ‘...a further barrier to HIV prevention through information is the gap between the literacy level of the audience and the level at which the brochure or pamphlet is written’.

There are several variables that interact to influence the level of readability of a given material. Gilliland (1972) grouped them into four categories as follows:

a) Factors in the language – such as vocabulary, grammar and style.

b) Factors in the print – such as type size and format.

c) Factors in the content – such as fact, fiction and topic.
d) Factors in the reader – such as age, sex, motivation, and state of mind.

A writer should have in mind all these factors in order to write in a readable manner. In communicating information it is important to know whether the information contained in the HIV materials is clearly communicated as intended to youth in schools. Readability is the method used to determine whether the message is passed clearly. The research intends to use the readability approach to find out whether these materials achieve the objective. This is needful because a lot of resources are being wasted without knowing exactly how much is of benefit; hence the concern of the researcher.

1.2 Statement of the problem

In Kenyan secondary schools, printed materials are used more than other materials to teach on HIV and AIDS. They include books, pamphlets, newsletters, magazines and comic books. It seems that, in spite of the use of these materials and other methods the AIDS problem is still serious. So it is possible that the materials may not be communicating clearly to learners. This is evidenced by the fact that cases of infection have been increasing with time, despite increase in dissemination of information aimed at reducing its spread.

In Kenyan secondary schools, 20% of students of ages between 14 -17 were infected with the HIV by the year 2000 as reported by the East African Standard (6/1/2000). Sepulveda (1997), points out that the availability of information about HIV and AIDS is a necessary but not sufficient condition for the individual to adopt preventive measure of
change behavior. The materials might be available, but they may not be effective in the attainment of the aims for which they were produced. If materials are not readable the youth will not get the message clearly as intended, so they may not change their behavior and reduce cases of infection with the virus. There was need, therefore, to find out whether the materials were readable and therefore capable of communicating effectively to the students in Kenyan secondary schools.

The researcher, therefore, analyzed printed materials on this subject which are used in Kenyan secondary schools to find out whether they communicated as required.

1.3 Objectives of the study

From the stated problem, the following objectives were formulated:

a) To investigate the readability level of HIV and AIDS print materials used in secondary schools.

b) To find out whether the students in Kenyan secondary schools find the materials readable.

c) To find out whether teachers find the materials suitable to teach HIV and AIDS in secondary schools.

d) To explain some variables that contribute to the readability of print media on HIV and AIDS.

e) To assign reading levels to HIV and AIDS materials used for educating Kenyan youth.
1.4 RESEARCH QUESTIONS

The researcher sought to answer the following questions:

a) What is the readability level of each of the sampled materials?

b) Do the students find the materials easy to comprehend?

c) Do the teachers find the materials suitable for teaching HIV and AIDS in secondary schools?

d) What factors contribute to the readability of the HIV and AIDS printed materials?

e) What are the reading levels of each of the selected printed materials?

1.5 Significance of the study

It is hoped that the results of this study will be of significance to various groups of people. Teachers, for example, are faced with the task of selecting suitable materials from the available wide range of materials, which differ in style, content and difficulty. The results of the study will help by providing them with an additional guide in selecting suitable materials for learners.

The Ministry of Education, other governmental and non-governmental organizations that are currently engaged in educating the youth on the dangers posed by HIV and AIDS scourge, will profit from the study. They will be more sensitized about the comprehensibility of the materials they use to campaign against HIV and AIDS among the youth. Publishers may benefit, too, as they will consider the abilities of the intended learners in order to convey the intended message clearly.
Librarians, who are usually involved in the process of selecting and organizing reading materials for use by others, will gain from the results of the study. It will help them to further assist the readers by selecting materials that are suitable for them. It is hoped that the youth will then be able to access information easily and hence change their behavior. They may even share the information with their peers and this will be helpful to the nation as a whole in its struggle to curb the spread of the HIV.

1.6 Research assumptions

The following assumptions are made in this study:

- The schools that were visited had implemented the AIDS education programme and are using the recommended materials for teaching the subject.
- That the students had read the HIV and AIDS materials that were available in the sampled schools.
- The sample population used for the study was representative of the whole population of secondary school students in the province.
- The respondents gave the correct information without fear or bias.

1.7 The scope

The study was limited to materials written in English language. The study was also limited to materials that are written specifically for the youth.
1.8 Limitations

Lack of finance was a major constraint since the research was self-sponsored. Time was another limitation; it limited the scope of the readability study since it should have covered even the physical characteristics of the materials under study.
CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

In this chapter, literature on factors that affect the readability of printed materials were considered. These included: the reading process, the writing process, the variables that determine the readability of materials and readability formulae.

2.1 Conceptual framework

Reading involves the comprehension and interpretation of ideas symbolized on a printed page (Dechant, 1973). This means that the reader is expected to bring meaning to the text rather than gain meaning from it. The reader does this by relating the graphic symbols with his/her experiences, previous knowledge, culture and linguistic ability. The reader needs to have acquired the necessary experience to be able to identify the symbols and associate them with the meaning. The writer needs to understand the reader’s experiences in order to write texts that will be easily comprehended.

Reading is an interactive skill as the reader draws from other experiences to decode what is read. Nuttal (1982), for example points out " ... meaning is not merely lying in the text waiting to be passively absorbed. The reader is however, actively involved in interpreting the message. There is, therefore, a close relationship between reading and writing. The writer and the reader are involved in a process of communication."
For communication to take place there must be a sender, a receiver, in this case, a writer and a reader, respectively. There must be a channel of transmission and feedback. Mcquail (1978). The channel of transmission in this case is the printed material. Feedback from the reader to the writer is important for communication to be complete.

The process of communication is clearly illustrated in the circular model by Osgood and Shramm in Mcquail and Windhall (1978). The model has been modified to suit the nature of the current research.

**Fig 2.1 The reading-writing processes of HIV and AIDS materials**

In the figure 2.1 above, the sender (writer) translates the message into a language or code that is suitable for the means of transmission and appropriate for the intended receivers (readers). The process is referred to as encoding. At this stage the writer should be careful to consider the characteristics of readers such as their language control in order to write in a readable manner and thus avoid communication breakdown. According to the model, the receiver (reader) retranslates the message in order to extract meaning. This process is referred to as decoding. The writer should consider the characteristics of the reader such as language proficiency in order to communicate clearly. The process of communication becomes complete when there is a feedback. This is because the sender obtains information as to whether the intended receiver has received the intended message. Such information is important as it can help to modify ongoing or future communication between the two parties.

The researcher assessed the printed materials used to communicate information about HIV and AIDS to Kenyan youth in secondary schools to establish whether they were appropriate for the levels at which they are used.
2.2 Definition of Readability

Different authors have defined the term readability variously, as quoted in Gilliland (1972). These definitions are given below:

English and English (1958) define it as "the quality of a written or printed communication that makes it easy for a given class of persons to understand or that induce them to continue reading. Dale and Chall (1948) define it as the sum total (including interactions) of all those elements within a given piece of printed material that affects the success with which a group of readers have with it.

McLaughlin (1968) on the other hand defines readability as "the degree to which a given class of people find certain reading matter compelling and necessarily comprehensible. These definitions stress three aspects that are pertinent in readability namely the characteristics of the readers, comprehensibility and interest. It can be assumed that people will tend to continue to read only that which they understand.

Gilliland (1972) describes readability as a problem of matching a certain group of readers with reading materials differing widely in style and complexity. The matching of the two sides will determine the extent to which books will be read with profit. The readability study of HIV and AIDS materials was based on Gilliland’s definition because it is more elaborate and some of the factors influencing readability have been stated. He stresses the fact that the materials should match with the learner’s linguistic abilities.

The research was set to find out whether the materials used to educate the youth on the dangers of infection by the HIV and AIDS match with the learners’ abilities. It is clear
that readability is related to how much a reader comprehends a message or text. A book may be considered readable when the person who reads it can understand the ideas and language presented. Thonis (1970) asserts that simple ideas may be obscured by complex language and complex ideas may be made clear by simple language.

The assessment of readability of materials is important in rank ordering them by difficulty and matching reader’s abilities to the difficulty of the material they must read. Neville (1985).

Readability studies in other fields have been carried out in Kenya but none has been done on HIV and AIDS teaching materials. Below are some of the readability studies as quoted in Ronoh (1985):

Obuya (1980) focused on the relationship between Certificate of Primary Education (CPE) comprehension testing and classroom testing practices in Primary schools. He used readability measures to determine the difficulty of CPE comprehension papers. Wario (1981) studied the readability of standard three class readers. Kukubo (1984) investigated the readability of a large number of textbooks used in Kenyan secondary schools. Ronoh (1985) investigated the readability of physics textbooks in Kenyan secondary schools.

The proposed research on the readability of HIV and AIDS materials was therefore an extension of readability research but in a new field that had not been researched on.
2.3 The Reading Process

Richards (1997) defines reading as ‘perceiving a written text in order to understand its contents’. This means that the reader has to be actively involved in the process. Brindley in Richards (1997), argues that, readers first have to make a correlation between the shape on the page and the language in their heads in order to understand a message.

Cashdan (1989) on the other hand points out that reading is more than the passive act of perceiving graphic symbols from a printed page. It is rather an interaction between each reader’s experiences, biases and purposes for reading the text. In this way, the reader is continually striving for meaning from what he or she reads and filtering that meaning through past experience.

Reading is an active process. Smith (1978) points out that readers are not passive recipients of meaning from print, but must predict if they are to comprehend. A reader has to read with enough skill and care to make the right inferences about what the writer means, and yet he has to remain objective enough to recognize differences in viewpoint between himself and the writer. To do this, he must assess all evidence – choice of words, selection of facts, and the organization of material so that he gets the intended message.

Several models have been used to describe the reading process. The human brain is the main organ in the reading process. The eyes ‘fixate’ symbols and words as they traverse the line of print. These images are then passed via the optic nerve to the brain, which processes them into meaning (Smith, 1978).
Smith qualifies this by explaining that eyes move in leaps and bounds known as ‘saccades’ (jerks). The pauses, when the eyes are stationary are known as ‘Fixations’ during which the “pictures” are taken. Normally, readers make three or four fixation per line and most people can ‘photograph’ a minimum of two inches of average print per fixation. The brain is capable of processing certain amounts of information. Any unprocessed information is kept in the ‘short term memory’ after which it is lost.

In order to write in a readable manner, the author must understand the process of reading for example, the author should be careful so as not to overload the reader’s brain with information which will be difficult for it to process, and which it cannot keep in the short term memory as the eyes continue to send it more information. This avoids what Goodman (1988) calls a ‘short circuit’ that occurs when a reader is incapable of getting the meaning from a text.

Spache, in Nuttal (1982) comments that a person cannot be said to be reading unless he also comprehends.

2.4 The Writing Process

Zamel, in Mwamisi (1985) defines writing as the process through which meaning is created. Writing entails several stages before one comes up with successful written work. This means that, writing is not a spontaneous activity. It is a process whereby an initial idea gets extended and refined.
Widdowson, in Hedge (1997) points to this tendency when he says:

"In writing one so frequently arrives at a destination not originally envisaged, by a route not yet planned for in the original itinerary."

A writer needs to allow for the interplay between writing and thinking that will lead to the creation of new ideas and improvements.

Writing is usually detached from a wide range of expressive devices that are available to a speaker, such as gesture, body movement, stress, hesitations and tone of voice. A speaker can backtrack and revise or clarify ideas as listener's questions or agree. A writer has to compensate for all these disadvantages.

A writer has to ensure that the message is clearly understood by the reader who is physically absent during the writing process.

Howard (1990) argues in support of this view when he says that writers have to construct their messages on the basis of how much shared knowledge they can assume in their readers. This means that they need start from what they think is known to the readers, being sure to be explicit where they think the information will be new to their readers.

An awareness of the reader's previous knowledge is important as it guides a writer on how best to write for particular readers. A text must be written carefully in order to convey exactly what the writer intends. If well sequenced, a text will save a reader the trouble of sorting out the order of ideas before he can begin to comprehend the meaning in the text.
Hedge (1997) remarks that:

It is the clear sense of the audience that enables a writer to select appropriate content and express it in an appropriate form and style. This will facilitate the process of communication.

The researcher is set to find out whether the materials used to teach on HIV and AIDS in secondary schools are suitable for the levels for which they are used.

2.5 Factors Affecting Text Readability

There are many factors that contribute to the readability of texts. According to Harrison (1980) and Nuttal (1982) they include cohesion, lexis, syntax, lexical coherence and text organization/coherence. Each of these factors is explained in this section.

2.5.1 Syntax: How it Influences Readability

Crystal (1995) defines syntax as the way in which words are arranged to show relationships of meaning within sentences. The length of a sentence and the position of independent clauses affect the readability of a text. The two factors affect readability as explained below.

2.5.1.1 Sentence Length in Syntax

Short sentences are more readable than long sentences (Alderson, 2000). This is so because a long sentence has several concepts which the reader may not be able to separate easily, while a shorter sentence has fewer concepts which will cause little, if
any, difficulty because they are easier to store in the short term memory. For example, a sentence where a main clause is followed by several subordinate clauses may make the reader miss the point of emphasis in the sentence.

On the other hand sentences should not be too short because, if ideas are compressed, the reader will have too few clues to reconstruct the intended message. Harrison (1980)

2.5.1.2 The Position of Independent Clauses

A reader will find it easier to comprehend information if the independent clause is placed at the beginning of a sentence. This is because the independent clause carries the main idea; other supporting ideas develop from it.

2.5.2 Lexis: How it Influences Readability

The words used in a text will determine its comprehensibility to the intended readers. There are words that are commonly used and are easier to read, they contribute to the comprehensibility of learning materials. For example, the word ‘begin’ is more readable than ‘commence’. Shorter words are also easier to read and understand than longer ones. Idioms, when used in a text may make it more interesting to read but a writer needs to consider the reader’s abilities to comprehend before including them in a text.

2.5.3 Terminology

Every profession develops a special language, which may consist of newly coined words with highly specialized meanings, which are referred to as jargon. Read (1975) remarks
that words that have meanings in a particular profession or trade may often be difficult for the average reader to understand. If a reader struggles with reading because of unknown words, this definitely will affect comprehension and take the pleasure out of reading.

2.5.4 Over-used words

Words that are overused contribute to poor writing because the reader is bored with them. For example, the word ‘very’ is overused in speaking and writing – very high, very low, very hot, very cold and very bad. Such words should be substituted with other words such as exceedingly, extremely, incredibly and excessively.

2.5.5 Text Organization and Text Readability

Coherence is achieved partly by the way in which a sentence follows on from and relates to the preceding one and partly the way in which the elements within a sentence are ordered (Howard, 1990). It also entails the consistency of the subject matter from one paragraph to another.

The overall organization of information is important in the readability of a text. Good paragraphs should have a topic sentence, which carries the main idea and should be presented at the beginning so that the reader will identify the core information in the paragraph. Other sentences in the paragraph will be supporting the main idea. Information should be in a clear sequence such that the reader can easily follow and understand.
Headings in a text make it easier to read and guide the reader to find the information they need easily. A writer should use headings to make the text more readable. Text that is coherent is much easier to comprehend than less coherent texts. For example, texts that present facts with little explanation of relationship between them, forcing readers to make many connecting inferences. Alderson (2000), points out that the inferences made by the readers may be different from what the writer intended.

2.5.5.1 Cohesion in Text Organization

According to Howard (1990), cohesion is the way in which sentences of a text are grammatically and lexically linked. It is the relationship between one sentence and another because the interpretation of a sentence depends on a previous one. The link between sentences makes the text an integrated unit. Cohesion is achieved by use of a variety of cohesive devices, which include, reference, identification, conjunction, and ellipsis.

2.5.5.2 Reference in Cohesion

Reference refers to the use of pronouns such as; it, this, he or she to link ideas across sentences. Anaphoric reference occurs when certain words in a text point backwards to preceding (more explicit) words on phrase. For example in the following sentence:

The electrician found the fault and began repairing the power cable. When he finished he went back to the depot.

The anaphora here is he which refers back to the electrician.
Cataphoric reference, on the other hand occurs when words point forward to other words, phrases, or even sentences for its interpretation. An example of cataphoric reference is shown in the sentences below:

The key to protection of endangered species is to ensure local people receive some economic benefit back from the animal. Some countries could achieve that through trade in skins and hides from elephants, which have to be culled. To its credit, the World Wildlife Fund has adopted this sensible compromise.

Reference may also be by means of demonstrative pronouns (this, that). (Howard: 1990)

A writer should use reference items carefully to ensure that the intended message reaches readers.

2.5.5.3 Ellipsis in Cohesion

Ellipsis is a cohesive device that helps to reduce redundancy. The following sentences show the use of ellipsis to avoid repetition.

1. On the other side of the road lay the fields and on the other side of the road lay the steep slopes.
2. On the other side of the road lay the fields and on the other lay the steep slopes.

In the second sentence some words have been omitted. Ellipsis is mainly used in conversations but it features as a cohesive device in instructional texts.

2.5.5.4 Conjunctions in Cohesion

Conjunctions in a text help improve its comprehensibility because they indicate a relationship between sentences. Conjunctions include: and, but, therefore, whoever, neither, because, moreover, wherever and whenever. They enable the learner to predict information to come. For example the conjunction ‘however’ notifies the learner about changing direction.
2.6 Readability formulae

Readability formulae use counts of language variables in a piece of writing in order to provide an index of probable difficulty for readers. The history of readability formulae dates back to the 1920's, where word lists containing frequently used English words were used to estimate the readability of texts in question. It was later in the 1930's that measures of sentence length and vocabulary were used. The same variables are used to date to measure text readability (Flagan, 1989).

There are several readability formulae that are used to calculate the grade level a learner is expected to have attained to be able to comprehend the message in a given text. They have been designed for different purposes and age groups. The three formulae that were used in this study were designed to be used in secondary schools and higher levels. Readability formulae are used to predict text difficulty not to measure text difficulty itself. They do not measure factors in the reader such as interest, experience and enthusiasm for a given topic. Prediction of difficulty is important because it increases the awareness of the difficulty levels of learning materials and this leads to more effectiveness in the selection of appropriate learning materials.

According to Burmeister (1974), it is possible to use two or more formulae on the same passage and get different readability levels. This is possible because word difficulty is defined differently in various formulae; they can be referred to as hard words, long words or unusual words. Colin (1980), points out that the Fog formula generally produces higher figures compared to other formulae because it was originally validated against higher
comprehension levels than other formulae. This does not make it less effective but it indicates generally that a text is difficult for given readers. All readability formulae give correct figures if used carefully as general indicators of text difficulty. Some of the formulae include the following:

2.6.1 The Powers-Sumner-Kearl Formula (1958)
This formula is suitable for primary school books, unlike the Flesch formula, which is suitable for secondary school materials. This is because it rarely produces a reading level above twelve (12).

The formula is: grade = -2.2029 + (0.0778 WDS/SEN) + (0.0455 SYLL/100W)

Where WDS/SEN = average number of words per sentence
SYLL/100W = average number of syllables per 100 words.

2.6.2 The Spache Formula (1958)
It is suitable for books below a difficulty level of 11 years. The Spache formula is:

Grade = (0.12 x WDS/SEN) + (0.082 x percent UFMWDS) + 0.659

Where WDS/SDN = average number of words per sentence
UFMWDS = unfamiliar words.

2.6.3 The Dale-Chall Formula (1948)
The Dale-Chall formula uses a word list as a basis of predicting vocabulary difficulty. The Dale list has 3000 words. The formula is as follows:
Grade = (0.1579 x PERCENT UFMWDS) + (0.0496 x WDS/SEN) + 3.6365

Where UFMWDS = unfamiliar words

WDS/SEN = Average number of words per sentence.

2.6.4 Cloze procedure

Cloze procedure was first developed by Taylor (1953) to measure readability. In Cloze procedure, the tester deletes words from the selected passage in a systematic manner; for example, deleting every fifth word in the passage. The reader is required to reinstate the deletions. The tester then uses the number of correctly reinstated words

As an index of how much a reader has understood (Colin, 1980).

If a reader has between 0 – 40% of the gaps correctly filled, he/she is reading at a level referred to as a frustration level, suggesting that the text is too difficult for the reader. If 40 – 60% of the gaps are correctly filled, the reader is reading at an instructional level. This means that he/she can partly comprehend the text and needs continued assistance. If 60 – 100% of the deletions are correctly filled, the reader is reading at an independent level, suggesting that the reader can comprehend the text alone.

2.7 Conclusion

This chapter has dealt with the major factors that affect text readability. It is important to note, however, that each of these factors in isolation may not have a major effect on the readability of a text. Instead the factors put together can make a text difficult to read. A
writer should therefore ensure that the information intended is clearly communicated to the readers.
3.0 Introduction

In this section, the procedures and strategies to be used in the study are described. This chapter focuses on the research design, the target population, the sample and the sampling procedures to be used, the research instruments, data collection procedure and data analysis.

3.1 The Study Location

The study was conducted in Nairobi province. This location was chosen because the HIV and AIDS education has been implemented in most schools in Nairobi, unlike in other provinces. Nairobi province was also chosen because of its cosmopolitan nature; it is a province with a diverse population in terms of religion race, culture and ethnic background. As an urban area, it is exposed to a lot of influence from the outside world. The impact of mass media is also more pronounced than in rural communities and this influences the urban adolescents’ source of knowledge and subsequent behavior. There was need to find out their opinions on the comprehensibility and hence the effectiveness of the HIV and AIDS printed materials as a source of information on the scourge.
3.2 The Study Population

The study population consisted of 46 public secondary schools in Nairobi province. There are two broad categories of schools in Kenya; private schools and public schools. Public schools are owned by the government. They get assistance from the government through the provision of funds, teachers and learning resources. These schools are further categorized as national, provincial, and district schools. Individuals, groups of individuals or religious organizations, own private schools.

Public schools were chosen for the study because they use the same syllabus for AIDS education, while private schools have varying initiatives to educate their students on the scourge. Public schools also have relatively equal distribution of resources such as teachers’ books, unlike in private schools where the availability of resources depends on many factors including financial ability.

A total of seven public schools were used for the study. The researcher used forms 2, 3 and 4 students from the sample schools. This is because she intended to establish the opinions of students at all the levels about the readability of HIV and AIDS materials. Form one students had not reported to schools at the time the research was undertaken. A total of twenty printed materials obtained from the schools were analyzed to find out their levels of readability. They consisted of seven books, nine magazines, two pamphlets and two brochures. According to the HIV and AIDS syllabus by K.I.E, the recommended materials include publications by K.I.E and organizations such as UNICEF, WHO, Ministry of Health, AMREF, Care Kenya and NGOs. Materials that were used were only
those targeting the youth. The researcher used all the seven books that were available and 50% of all the other materials.

3.3 The study design

The study was a descriptive survey aimed at assessing the readability levels of materials used to educate Kenyan secondary school students on how to avoid infection by the HIV. The study population consisted of printed materials, teachers of HIV and AIDS and form 1-4 students in selected public secondary schools in Nairobi Province. The sample of schools for the study was obtained through stratified sampling. Public schools in the province were categorized into five strata as follows: girls’ boarding schools, boys’ boarding schools, girls’ day schools, boys’ day schools and mixed schools. Simple random sampling was then used to select schools for the study.

The teachers were then selected through purposive sampling. Two teachers from each sample school were interviewed in the study. The students were also selected using simple random sampling. Data collection instruments included: the Flesch formula, Smog and Fog readability formulae, questionnaires and interview schedules. The readability formulae were used to analyze the levels of difficulty of the materials.

Questionnaire was administered to students to find out their attitudes about the readability of the materials and teachers were interviewed to obtain information on the comprehensibility of the materials to their students. Conclusions and recommendations were then made in relation to the obtained data.
3.4 The Sample and Sampling Procedure

Nairobi Province has 46 public secondary schools. (See Appendix a). From these schools, the researcher obtained the sample population for the study as shown below on table 3.1. The schools were first categorized by stratified sampling into five strata, namely: boys' boarding, girls' boarding, boys' day, girls' day and mixed schools.

Simple random sampling was then used to select schools for the study. This was done by writing down the names of schools on separate papers according to their respective strata to ensure that all schools had equal chances of being selected. The papers were then put in a container and shaken, each strata at a time. The researcher then picked one sample from each category except in the mixed school category where three samples were picked. The samples were picked at ratio 1:1:1:1:3 in respect to the size of each of the strata. A total of seven schools were then selected for the study.

The seven schools were 15% of the total number of public schools in the province. Ary (1972) recommends that at least 10-20% of the study population should be used for the study. From each class, simple random sampling picked 10 students and a total of 210 students were used in the study. This was done by dividing the total number of students in each class by ten to get the nth number as shown below:

\[
\text{Total no. of students per class} = \frac{\text{Nth number}}{10}
\]

Every nth student was used for the study.
A total of fourteen teachers were interviewed in the study. Two teachers from each school were selected through purposive sampling for the study. The researcher gathered teachers who taught about HIV and AIDS in each of the schools and obtained information on how long each of them had taught the subject and then picked two teachers from each school who had taught the subject for the longest time.

Twenty printed materials written for the youth, which are found in schools and some organizations in Nairobi province were used in the study. They included books, magazines, pamphlets, brochures and comic books.

Table 3.1  The sampling grid

<table>
<thead>
<tr>
<th>S/No</th>
<th>Categories of schools</th>
<th>Total no. of schools in the province</th>
<th>No. of selected schools per category</th>
<th>Selected teachers per school</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Girls boarding school</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Boys boarding school</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Girls day school</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Boys day school</td>
<td>9</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Mixed day school</td>
<td>19</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>N=47</td>
<td>N=7</td>
<td>N=14</td>
<td></td>
</tr>
</tbody>
</table>
3.5 Research instruments

The following instruments were used in the study:

3.5.1 The Flesch formula

The Flesch formula is a readability formula used in determining the reading ease of text. This formula consists of counts of language variables such as sentence length and vocabulary size, which are calculated to obtain an index showing the level of literacy that the readers ought to have attained to comprehend the message on the text. The following is the procedure used to measure readability using the Flesch formula:

- Take several hundred-word passages from the selected HIV and AIDS materials.
- Select at random where you will start counting from: middle or end of the reading passage.
- Count the number of complete sentences within the passage.
- Count the number of words within the passage.
- Divide the total number of words by the sentences to determine the number of words per sentence.
- Determine the number of syllables per 100 words (each vowel sounded in a word corresponds to one syllable).
- Use the reading ease formula to determine the reading ease score of the material under study. The reading ease formula (RE) is $RE = 206.835 - 0.846w - 0.15s$.
- Match the reading ease score with the suggested reading level.
3.5.2 The Smog Grading Formula

The following procedure is used to measure readability using the smog grading formula:

- Ten sentences are counted near the beginning, ten near the middle and ten near the end of the text.
- In the thirty selected sentences, words having more than three syllables are counted, after which the square root of the number of polysyllabic words thus counted, is estimated.
- A constant three is then added to the approximate square root. The product gives the average grade level that the learner is expected to have attained to fully comprehend the message in the text.

3.5.3 The Fog Index Formula

The following procedure is used to measure readability using the Fog index formula:

- Select hundred-word passages systematically from the selected HIV and AIDS materials.
- Determine the average sentence length by dividing the total number of words by the number of sentences.
- Determine the average number of polysyllabic (hard words) words in the passage.
- Obtain the fog index by totaling the two factors, then multiply by a constant 0.4 to get the average grade level required to comprehend the text.
3.5.4 Interview Schedule

The researcher used a structured interview to collect data from selected teachers. The teachers of HIV and AIDS, as experts, gave information based on their own judgment on the comprehensibility of the materials to the students. A total of fourteen teachers were interviewed.

3.5.5 Questionnaires

Questionnaires were administered to the sampled form 2-4 students in the selected schools in Nairobi Province. The questionnaire was administered to thirty (30) students in each of the seven schools in Nairobi Province. A total of 210 copies of the questionnaire were administered to the students to obtain information on their attitudes on the comprehensibility of the HIV and AIDS printed materials.

3.6 Pretesting of research instruments

3.6.1 Pilot Study

Before data collection, a pilot study was conducted to validate and update the research instruments. Wiersma (1985) observes that piloting is important as it helps identify misunderstandings, ambiguities and useless or inadequate items. After piloting some questions were found to be vague and they were, therefore, revised. The researcher randomly selected two schools from the schools that were left after drawing the sample population for the study. The research instruments were piloted at Highway school and Ngara girls’ school. A total of four students per school were used for the pilot study. Interviews were also carried out on one teacher from each of the schools. The teachers
who were interviewed were picked randomly. Piloting was not done on the printed materials since the readability formulae have been used previously by their proponents and proved effective. Their proponents were: (Flesch (1948) - The Flesch formula), (Gunning (1952) - The Fog index) and (McLaughlin (1969) - The Smog formula).

3.6.2 Validity

According to Lovell and Lawson (1970), validity is concerned with the extent to which a technique actually measures what it was intended to measure. The researcher validated the research instruments by consulting her supervisors and her research methodology lecturers in the department. Gall et al (1996) point out that content experts help determine content validity by defining in precise terms the domain of the specific content that the test is assumed to represent and then determine how well that content universe is sampled by the test items.

3.6.3 Reliability

Lovell and Lawson (1970) define reliability as the ability to yield the same results when repeated measurements are taken of the same subjects under the same conditions. It assumes that a researcher, using the same methods on a different study can obtain similar results as those of a previous study. In the research on readability of HIV and AIDS printed materials, the researcher used an appropriate number of samples of passages from each text and the three formulae were applied on all the sampled passages to ensure that the obtained results were reliable.
3.6.4 Ethical Considerations

The researcher first obtained a research permit from the office of the president allowing her to conduct the research. The researcher then visited the selected schools to meet the head teachers; created a rapport with them and asked for permission to carry out her research in their schools. They also agreed on the appropriate dates for her to visit their schools. The researcher also met the teachers of HIV and AIDS created a rapport with them and requested for their participation in the research. They also agreed on the appropriate dates and time for her to interview them and administer the questionnaire to their students.

3.7 Data collection procedure

Before the study was conducted, the researcher first visited the seven schools sampled for the study to obtain permission from the head teachers to conduct the study in their schools.

The researcher also met the teachers of HIV and AIDS; created a rapport with them and obtained their consent to be interviewed and also to assist the researcher in organizing the sampled students in readiness to fill the questionnaire. They also agreed on the appropriate dates and time to do that.

During the second visit, the questionnaires were first administered to the students. The teachers first introduced the researcher to the students and the researcher explained the purpose of the study and familiarized herself with the students to reduce Hawthorne
effect on the students. The researcher then administered the questionnaires and personally collected the copies of the questionnaire at the end of the exercise to avoid low returns. After administering the questionnaires, the researcher interviewed the teachers of HIV and AIDS in the sample schools.

**Scoring of the questionnaire (Question 2-12)**

All the 210 students in the seven schools responded to the questions. A marking scheme was prepared as shown in Appendix (f). The students' scores were based on the Likert type attitude scale. Scores were awarded differently for positive and negative statements as shown on table 3.2 below:

<table>
<thead>
<tr>
<th>Response</th>
<th>Positive Statements</th>
<th>Negative Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreed</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Not sure</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Disagreed</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

The mean average scores for respondents were then calculated and compared with the average score of the scale. Where the average score was more than the expected mean score, it was considered to be indicating a positive attitude. Where the average score was below the expected mean score, it was considered to be indicating negative attitude.
The expected average score was calculated by adding the lowest expected score for the scale, that is, 10, and the highest expected score for the scale, that is, 30, and then dividing by two, which is equal to twenty (20).

10 - Total number of items in the scale

1 - The lowest score of the scale

3 - The highest score of the scale

Thus the lowest expected score is \(10 \times 1 = 10\). While the highest expected score for the scale is \(10 \times 3 = 30\). The expected average scale is \(\frac{30 + 10}{2} = 20\).

Therefore, the score between the maximum and minimum was twenty (20). Hence respondents who scored below the expected average or whose average scores were the expected averages were considered to have a negative attitude. Those who scored above the expected average were considered to have a positive attitude. The items that were positive were numbered 2, 3, 4, 5, 6, 8 and negative items were numbered 7, 9, 10 and 11.

### 3.8 Data analysis

#### 3.8.1 Smog and Fog formulae data

The researcher applied the formulae on the 20 printed materials obtained and index indicating the reading ability a reader is expected to have attained in order to comprehend information from those materials. The data was presented using tables.
3.8.2 The Flesch formula data

After applying the Flesch Reading Ease formula to the HIV and AIDS printed materials, the index obtained determined the predicted reading ease of the materials. The formula to calculate the Flesch’s Reading Ease Score is: \( RE = 206.835 - 0.846W - 1.015S \)

Where: \( W = \) Number of syllables per 100 words

\( S = \) Average number of words per sentence

The higher the RE score, the easier the text. The Flesch Formula also provides a transformation table where the index obtained is related to a comprehension score out of 100 and the suggested reading levels. The table 3.3 below shows the relationship between the three factors.

Table 3.3 The relationship between RE, difficulty and reading levels

<table>
<thead>
<tr>
<th>RE Value</th>
<th>Difficulty Level</th>
<th>Required Reading Level (Class)</th>
</tr>
</thead>
<tbody>
<tr>
<td>85 - 95</td>
<td>Very easy</td>
<td>5th</td>
</tr>
<tr>
<td>75 - 85</td>
<td>Easy</td>
<td>6th</td>
</tr>
<tr>
<td>65 - 75</td>
<td>Fairly easy</td>
<td>7th</td>
</tr>
<tr>
<td>55 - 65</td>
<td>Standard</td>
<td>8th – 9th</td>
</tr>
<tr>
<td>40 - 55</td>
<td>Fairly difficult</td>
<td>10th - 12th</td>
</tr>
<tr>
<td>15 - 40</td>
<td>Difficult</td>
<td>13th – 16th</td>
</tr>
<tr>
<td>0 - 15</td>
<td>Very difficult</td>
<td>College graduate and above</td>
</tr>
</tbody>
</table>

3.8.3 Questionnaire Data

Responses from questionnaires were coded and the mean average scores from respondents were calculated and compared with the expected average score of the scale.
3.8.4 Interview schedule data

Data from interviews were analyzed both qualitatively and quantitatively. The data obtained from questionnaires and interview schedules were used to supplement the data from readability formulae.
CHAPTER FOUR
ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

The main objective of this study was to analyze HIV and AIDS printed materials to find out their readability and whether they are appropriate for the levels at which they are used. To attain the objectives, three readability formulae were used to calculate text readability; namely, Flesch, Smog and Fog readability formulae. Teachers of HIV and AIDS were also interviewed and students filled copies of questionnaire. Data is presented using tables and percentages. This section presents the data, their analysis and interpretation in three parts. First, the data obtained through the readability formulae were presented, followed by the questionnaire data and lastly, the interview schedule data.

4.1 Analysis of data obtained through the Flesch formula

The formula to calculate Flesch’s Reading Ease Score (RE) is 

\[ RE = 206.835 - 0.846W - 1.015S. \]

Where: \( W = \) number of syllables per 100 words.

\( S = \) average number of words per sentence.

The higher the RE score, the easier the text.

The printed materials were categorized into books, magazines, pamphlets and brochures.

The table below shows the book’s Reading Ease Scores and their corresponding reading levels. See appendix (e) for the titles of the texts.
### Table 4.1 Analysis of Books by the Flesch Formula

<table>
<thead>
<tr>
<th>Books</th>
<th>Syllables/100 Words</th>
<th>Average Sentence Length</th>
<th>Reading Ease Score</th>
<th>Reading Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book 1</td>
<td>163</td>
<td>22</td>
<td>47</td>
<td>10th – 12th</td>
</tr>
<tr>
<td>Book 2</td>
<td>215</td>
<td>24</td>
<td>1</td>
<td>Above 16th</td>
</tr>
<tr>
<td>Book 3</td>
<td>203</td>
<td>12</td>
<td>23</td>
<td>13th – 16th</td>
</tr>
<tr>
<td>Book 4</td>
<td>167</td>
<td>14</td>
<td>51</td>
<td>10th – 12th</td>
</tr>
<tr>
<td>Book 5</td>
<td>188</td>
<td>16</td>
<td>32</td>
<td>13th – 16th</td>
</tr>
<tr>
<td>Book 6</td>
<td>199</td>
<td>17</td>
<td>21</td>
<td>Above 16th</td>
</tr>
<tr>
<td>Book 7</td>
<td>200</td>
<td>17</td>
<td>20</td>
<td>Above 16th</td>
</tr>
</tbody>
</table>

The table 4.1 above shows that book 1 and book 4 are the only ones that were found to be suitable for secondary school (10th-12th grades). The rest are suitable for college and above levels.
Table 4.2  Analysis of Magazines by the Flesch Formula.

<table>
<thead>
<tr>
<th>Magazines</th>
<th>Syllables/100W</th>
<th>A.S.L</th>
<th>R.E.S</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magazine 1</td>
<td>172</td>
<td>12</td>
<td>50</td>
<td>10th-12th</td>
</tr>
<tr>
<td>Magazine 2</td>
<td>179</td>
<td>13</td>
<td>42</td>
<td>10th-12th</td>
</tr>
<tr>
<td>Magazine 3</td>
<td>176</td>
<td>13</td>
<td>45</td>
<td>10th-12th</td>
</tr>
<tr>
<td>Magazine 4</td>
<td>174</td>
<td>18</td>
<td>41</td>
<td>10th-12th</td>
</tr>
<tr>
<td>Magazine 5</td>
<td>221</td>
<td>19</td>
<td>01</td>
<td>Above 16th</td>
</tr>
<tr>
<td>Magazine 6</td>
<td>197</td>
<td>18</td>
<td>22</td>
<td>13th-16th</td>
</tr>
<tr>
<td>Magazine 7</td>
<td>178</td>
<td>19</td>
<td>37</td>
<td>13th-16th</td>
</tr>
<tr>
<td>Magazine 8</td>
<td>187</td>
<td>20</td>
<td>28</td>
<td>13th-16th</td>
</tr>
<tr>
<td>Magazine 9</td>
<td>194</td>
<td>15</td>
<td>27</td>
<td>13th-16th</td>
</tr>
</tbody>
</table>

From table 4.2 above, it was found that 4 (44%) of the magazines were suitable for the secondary school level (10th-12th grade), while 4 (44%) of the magazines are suitable for college level, and 1 (12%) for above college level.

Table 4.3  Analysis of Pamphlets by the Flesch Formula

<table>
<thead>
<tr>
<th>Pamphlets</th>
<th>Syllables per 100 words</th>
<th>Average Sentence Length</th>
<th>Reading Ease Score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pamphlet 1</td>
<td>169</td>
<td>13</td>
<td>51</td>
<td>10th-12th</td>
</tr>
<tr>
<td>Pamphlet 2</td>
<td>203</td>
<td>16</td>
<td>19</td>
<td>13th-16th</td>
</tr>
</tbody>
</table>

In the table 4.3 above, 1 (50%) of the pamphlets was suitable for students in secondary school and the other (50%) was not appropriate for secondary school students.
### Table 4.4 Analysis of Brochures by the Flesch Formula

<table>
<thead>
<tr>
<th>Brochures</th>
<th>Syllables per 100 Words</th>
<th>Average Sentence Length</th>
<th>Reading Ease Score</th>
<th>Grade level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brochure 1</td>
<td>205</td>
<td>18</td>
<td>15</td>
<td>10\textsuperscript{th}-12th</td>
</tr>
<tr>
<td>Brochure 2</td>
<td>191</td>
<td>11</td>
<td>34</td>
<td>13\textsuperscript{th}-16th</td>
</tr>
</tbody>
</table>

From the table 4.4 above, one of the brochures (50\%) was found to be appropriate to the students’ level of literacy.

### 4.2 Analysis of Printed Materials by the Fog and Smog Formulae

### Table 4.5 Analysis of Books

<table>
<thead>
<tr>
<th>Books</th>
<th>Fog index</th>
<th>Smog index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book 1</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Book 2</td>
<td>21</td>
<td>16</td>
</tr>
<tr>
<td>Book 3</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Book 4</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Book 5</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Book 6</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Book 7</td>
<td>14</td>
<td>12</td>
</tr>
</tbody>
</table>

The table 4.5 shows indices indicating that 2 (29\%) of books are suitable for secondary school levels, while the others are not. These books were book 3 and 4.
Table 4.6 Analysis of Magazines by the Fog and Smog Formulae

<table>
<thead>
<tr>
<th>Magazines</th>
<th>Fog index</th>
<th>Smog index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magazine 1</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Magazine 2</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Magazine 3</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Magazine 4</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Magazine 5</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Magazine 6</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Magazine 7</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Magazine 8</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Magazine 9</td>
<td>14</td>
<td>12</td>
</tr>
</tbody>
</table>

The results in table 4.6 above show that the two formulae indicate that magazine 1-4(44%) are suitable for secondary school levels.

Table 4.7 Analysis of Pamphlets by the Fog and Smog formulae

<table>
<thead>
<tr>
<th>Pamphlets</th>
<th>Fog index</th>
<th>Smog index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pamphlet 1</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Pamphlet 2</td>
<td>16</td>
<td>11</td>
</tr>
</tbody>
</table>
The table 4.7 above shows that, analysis by the smog formula classifies the materials as suitable for secondary school levels but the indices by the Fog index were found to be higher. Previous data by Flesch formula shows that pamphlet 1 is suitable for the 10\textsuperscript{th} – 12\textsuperscript{th} grade.

Table 4.8 Analysis of brochures by the fog and smog formulae

<table>
<thead>
<tr>
<th>Brochures</th>
<th>Fog index</th>
<th>Smog index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brochure 1</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>Brochure 2</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>

From the Table 4.8 above, one of brochures is suitable for secondary school levels.

4.3 Analysis of data obtained through questionnaires

The respondents were forms 2,3, and 4 students. It was important to use students from the different classes because respondents’ opinions could reflect varied attitudes from each class about the materials. The questionnaire had 13 items. Question 1 (a, b) consisted of respondents’ personal information. Questions 2-12 were statements related to HIV and AIDS materials aimed at measuring the attitudes of students using the Likert attitude scale. Question 13 was an open-ended item aimed at obtaining more information on the materials.
4.3.1 Respondent's Personal Information

Class

This information was considered important because it was expected that attitudes of students from the different classes (form 2, 3, and 4) could be varied.

Table 4.9 Respondents' Classes

<table>
<thead>
<tr>
<th>Classes</th>
<th>No. of students</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form 2</td>
<td>70</td>
<td>33.3</td>
</tr>
<tr>
<td>Form 3</td>
<td>70</td>
<td>33.3</td>
</tr>
<tr>
<td>Form 4</td>
<td>70</td>
<td>33.3</td>
</tr>
</tbody>
</table>

From the above table, the same numbers of respondents from each class were used in the study.
Age

It was considered important to consider the ages of respondents as it could show that the respondents were going through the adolescent stage (between 10 – 20 years old) and were more at risk of infection by the HIV virus as pointed out by Williams (1997).

Table 4.10  Age Range of the Respondents

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>No. of students</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>7</td>
<td>3%</td>
</tr>
<tr>
<td>15</td>
<td>26</td>
<td>12%</td>
</tr>
<tr>
<td>16</td>
<td>66</td>
<td>31%</td>
</tr>
<tr>
<td>17</td>
<td>56</td>
<td>27%</td>
</tr>
<tr>
<td>18</td>
<td>41</td>
<td>20%</td>
</tr>
<tr>
<td>19</td>
<td>12</td>
<td>6%</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>1%</td>
</tr>
</tbody>
</table>

4.3.2 Analysis of responses based on the 3-pointer Likert scale on the readability of HIV and AIDS materials.

The attitudes of the students were considered important in the research because the materials are written for them and also their attitudes may affect their judgment of whether the materials are readable or not. The responses of the students can act as a guide in writing more readable materials for the youth in future. This will ensure effective communication and enable the youth to make informed and responsible decisions that will help them avoid infection with the virus. Youth obtain a lot of information from their peers and it can be assumed that if they have the correct information, they will be of help
to fellow youth who will in turn advise others. This will give rise to a generation of healthy youth who will contribute to national development.

There were a total of 210 students who responded to the questionnaires, 70 students from each class (Form 2, 3 and 4). The attitudes of the respondents were analyzed using the three-pointer likert scale. See Appendix (f) for the scoring procedure. The tables below show the attitude scores of the respondents.
<table>
<thead>
<tr>
<th>Student</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>28</td>
<td>26</td>
<td>23</td>
<td>32</td>
<td>23</td>
<td>21</td>
<td>27</td>
<td>31</td>
<td>25</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>24</td>
<td>24</td>
<td>30</td>
<td>29</td>
<td>22</td>
<td>22</td>
<td>27</td>
<td>26</td>
<td>29</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
<th>27</th>
<th>28</th>
<th>29</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>27</td>
<td>30</td>
<td>26</td>
<td>31</td>
<td>30</td>
<td>33</td>
<td>31</td>
<td>31</td>
<td>29</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>31</th>
<th>32</th>
<th>33</th>
<th>34</th>
<th>35</th>
<th>36</th>
<th>37</th>
<th>38</th>
<th>39</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>25</td>
<td>31 *</td>
<td>27</td>
<td>33</td>
<td>32</td>
<td>30</td>
<td>20</td>
<td>26</td>
<td>21</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>41</th>
<th>42</th>
<th>43</th>
<th>44</th>
<th>45</th>
<th>46</th>
<th>47</th>
<th>48</th>
<th>49</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>29</td>
<td>31</td>
<td>28</td>
<td>33</td>
<td>29</td>
<td>20</td>
<td>32</td>
<td>25</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>51</th>
<th>52</th>
<th>53</th>
<th>54</th>
<th>55</th>
<th>56</th>
<th>57</th>
<th>58</th>
<th>59</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>29</td>
<td>29</td>
<td>20</td>
<td>24</td>
<td>21</td>
<td>25</td>
<td>21</td>
<td>27</td>
<td>28</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>61</th>
<th>62</th>
<th>63</th>
<th>64</th>
<th>65</th>
<th>66</th>
<th>67</th>
<th>68</th>
<th>69</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>20</td>
<td>29</td>
<td>30</td>
<td>30</td>
<td>31</td>
<td>26</td>
<td>31</td>
<td>30</td>
<td>31</td>
<td>22</td>
</tr>
</tbody>
</table>
The respondents were further categorized into those who scored above and below the expected average based on the criteria spelt out on Table 4.12.

Table 4.12  Form Two Respondents

<table>
<thead>
<tr>
<th></th>
<th>Score above 20</th>
<th>Score below 20</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students</td>
<td>65</td>
<td>5</td>
<td>70</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>93%</td>
<td>7%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The results in table 4.12 reveal that 93% of students in form two found the HIV and AIDS materials readable and 7% found them less readable.
Table 4.13  Attitude Scores Form 3 Respondents

<table>
<thead>
<tr>
<th>Student</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>32</td>
<td>30</td>
<td>31</td>
<td>33</td>
<td>23</td>
<td>29</td>
<td>20</td>
<td>21</td>
<td>30</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>27</td>
<td>21</td>
<td>28</td>
<td>28</td>
<td>08</td>
<td>29</td>
<td>27</td>
<td>31</td>
<td>25</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
<th>27</th>
<th>28</th>
<th>29</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>25</td>
<td>26</td>
<td>24</td>
<td>27</td>
<td>27</td>
<td>26</td>
<td>30</td>
<td>31</td>
<td>27</td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>31</th>
<th>32</th>
<th>33</th>
<th>34</th>
<th>35</th>
<th>36</th>
<th>37</th>
<th>38</th>
<th>39</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>28</td>
<td>29</td>
<td>25</td>
<td>32</td>
<td>31</td>
<td>22</td>
<td>29</td>
<td>29</td>
<td>24</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>41</th>
<th>42</th>
<th>43</th>
<th>44</th>
<th>45</th>
<th>46</th>
<th>47</th>
<th>48</th>
<th>49</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>30</td>
<td>31</td>
<td>30</td>
<td>30</td>
<td>24</td>
<td>25</td>
<td>27</td>
<td>28</td>
<td>31</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>51</th>
<th>52</th>
<th>53</th>
<th>54</th>
<th>55</th>
<th>56</th>
<th>57</th>
<th>58</th>
<th>59</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>27</td>
<td>21</td>
<td>21</td>
<td>27</td>
<td>22</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>25</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>61</th>
<th>62</th>
<th>63</th>
<th>64</th>
<th>65</th>
<th>66</th>
<th>67</th>
<th>68</th>
<th>69</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Score</td>
<td>29</td>
<td>12</td>
<td>24</td>
<td>31</td>
<td>28</td>
<td>25</td>
<td>19</td>
<td>31</td>
<td>27</td>
<td>30</td>
</tr>
</tbody>
</table>
Table 4.14  Form Three Students

<table>
<thead>
<tr>
<th></th>
<th>Score Above 20</th>
<th>Score below 20</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.of students</td>
<td>66</td>
<td>4</td>
<td>70</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>94%</td>
<td>6%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The table above, 4.14 shows that 94% of the form three students find the materials readable while 6% of them find the materials less readable.
### Table 4.15  Attitude Scores of Form 4 Respondents

<table>
<thead>
<tr>
<th>Student</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Scores</td>
<td>27</td>
<td>28</td>
<td>28</td>
<td>27</td>
<td>29</td>
<td>31</td>
<td>28</td>
<td>29</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Student</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Attitude Scores</td>
<td>29</td>
<td>23</td>
<td>24</td>
<td>31</td>
<td>29</td>
<td>19</td>
<td>23</td>
<td>32</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Student</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Attitude Scores</td>
<td>21</td>
<td>28</td>
<td>26</td>
<td>28</td>
<td>16</td>
<td>28</td>
<td>30</td>
<td>25</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>Student</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>Attitude Scores</td>
<td>22</td>
<td>31</td>
<td>29</td>
<td>27</td>
<td>29</td>
<td>31</td>
<td>23</td>
<td>28</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Student</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>Attitude Scores</td>
<td>31</td>
<td>31</td>
<td>25</td>
<td>31</td>
<td>28</td>
<td>33</td>
<td>3</td>
<td>28</td>
<td>31</td>
<td>27</td>
</tr>
<tr>
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<td>51</td>
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<td>53</td>
<td>54</td>
<td>55</td>
<td>56</td>
<td>57</td>
<td>58</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>Attitude Scores</td>
<td>24</td>
<td>28</td>
<td>27</td>
<td>31</td>
<td>30</td>
<td>24</td>
<td>22</td>
<td>29</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Student</td>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>66</td>
<td>67</td>
<td>68</td>
<td>69</td>
<td>70</td>
</tr>
<tr>
<td>Attitude Scores</td>
<td>28</td>
<td>15</td>
<td>27</td>
<td>31</td>
<td>28</td>
<td>25</td>
<td>19</td>
<td>31</td>
<td>27</td>
<td>30</td>
</tr>
</tbody>
</table>
Table 4.16  Form Four Respondents

<table>
<thead>
<tr>
<th>Score Above 20</th>
<th>Score Below 20</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.of students</td>
<td>66</td>
<td>4</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>94%</td>
<td>6%</td>
</tr>
</tbody>
</table>

From the table 4.16 above, we find that 94% of the students find the materials readable and 6% find them to be less readable.

4.3.3  Respondents’ opinions on the language used on the materials.

The respondents gave varying responses about the language of the HIV and AIDS printed materials. The responses were categorized into positive responses, negative responses and no responses. Positive responses were those that considered the language used in the materials to be comprehensible. Negative responses were those that showed that the language used in the materials was not comprehensible and some respondents gave no comments on the language of the materials. The table below shows the percentages of the respondents’ various comments.

Table 4.17  Types of Responses

<table>
<thead>
<tr>
<th>Type of responses</th>
<th>No. of respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive responses</td>
<td>111</td>
<td>53%</td>
</tr>
<tr>
<td>Negative responses</td>
<td>50</td>
<td>24%</td>
</tr>
<tr>
<td>No responses</td>
<td>49</td>
<td>23%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>210</td>
<td>100%</td>
</tr>
</tbody>
</table>
As shown in the table 4.17 above, many respondents (53%) find the HIV and AIDS materials easily comprehensible, 24% find the materials less readable while 23% did not respond to the question. Below is a list of some of the positive responses as stated by the respondents:

- The language is simple and clear.
- They have simple words, which are easy to understand.
- The pictures used help one to understand the message better.
- Some materials use language that is appealing to the youth, such as slang.
- The colourful pictures and the illustrations used in the materials make them interesting to read.

As shown in table 4.17 above, 50 (24%) of the respondents found the materials difficult to understand for the following reasons.

- The HIV and AIDS materials have unfamiliar vocabulary making it difficult to understand the message.
- Some materials have figurative language and parables, therefore, conceal the message which they are expected to convey. This gives room for misinterpretation of the message.
- Some words have been repeated too many times, making them boring to read.
- In some materials, the language is too simple and thus boring to read.
- Since it is taught through different subjects such as Biology and Social Education Ethics, some terms are too technical depending on the subject through which it is taught.
- Some of them have illustrations at all so they are not interesting to read.
The respondents who could not classify materials as either readable or not were 49 (23%) as shown in table 4.17 above. Some of these respondents gave the following reasons for their reactions. These included:

- They have limited access to the materials.
- They are not taught on HIV and AIDS.

4.4 Analysis of data obtained by interview schedule

An interview was administered to a total of 14 teachers of HIV and AIDS in Nairobi Province. This instrument was appropriate because it facilitated probing to obtain detailed information on the HIV and AIDS materials.

4.4.1 The number of years the respondents have taught the subject

This was considered important because the duration teachers had taught HIV and AIDS determined the amount of information possessed on the HIV and AIDS materials. It was found out that, out of the 14 teachers, 7 had taught for 3 years, 2 had taught for 2 years and 5 had taught for 1 year.

4.4.2 Classes taught, lessons per week and carrier subjects

The respondents taught both lower classes (forms 1 and 2) and upper classes (forms 3 and 4). It was found that most of the schools taught on HIV and AIDS through guidance and counseling sessions, which were held once every week. The teachers either facilitated the program, or invited guests to give talks on various topics including that of HIV and...
AIDS. In some schools, HIV and AIDS was taught as a subject while in others, it is integrated through subjects such as Social Education Ethics, Home science and also during class and house meetings. Table 4.18 below gives a summary of all that information.

Table 4.18  Classes taught, carrier subjects and lessons per week

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Classes Taught</th>
<th>School Type</th>
<th>Carrier Subject</th>
<th>Lessons per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Form 1 and 2</td>
<td>BD</td>
<td>Guidance and Counseling</td>
<td>1 every 2 Weeks</td>
</tr>
<tr>
<td>2</td>
<td>Form 3 and 4</td>
<td>BD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Form 1 and 2</td>
<td>GD</td>
<td>HIV and AIDS lessons. Social ethics.</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Form 3</td>
<td>GD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Form 1-4</td>
<td>MD</td>
<td>Guidance and counseling</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Form 1-4</td>
<td>MD</td>
<td>Social ethics</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Form 1-4</td>
<td>MD</td>
<td>Guidance and counseling</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Form 1-4</td>
<td>MD</td>
<td>Class meetings</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Form 1-4</td>
<td>MD</td>
<td>Guidance and counseling</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Form 1-4</td>
<td>MD</td>
<td>H/Science</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Form 1-4</td>
<td>GB</td>
<td>Guidance and Counseling</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Form 1-2</td>
<td>GB</td>
<td>HIV/AIDS class</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Form 1-4</td>
<td>BB</td>
<td>Guidance and Counseling</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Form 2</td>
<td>BB</td>
<td>Class meetings</td>
<td></td>
</tr>
</tbody>
</table>

4.4.3  BOOKS USED TO TEACH HIV and AIDS

The books used to teach the subject include the following:

- Bloom and doom
- The AIDS pandemic
• AIDS education for the youth
• Facilitators handbook

4.4.4 Other materials

Other materials used in teaching HIV and AIDS in secondary schools include magazines, pamphlets, and brochures as listed below:

- What is AIDS? - Pamphlet
- You can Help Crush AIDS - Magazine
- Youth Forum Series - Magazine
- Supporting Kenyan Youth - brochure

4.4.5 How HIV and AIDS materials were obtained

According to the respondents, materials were obtained by various means as follows:

Table 4.19 How materials were obtained

<table>
<thead>
<tr>
<th>How they were obtained</th>
<th>No. of respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bought by the school</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Given by organizations</td>
<td>6</td>
<td>44</td>
</tr>
<tr>
<td>Bought by teachers</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100</td>
</tr>
</tbody>
</table>

From the table above, we find that more materials are obtained from various organizations such as N.G.Os.
4.4.6 FACTORS GUIDING THE SELECTION OF MATERIALS

It was found out that 80% of the respondents acknowledged that apart from topics, they had no particular criteria for the selection of HIV and AIDS materials; as long as the materials had topics on HIV and AIDS which they thought were relevant to their students, they made use of them. Other teachers first find out the needs of the students and then use them as guiding criteria in selecting suitable materials for them.

4.4.7 Appropriateness of the language used on the materials

Comments on the appropriateness of the materials varied with different teachers. Nine (64%) of them found the materials suitable for their students, three (21%) of them found some of the materials too difficult for their students and two (15%) of the respondents found some materials to be oversimplified and suitable for primary school levels.

4.4.8 Relevance of the content in the HIV and AIDS materials

It was considered important to find out the relevance of the content because the materials obtained from various sources had different topics, some of which may not have been relevant to secondary school students. The respondents gave a unanimous response that they picked the content that was relevant to their students.

4.4.9 Effectiveness of what is being taught

The program of AIDS education for schools was introduced with the aim of equipping the youth with knowledge and skills that could help them lead lives free from AIDS and STDs as well as educate fellow youth on the same. It was necessary, therefore, to find
out from the teachers what was being achieved so far. Six (42.86%) out of the 14 teachers found the program to be effective as cases of infection were fewer in their schools. However, the remaining eight (57.14%) teachers were not sure about the effectiveness of the program because no evaluation had been carried out to establish the knowledge of the students on the subject and the extent to which they put that knowledge into practice.

The respondents also revealed that students were not open enough to discuss matters on HIV and AIDS because some of them had lost their relatives and the scourge had orphaned some. There’s need, therefore, that teachers of the subject should be trained in counselling and the materials used for the subject be learner centered; having learning activities that encourage discussion and sharing rather than facts only.

4.4.10 Accessibility of materials to the students

Since the study sought to find out the readability of the materials to the students, it was important to find out whether the students are given materials to read. It was found that all the students in the seven schools read materials on HIV and AIDS either from the school library or personal copies of pamphlets, brochures and leaflets that were given by organizations that were invited occasionally to talk to them.

4.4.11 Problems in reading

Most teachers had not noticed any problems with regard to reading HIV and AIDS in their students. A few of them revealed that their students had difficulties of understanding some terminologies.
4.4.12 Improvements on the materials

Teachers gave various recommendations to improve materials that may be produced in future that target the youth. These include the following:

- That the materials to be used in schools should be organized into topics that can be followed according to the syllabus.

- That the materials should be written for each class so that the language can be adjusted to suit them.

- The materials should have current information and recent statistics.

- That the youth need real examples which they can identify with, so the HIV and AIDS materials should contain even testimonies of fellow youth on how to lead responsible lives.

- That the materials should include learning activities which encourage discussion and openness among the students.

- That more posters should be produced because they pass the message easily and to many students at a time since students rarely have time to read the books on HIV and AIDS because they concentrate on examinable subjects.
CHAPTER FIVE

CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.0 Introduction

In the preceding chapters, the researcher discussed the objectives of the study, review of related literature and the research methodology. The obtained data and their interpretations were also discussed.

The purpose of the study was to analyze HIV and AIDS printed materials used in Kenyan Secondary Schools to find out their level of readability and then establish whether they are suitable for the levels for which they are used. This was done using three readability formulae, namely, Flesch, Smog and Fog formulae. Questionnaire was also administered to students while teachers of HIV and AIDS were also interviewed. The data obtained from these instruments were analyzed and interpreted.

5.1 Summary of findings

Summaries of the findings are presented below according to the objectives of the study.

5.1.1 Objective 1: To investigate the readability level of HIV and AIDS printed materials used in Kenyan secondary schools.

This objective was aimed at finding out the level of readability of the 20 printed materials used to teach HIV and AIDS in secondary schools. This was done using the three readability formulae and summaries of the results obtained are shown below.
The Flesch formula

Before applying the formulae, the materials were first categorized into four groups namely, **books, magazines, pamphlets and brochures**. According to Harrison (1980), what a formula predicts should have a strong connection with text difficulty as measured by some other criterion. In the analysis of the HIV and AIDS printed materials, a text was considered suitable if it was predicted so by at least two of the formulae that were applied.

The results obtained by the three formulae showed that three books (book 1, 3 and 4) were suitable for use by secondary school students and the remaining four were suitable for college levels and above. Four magazines (Magazine 1, 2, 3 and 4) were found to be suitable, one pamphlet (pamphlet 1) and one brochure (brochure 2) were also found to be suitable for secondary school levels.

It was found out that more magazines were available and they were more readable compared to the books, pamphlets and brochures. The Ministry of Education should ensure that schools are supplied with HIV and AIDS materials that are suitable to secondary school students.
5.1.2 Objective 2: To find out whether students in secondary schools find the materials easy or difficult to comprehend

It was considered important to find out the attitudes of the students towards the materials because they were the target audience of the writers of some of the materials. To attain this objective a 3-pointer Likert scale questionnaire was used.

The results of the questionnaire showed that a majority of the students in the three classes had a positive attitude towards the materials. This meant that they found the materials easy to comprehend. However, some of them found the materials difficult to comprehend because of factors such as difficult vocabulary and unfamiliar terminologies.

5.1.3 Objective 3: To find out whether teachers of HIV and AIDS find the materials suitable to teach HIV and AIDS in secondary schools.

The teachers who teach using those materials were thought to be in a good position to give information on the readability of the materials. This information was obtained through interviewing them. Most of the teachers found the materials suitable for their students, arguing that as long as the materials had information on HIV and AIDS, they used them. Some of them, however, argued that some of the materials had language that was too difficult for their students and they advocated for materials to be written for different classes with topics outlined on the syllabus so that the subject will be given the seriousness it deserves, that way, the youth can be saved from infection by the scourge.
The teachers also concurred on the fact that not all the information was relevant to their objectives but they picked what was relevant to them.

5.1.4 **Objective 4: To explain some factors in the printed materials that contribute to the readability of text**

The two major variables that contribute to text readability are sentence length and the number of vocabulary used. Long sentences are difficult to comprehend because the reader tends to forget the idea expressed at the beginning of the sentence before he/she finishes reading the rest of the sentence. Vocabulary difficulty is measured by word length and word frequency. Word length is measured by counting the number of syllables per word and word frequency by how often the word tends to occur in a given passage. The three readability formulae that were used in the analysis of HIV and AIDS materials use counts of these two variables to measure readability.

Other factors that influence the difficulty of materials include the use of colour and illustrations, legibility of print and text organization. (See chapter 2).

5.1.5 **Objective 5: To assign grade levels to HIV and AIDS printed materials, used to educate youth in secondary schools.**

Assigning reading/class levels to materials is important because it guides the teachers and students when obtaining materials to read. In the study, it was found out that the 20 HIV and AIDS printed materials were obtained from various sources and most of them were written for people with varying linguistic abilities and not specifically for students in
secondary schools. The language used was therefore not adjusted to suit their level of proficiency. It was necessary to assign the reading levels in order to find out which of them were suitable for secondary school students. This can be used as an extra guide to teachers in selecting suitable materials for their students.

5.2 Conclusions

1. Teachers of HIV and AIDS need to be trained on how to handle the subject, especially how to give counsel to students who have been affected by the scourge.

2. Materials on HIV and AIDS are few. Most students do not access materials because they are not available in their classrooms, though most schools have few copies in the school libraries.

3. Most students have a positive attitude towards the readability of the materials they have. However, a few students find them difficult to comprehend because of difficult words and unfamiliar terminologies.

4. The printed materials in school libraries lack current information and recent statistics of infection rates. Topics discussed in those materials do not give detailed information on the scourge but they touch on general social issues such as population and general health issues, which do not capture the attention of the youth.

5. The teachers lack a syllabus to guide them on the topics to cover and the materials to use, so they tend to repeat the same information over again and they feel that they have exhausted it in a short time.

6. Teachers of HIV and AIDS find the materials comprehensible to their students.
7. Teachers and students concentrate on the examinable subjects and they seldom have time for other programs that promote good behavior such as HIV and AIDS education.

8. Peer counseling programs are in a few schools and they are very effective in educating youth on the scourge.

5.3 Recommendations

1. Materials on HIV and AIDS should have current information and statistics that apply to Kenya and the youth.

2. Apart from printed materials, audio-visual materials should also be used. This will enable the youth to see the real situation because some of them are not convinced that HIV and AIDS is real.

3. More posters should be used as they are simple and pass the message easily and reach a large audience at a time. They can also be made interesting by using appealing colours and content, yet pass the message effectively.

4. Teachers should also be trained to use different methods to teach the subject, for example class discussions, sharing experiences, drama and other methods that can help the students to open up and discuss ways of living responsibly.

5. The writers of materials should use styles that are appealing to the readers, for example, including testimonies from the youth, jokes, stories (real and fiction).

6. The materials should include a lot of learning activities which involve the students rather than subject them to listening only.
5.4 Suggestions for further research

1. The scope of the present study limited the researcher to study printed materials only, but there is need to conduct a study should be conducted to find out the effectiveness of other media such as videos, audiotapes and resource persons in the campaign against HIV and AIDS.

2. The researcher concentrated on the major factors that affect text readability, but a research should be conducted on the other factors such as legibility of print, the size of print, the colours used in the materials, the spacing between words, the type of binding used and general text organization and how these affect text readability.

3. The research was done in an urban area therefore another research should be carried out in a rural area to find out the attitudes of teachers and students on the effectiveness of the HIV and AIDS materials in communicating the intended message.
Bibliography


APPENDICES
# Appendix (a)

## Nairobi Public Schools

<table>
<thead>
<tr>
<th>NAME</th>
<th>Type</th>
</tr>
</thead>
<tbody>
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<td>Lenana School</td>
<td>BB</td>
</tr>
<tr>
<td>Nairobi School</td>
<td>BB</td>
</tr>
<tr>
<td>Starehe Boys Centre</td>
<td>BB</td>
</tr>
<tr>
<td>Moi Forces Academy</td>
<td>BB</td>
</tr>
<tr>
<td>St. Teresa's School</td>
<td>BB</td>
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<tr>
<td>Dagoretti High School</td>
<td>BB</td>
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<td>Jamhuri High School</td>
<td>BD</td>
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<td>BD</td>
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<td>Pumwani Sec. School</td>
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<td>Aquinas High School</td>
<td>BD</td>
</tr>
<tr>
<td>Upper Hill School</td>
<td>BD</td>
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<td>BD</td>
</tr>
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<td>Precious Blood Sec. School</td>
<td>GB</td>
</tr>
<tr>
<td>State House Girls</td>
<td>GB</td>
</tr>
<tr>
<td>Buruburu Girls</td>
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ST. GEORGES SEC. SCHOOL  GB
PARKLANDS ARYA GIRLS  GD
HURUMA GIRLS HIGH SCHOOL  GD
MUSLIM GIRLS SCHOOL  GD
MOI NAIROBI GIRLS  GD
NGARA GIRLS SCHOOL  GD
OUR LADY OF MERCY  GD
ST. TERESA’S GIRLS  GD
KAMITI HIGH SCHOOL  MD
LANGATA HIGH SCHOOL  MD
KANGEMI HIGH SCHOOL  MD
H.H AGAKHAN HIGH  MD
RUTHIMITU SEC. SCHOOL  MD
KAYOLE SEC. SCHOOL  MD
RUARAKA SEC. SCHOOL  MD
NEMBU SEC. SCHOOL  MD
HOSPITAL HILL SEC. SCHOOL  MD
UHURU SEC. SCHOOL  MD
MAINA WANJIGI SEC. SCHOOL  MD
OUR LADY OF FATIMA SCHOOL  MD
DANDORA SEC. SCHOOL  MD
KAMUKUNJI SEC. SCHOOL  MD
KABETE APPROVED SCHOOL  MD
NILE ROAD SPECIAL SCHOOL MD
NILE ROAD SEC.SCHOOL MD
MUTU - INI HIGH SCHOOL MD

KEY

GB - girls’ boarding GD - girls’ day
BB - boys’ boarding BD - boys’ day
MD - mixed day

SOURCE: MINISTRY OF EDUCATION, PROVINCIAL EDUCATION OFFICE.
APPENDIX (b)

INTERVIEW SCHEDULE

TOPIC: To study the readability of HIV and AIDS printed materials used to educate Kenyan Youth.

RESPONDENTS: Teachers who teach on HIV and AIDS in selected secondary schools in Nairobi province

1 a) How long have you been teaching on HIV and AIDS?
   b) Which class/classes do you teach?

2 How many lessons do you have per week?

3 Do you teach it as a separate subject or through other subjects? If so, which Subject?

4 a) Which books do you use to teach the subject?
   b) Apart from books, which other materials do you use (magazines, pamphlets, or newsletters)?

5 How did you obtain the materials you have?

6 What criteria guides you in selecting suitable materials for your students?

7 Do you think the language used in the materials is appropriate for the level of the Students you teach? Explain your answer.

8 Comment on the relevance of the content of the printed materials to the class/classes you teach?

9 Do you think that what the students are taught is effective?

10 Do you give them materials to read?

11 Have you noticed any problem in reading in the questions they ask?
12 Mention the improvements which should be taken into consideration in producing materials.
<table>
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<tr>
<th></th>
<th></th>
<th>A</th>
<th>D</th>
<th>NS</th>
</tr>
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<tbody>
<tr>
<td>2.</td>
<td>We learn about HIV and AIDS in our school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>We are given printed materials to read in class.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The HIV and AIDS printed materials are in our school library</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The language used on the materials is simple making making it easy to comprehend the message.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>We are taught about HIV and AIDS through subjects like Biology, Home Science and Social Ethics.</td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td>The pictures used on the HIV and AIDS materials make me feel scared, so I don’t like reading them.</td>
<td></td>
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</tr>
<tr>
<td>8.</td>
<td>The materials have short sentences, which are easy to read and understand.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>They have long sentences making them difficult to comprehend.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>The HIV and AIDS materials have too many new words (vocabulary) which I don’t understand.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>The language used on the materials is too simple, I find them boring to read.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>The colours used on the materials are appealing making them enjoyable to read.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. Give any other comments on the language used on the HIV and AIDS materials you use in your class/school.
Appendix (d)

List of schools that were used for the study

<table>
<thead>
<tr>
<th>SCHOOL</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. STAREHE BOYS CENTRE</td>
<td>BB</td>
</tr>
<tr>
<td>2. BURUBURU GIRLS</td>
<td>GB</td>
</tr>
<tr>
<td>3. JAMHURI H. SCHOOL</td>
<td>BD</td>
</tr>
<tr>
<td>4. OUR LADY OF MERCY</td>
<td>GD</td>
</tr>
<tr>
<td>5. KAMKUNJI SEC. SCHOOL</td>
<td>MD</td>
</tr>
<tr>
<td>6. RUARAKA SEC. SCHOOL</td>
<td>MD</td>
</tr>
<tr>
<td>7. HOSPITAL HILL SEC SCHOOL</td>
<td>MD</td>
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</table>
APPENDIX (E)

Lists of printed materials analyzed in the study

Books

<table>
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<tr>
<th>NUMBER</th>
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<tbody>
<tr>
<td>BOOK 1</td>
<td>BLOOM OR DOOM</td>
</tr>
<tr>
<td>BOOK 2</td>
<td>THE AIDS PANDEMIC</td>
</tr>
<tr>
<td>BOOK 3</td>
<td>AIDS EDUCATION FOR THE YOUTH</td>
</tr>
<tr>
<td>BOOK 4</td>
<td>THE SHIMMERING LIGHT</td>
</tr>
<tr>
<td>BOOK 5</td>
<td>GROWING TOGETHER</td>
</tr>
<tr>
<td>BOOK 6</td>
<td>POPULATION EDUCATION BOOK 2</td>
</tr>
<tr>
<td>BOOK 7</td>
<td>POPULATION EDUCATION BOOK 3</td>
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Magazines

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>MAGAZINE 1</td>
<td>YOU CAN HELP CRUSH AIDS</td>
</tr>
<tr>
<td>MAGAZINE 2</td>
<td>PLAY THE GAME RIGHT</td>
</tr>
<tr>
<td>MAGAZINE 3</td>
<td>YOUTH FORUM VOLUME 7</td>
</tr>
<tr>
<td>MAGAZINE 4</td>
<td>YOUTH FORUM VOLUME 9</td>
</tr>
<tr>
<td>MAGAZINE 5</td>
<td>YOUTH FORUM VOLUME 10</td>
</tr>
<tr>
<td>MAGAZINE 6</td>
<td>YOUTH FORUM VOLUME</td>
</tr>
<tr>
<td>MAGAZINE 7</td>
<td>TEENS TALK</td>
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<tr>
<td>MAGAZINE 8</td>
<td>K.U PEER MAGAZINE VOLUME 4</td>
</tr>
<tr>
<td>MAGAZINE 9</td>
<td>K.U PEER MAGAZINE VOLUME 8</td>
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</table>
## PAMPHLETS

<table>
<thead>
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</thead>
<tbody>
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<td>PAMPHLET 1</td>
<td>ENJOY COMIC BOOK</td>
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<td>PAMPHLET 2</td>
<td>WHAT IS AIDS</td>
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## BROCHURES

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<td>BROCHURE 1</td>
<td>SUPPORTING KENYAN YOUTH</td>
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<tr>
<td>BROCHURE 2</td>
<td>A HEALTHY YOUTH THROUGH STD PREVENTION</td>
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</table>
## Appendix (f)

Marking Scheme for Likert-Type Student Attitude Scale

<table>
<thead>
<tr>
<th>Items</th>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>Positive</td>
</tr>
<tr>
<td>4</td>
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<td>5</td>
<td>Positive</td>
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<td>6</td>
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<td>Negative</td>
</tr>
<tr>
<td>11</td>
<td>Negative</td>
</tr>
<tr>
<td>12</td>
<td>Positive</td>
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</tbody>
</table>

### Scoring guide

#### Positive

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>Agreed (A)</td>
</tr>
<tr>
<td>2</td>
<td>Not sure (NS)</td>
</tr>
<tr>
<td>1</td>
<td>Disagreed (D)</td>
</tr>
</tbody>
</table>

#### Negative

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agreed (A)</td>
</tr>
<tr>
<td>2</td>
<td>Not sure (NS)</td>
</tr>
<tr>
<td>3</td>
<td>Disagreed (D)</td>
</tr>
</tbody>
</table>
Appendix (g) How to use readability formulae

The following worked out examples show how readability was calculated using the Flesch, Smog and Fog formulae. (Refer to appendix j) and k) for the sampled texts that were used). The passages were adopted from HIV and AIDS materials used by secondary school students.

Sample 1. Reducing sexually transmitted infections

- Flesch formula

First, three 100-word passages were selected from the beginning, the middle and the end of passage. The average sentence length (S) was obtained by dividing the number of words by the number of complete sentences as shown below:

1\textsuperscript{st} passage \[ \frac{135}{5} = 27 \]

2\textsuperscript{nd} passage \[ \frac{108}{6} = 18 \]

3\textsuperscript{rd} passage \[ \frac{116}{4} = 29 \]

\[ S = \frac{27 + 18 + 29}{3} = \frac{74}{3} = 25 \]

The average number of syllables per 100 words (W), was then determined by totaling number of syllables in the three passages and dividing by three as shown below:

\[ \frac{250 + 196 + 198}{3} = 215 \]

The reading ease formula (RE) was then applied to obtain the reading ease score:

\[ RE = 206.835 - 0.846W - 1.015S \]

\[ 206.835 - (0.846 \times 215) - 1.015 \times 25 = 0.43 \]
From the conversion table (see table 3.3) the score 0.43 indicates that the passage is suitable for readers above college level.

- **The Smog formula**

Ten sentences were first counted at the beginning, ten near the middle and ten near the end of the passage. Polysyllabic words in the 30 sentences were counted and their square root was estimated and a constant, 3, was added to it to establish the average reading level. This was done as follows:

\[
3 + \sqrt{38+51+34} = 14
\]

The reader is expected to have achieved a reading grade of 14, which is equivalent to second year university education and above.

- **The Fog readability formula**

Three 100-word passages were selected systematically from the text and the average sentence length \((S)\) was calculated by dividing the total number of words by the total number of sentences. The average number of polysyllabic words \((PSW)\) in the passages was then calculated and the two factors were added together and multiplied by a constant, 0.4, to get the average reading level that a reader requires to have attained to comprehend the text. It was done as follows:

\[
0.4 \ (S + PSW)
\]

\[
S = 25
\]

\[
PSW = \frac{23+23+23}{3} = 23
\]

Therefore, \(0.4(25+23) = 19\)
The reading level was found to be 19. The results from three formulae revealed that the HIV and AIDS material was appropriate for readers in college (university) level and above.

Sample 2: Catherine receives a letter

- Flesch formula

1\textsuperscript{st} passage \(\frac{122}{7} = 17\)

2\textsuperscript{nd} passage \(\frac{120}{6} = 20\)

3\textsuperscript{rd} passage \(\frac{116}{11} = 11\) Average sentence length \(=\frac{17+20+11}{3} = 16\)

Syllables for passage 1 = 194

\(\frac{2}{2} = 189\)

\(\frac{3}{3} = 197\)

\(\frac{194+189+197}{3} = 193\)

RES = 206.835 - (0.846*193) - (1.015*16) = 27.317

RES = 27

- Smog formula

\(3 + \sqrt{19+21+14}\)

\(3 + 7 = 10\textsuperscript{th} \) grade, suitable for form two students and above.

- Fog formula

\(0.4 \times \text{PSW}\)

\(\text{PSW} = \frac{14+14+16}{3} = 15\)

\(0.4 \times (15+16) = 12.\)
The reader needed to have acquired a reading level of at least form four to comprehend the message intended by the writer.

The findings from the HIV and AIDS printed materials indicate that sample 1 text was appropriate for students in colleges and above while sample two was appropriate for secondary school students.


Reducing sexually transmitted infections

One in every 20 youths (or 50%) contract a sexually transmitted disease each year, according to the World Health Organization (WHO). This is just an average figure and in case of our campus situation where the youths are confirmed in an enclosure and where socialization level is a little higher than anywhere else the percentage could be higher but my statement is subject to corrections. The most common of these infections in the youths are gonorrhea, chlamydia, syphilis, herpes, genital warts and HIV. Both male and female may suffer from an STI without showing symptoms, but women more so than men.

I feel this is an issue to be addressed because almost the whole students’ body in the campus fall within the bracket of the “youth” (the age between 15 - 25 years) and more so our intimate relationship partners lie in the same bracket. Whether one has made a decision to be sexually active or not, it is important to learn about STI’s and this opens my article to all members of the campus. These infections can be spread by skin to skin contact and sexual activity including but not limited to vaginal, oral and anal intercourse. Remember a “wet” kiss can transmit you HIV if there are cuts in the mouth!

There are more than 30 different types of STI’s spread through sexual contact. Most of them can be easily cured if treated early. Without diagnosis and proper treatment, many STI’s can cause serious lifelong medical complications including infertility and death. Each and everyone of us has an obligation of having keen interest on the genital area, you have a reason to suspect an STI if there are changes in the look, feel and conditions of genital area, an unusual discharge, pain or burning sensation during urination, itching, rash, bumps, open sore, unusual bleeding, blisters, boils, growths, irritations and swellings.

Comrades the problems here is with us and I feel the following measures can help us get somewhere:

1. Abstinence
   The most effective way of protecting yourself from STI’s is by avoiding intimate contact - abstaining from sex including oral and anal intercourse.

2. Condom
   The risk of contracting STI’s is greatly reduced through correct and consistent use of either condom or femidom (female condom). Using condoms with spermicide increases your protection from disease. However, it is still possible to be infected by diseases such as herpes and genital warts which can be found on or outside the genital area not protected by the condom (femidoms).

3. Abstaining from drugs and alcohol
   Alcohol and drugs impair your judgement, increasing your potential for engaging in risky sexual behaviour. Drugs and alcohol may lower your body’s resistance to fight of infection. They may also impair your ability to use condoms (femidoms) and spermicides correctly and/or consistently.

4. Limiting sexual contact with one faithful uninfected partner.
   Reducing the partners you have lowers your chance of being infected with an STI. It is possible to become infected any time a person engages in sexual activity - once is enough!

5. Getting tested for sexually transmitted infections.
   By getting tested before you become sexually active you can greatly reduce the risk of spreading an undiagnosed or untreated STI. Women can have STI’s without showing symptoms.
6. Washing the genitals before and after activity. This may reduce the spread of some STI but it is no guarantee. Using warm water and soap may wash away some of the disease causing organisms.

7. Urinating after intercourse
For males this may help to reduce the number of diseases causing organisms from spreading inside the urethra - this as well is not a guarantee.

8. Looking at your partner’s genitals.
If you see that your partner has a rash, bumps, open sore or any kind of discharge or skin irritation, you and your partner may want to get tested for possible STI - this is more visible in men.

9. Talking to your partners about STI’s.
If your partner does not take your or his/her own sexual health seriously, you may want to think twice about engaging in sexual activity with that person. Communicating your concern for maintaining very good sexual health is crucial to preventing the spread of STI.

10. Getting the right information
Ignorance has been a cause of many problems and this area is most affected. Reading appropriate articles like KU peer and visiting youth serving centres like Kenyatta University Family Welfare and Counselling Centre may furnish you the right information on STI. Other centres are:

1. Youth Welfare Guidance and Counselling Centre, 1st Avenue, Second Street Eastleigh, Tel: 72201; Box 31388 Nairobi
2. Youth Counselling Centre, Digo road, Tel: 220917, Mombasa.
3. Adolescent Counselling Clinic, Kenyatta National Hospital, Tel 722810; Box 19676 Nairobi.
4. Adolescent Counselling Pumwani Maternity Hospital, Tel: 763291 ext 167 Nairobi
5. Kenya Scouts Association Rowallan Camp, Tel 220712/225798/568111 Box 44122 Nairobi.
6. Crisis Pregnancy Ministries, Westlands Tel 445927; Box 66633 Nairobi
Catherine received a letter

Catherine was eighteen years old and in Form Four at Wesu Girls' Secondary School in Coast Province. The school was a long way from her home village, Werugha. Consequently, she had to wake up every day at about three in order to reach the school in time. She hated waking up so early and having to walk the ten kilometres to and from school.

One morning she woke up at three as usual and left for school. Upon reaching the school, she was very shocked to find the school buildings had been damaged by a storm. The buildings were so badly damaged that the pupils were told to go back home so the School Board of Governors could carry out repairs. They were told to return after six weeks.

Catherine did not like the idea of being at home doing nothing for six weeks, since she was in an examination class. However, she consoled herself with the thought that it was only the beginning of the first term and there would be plenty of time to make up for the lost ground.

A few days after she had returned home, while she was wondering what to do, her father handed her a letter. After reading it, she smiled because it was an invitation from her brother Mwachiwe to visit him in Nairobi as soon as possible. He had learnt from the television news that her school had been closed by the School Board of Governors. So, he thought about finding temporary work for his sister while she was
waiting for her school to be reopened, if she was interested. Since she had never been to Nairobi before, he included a map showing directions to his house in Parklands.

Catherine was the second born in a family of three girls and two boys. The first born was her brother Mwachiwe. He was two years older than her and was lucky to have found a job in one of the banks in Nairobi soon after completing Form Four.

Catherine was very excited by the idea of going to the city and of seeing her brother again. She ran to tell the good news to her parents, who were just about to leave for Bible study at a neighbour's house.

Mark, Catherine’s father, was a peasant farmer, but he produced much more than he needed for his own family, so he sold the surplus to raise money for his children’s education. His wife, Naomi, was a very hard-working woman whose day always started at four in the morning. Both Mark and Naomi were staunch Christians and went to a Catholic church in the village. They had always made sure that their children were well behaved and had a strict Catholic upbringing.

‘What do you think, Naomi?’ Mark asked his wife, when Catherine had asked them if it was acceptable for her to go to Nairobi.

‘I don’t mind her going, dear. But Catherine, take care. You’re still at school. Don’t get too excited with town life. We love you,’ Naomi said, looking very concerned.

‘Remember to write as soon as you have settled down,’ Mark added, and with that, they went off to the neighbours’ and left Catherine to plan her move.
Catherine left for Nairobi the next morning aboard an express *Matatu*. For a journey that normally took eight hours by ordinary bus, it took only five hours by this *Matatu* and she was in the capital city by noon. As she entered the city centre, she couldn’t help but marvel at everything she saw, especially the tall buildings and the train.
She got out of the Matatu at a busy bus station and stood looking about, trying to decide what to do, when a young man approached her and told her that he was a taxi driver. He asked her where she wanted to go and she gave him the address of her brother’s house in Parklands.

‘If it’s Parklands, that’s one thousand Kenya shillings, or if you don’t have that, you can give me eight hundred,’ he said pointing to his taxi, an old, dirty looking Datsun.

Catherine looked at the taxi and then pulled out a map from her handbag, trying to decide if the price seemed right. After studying the map for a while, she put it back in her handbag.

‘Maybe you don’t know where you’re going, Sister,’ said the taxi driver. ‘Are you sure you’re going to Parklands?’

Before she could reply, she felt someone tap her on her shoulder and when she turned round to see who it was, she couldn’t believe her eyes. It was her brother, Mwachiwe. He took her away from the taxi driver and gave her a big hug.

‘Thank God you have come!’ Catherine said, excitedly. ‘I was confused and didn’t know what to do. That young man over there offered to take me to Parklands for eight hundred Kenya shillings and I was about to agree.’

‘That’s why I decided to come,’ Mwachiwe said. ‘I realised a taxi driver would persuade you to book his taxi and cheat you out of your money. It doesn’t cost that much to Parklands, not even at night. Here,’ he continued, opening the door of his car, ‘let’s go.’

Catherine was surprised to see the beautiful car her brother was driving. It was the latest Hyundai saloon with power steering. To Catherine, the car was very
luxurious. Soft music filled the interior. She had never ridden in such a car before. To her, it was like a dream.

'This car must have cost you millions,' Catherine said to her brother as she listened to the music.

'No, I didn't pay anything for it. It's a company vehicle. I'm the Public Relations Manager, you know and it comes with the job,' Mwachiwe boasted.

After a short drive, he stopped the car at a very impressive gate. Mwachiwe hooted and a young woman came rushing to open the gate. Mwachiwe drove in and parked the car in the garage.

He got out first and opened Catherine's door. 'Do go in. This is my house,' Mwachiwe said, leading her into the living-room.

Mwachiwe showed his sister all the rooms of the house, including what would be her bedroom. She liked the room very much, and knew she would be very comfortable, but was still amazed at the luxurious lifestyle that her brother led. She was sure their parents knew nothing of how he lived.
14th July, 2003

The Principal
Highway Secondary School
Mombasa Road
NAIROBI

Dear Sir,

RE: INTRODUCTION LETTER

The bearer of this letter – Miss Rose J. Ego, is a second year Masters of Education student at Kenyatta University. As part of her M.Ed. degree requirements, she is writing a thesis entitled: "Readability of HIV/AIDS Printed Materials for Youth in Kenyan Secondary Schools: A study of Nairobi Province."

Miss Ego wishes to pilot her research questionnaires in your school. Please assist her. She will provide you with all the information that you may require about her project.

Thank you in advance for your assistance.

Yours faithfully,

DR. NDICHU GITAU
CHAIRMAN, DEPARTMENT OF EDUC. COMMUNICATION & TECHNOLOGY
OFFICE OF THE PRESIDENT

PROVINCIAL COMMISSIONER
NAIROBI AREA
P.O. Box 30124
NAIROBI

6th October ..........., 2003

Ref. No. ............. ED.12/40 VOL.IX / (79)
and date

Rose Jepkorir Ego,
Kenyatta University,
P.O. Box 43844,
NAIROBI.

RE: RESEARCH AUTHORISATION

Following your application to conduct research on 'Readability of HIV/AIDS printed materials used by students in Kenya Secondary Schools: A case study of Nairobi Province for a period ending 30th April, 2004, this office has no objection for you to carry on with your research.

JOSEPHAT SAGERO
For: PROVINCIAL COMMISSIONER
NAIROBI AREA.

C.C.

All District Officers,
NAIROBI AREA.