**Influence of Background Knowledge on Reading Comprehension Ability in Kenyan Secondary Schools**

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**Abstract**

Reading is a basic skill in the education system and the society because it is a precision to most subjects offered in the school curriculum. If students do not understand what they read, they will struggle to cope with the demand for reading in all academic disciplines, thus leading to poor academic results. This study therefore was carried out to investigate the influence of background knowledge of learners on reading comprehension ability in secondary school. The objective of this study was to establish if learners relate their background knowledge to what they read that hinders comprehension. The study was based on descriptive survey design focusing on Form three secondary school learners of Kisumu County in Kenya. Two hundred and fifty six students were sampled through systematic random sampling from a population of 855 Form three students in 16 secondary schools. Data was collected by means of classroom observation and students’ questionnaire. Data analysis revealed that learners’ background knowledge and low linguistic proficiency hindered their comprehension ability. The study concluded that background knowledge (schemata) had significant influence on reading comprehension ability. The study recommends that since learners have different schemata, instruction should be given to activate background knowledge in all areas (language, content and formal), before embarking on the reading process. The study also recommends that learners need to build their schemata by reading extensively in order to familiarize themselves with different text types and a variety of language.

**Keywords:** background knowledge, reading comprehension ability, different schemata, text types

**INTRODUCTION**

English language plays a vital role in the language service situation in Kenya (Agak, 1995; Kioko, 2001). The Kenya school curriculum by the Kenya Institute of Education (K.I.E) emphasizes the importance of English language as both a compulsory and examinable subject. The Gachathi report (1976) on education language policy advised that the English language be used from primary four to the tertiary levels. This means that English is the standard medium of instruction (Kioko, 2001 p.201) and assessment for all curriculum subjects apart from other language subjects offered in Kenya. In addition, it is the national and official language in Kenya and, the world’s lingua franca among people of diverse linguistic, geographical and social backgrounds. It is not only one of the leading media for communication in international conferences and meetings but also one of the few standard languages in the international print media. Therefore, the need to improve the standard of English in educational institutions is not just important but equally urgent as learning and teaching depends very much on English language. At the secondary school level, the English syllabus postulates that fluency in all aspects of English language will enable students to perform better not only in all other subjects whose medium of instruction is English but also all other training opportunities. It is a requirement for all learners to pass in English in order to enroll for any course at the tertiary level (K.I.E, 2002). Therefore, both policy makers and policy implementers at the secondary school level in Kenya aspire for competency in all the skills of language.

Competency in a language is enhanced by acquiring and learning the language. One of the ways language is acquired is through reading (Fedyk, 2006; Krashen, 1985). Moreover, Cox (2009) posits that reading is the most important element of a child’s education because it is a precision to every other subject and if one falls short in reading then he will struggle with the other subjects. One of the objectives of teaching reading is to enable the learners to read and comprehend literary and non literary materials (KIE, 2002). Reading skills of English language include those skills that help students to recall what they have read, comprehend it and analyze it. Comprehension requires efficient knowledge of the world and a given topic, and an efficient knowledge of the language.
Nunan (1999) explains the bottom-up theory of reading as matching the written symbols with their aural equivalents and blending to form words, and deriving meaning. McCarty (1999 cited in Duarte; n.d) has called this view ‘outside-in’ processing; referring to the idea that meaning exists in the printed page and is interpreted by the reader then taken in. Gough (1972) cited in Treiman (2001) posits that bottom-up processing focuses on how readers extract information from the printed page. This model requires the reader to reconstruct the intended meaning of a text from the smallest textual units at the bottom (letters and words) to larger units at the top (phrases and clauses) and thus relies on perceptual information (Carrell et al, 1988). This shows that readers deal with text letters and words in a relatively complete and systematic way; in a linear fashion before applying the semantic rules as the final step. According to the bottom-up model, more emphasis is given to the written or printed text and the readers are put in a passive position in which they decode whatever is written in the text in a mechanical way. The readers are passive recipients of textual information (Grabe, 1991).Miller (2002) views bottom-up processing to help students become fast and good readers, but on the other hand, without one having any efficient knowledge on the second language, this processing does not become successful. Therefore, the students need to have the knowledge of the language.

However, this view has been held with criticism as Nunan (1999) posits that we do not process print in a serial, linear, systematic way. This same view is held by Grelet (1981) who claims that if reading is to be efficient, a text should not be studied as though it were a series of independent units, but rather as a structure of longer units such as the paragraph for the whole text to be understood. Treiman (2001) asserts that readers should focus on the meaning and purpose of what they read, of the printed language rather than labouring on individual letters and sounds. Because of its weakness, the cognitive view was introduced which is the top-down model.

Top-Down Model of Reading

Theories that stress top-down processing hold the view that readers form hypotheses about which words they will encounter, and take in just enough visual information to test their hypotheses (Treiman, 2001; Goodman 1967, 1970). Top-down process is the uptake of information guided by an individual’s prior knowledge and expectations (Carrell & Eskey, 1988). This means that the reader has to bring to the text the knowledge he knows and experiences. Reading proceeds from whole to part where the reader’s prior knowledge help him have semantic cues or syntactic cues to other more specific information. Grelet (1981) argues that reading starts with global understanding and move towards detailed understanding thus for comprehension to be achieved, the structure of long units such as the paragraph or the whole text must be understood.

The top-down theory indicates that when we read for meaning, we need not read every letter or every word in each sentence, rather, we guess all the time, and as soon as we guess the second word, this helps the reader to guess the whole of the first part of the sentence (Paran, 1996).Goodman, (1967, 1970), refers to it as a ‘guessing game’ between the reader and the text. He sums the model as one that requires the reader to be active, make predictions, process information and reconstruct messages encoded by the writer.

Interactive Model of Reading

Rumelhart's interactive model was devised to overcome the deficiencies of linear model (bottom up), which transmit information in one direction only.
without allowing information from a higher level (top down) to affect that of a lower level. This was regarded as a serious deficiency hence the need for an interactive model, which permits the information contained in a higher stage of processing to influence the analysis that occurs at a lower stage. Interactive model is the combination of the two models (Carrell, 1988 et al); both bottom-up and top-down processing which should occur at all levels simultaneously (Rumelhart, 1980). The interaction in this perspective takes place at three levels: The interaction between lower-level and higher-level skills, between bottom-up processing and top-down processing, between the background knowledge presupposed in the text and the background knowledge of the reader.

The interactive model view that higher order knowledge, influences the processing at lower level. Treiman (2001) advocates that both the bottom up and top down process require hand in hand to ensure the rapid and accurate processing of information. This is supported by Alyousef (2005) who observes that reading is an interactive process between a reader and a text, which leads to reading fluency to ensure the accurate and rapid processing of information by using both, bottom-up and top-down processing. The interaction between knowledge sources, which is at the higher level, influences lower level processing. The implication is that when information from one source, such as word recognition, is deficient, the reader will rely on information from another source, for example, contextual clues or previous experience. The other issue is that the mind activates individual features (letters, groups of letters, context, syntax, semantics, topic, previous knowledge) to select the meaning and word comprehension. Semantic knowledge influences word perception (semantic knowledge) and perception of syntax for a given word depends upon the context in which the word is embedded (syntactic knowledge) and also the interpretation of what we read depends upon the context in which a text segment is embedded (lexical knowledge).

Study Design and Methodology
This study was carried out in Kisumu North District in Kisumu County. Kisumu North has approximately 4,594 students in her 16 schools (Kisumu North District Education Office, 2009). There were 855 form three students in the 16 schools. A study of the entire population was not possible; therefore, the study dealt with a sample of the population from the 16 schools in the study area. According to Alreck et al (1995), a sample of between 10%-30% of the total population is appropriate for study in the social science studies. The researchers therefore worked with 30% of the population using systematic random sampling. The researchers sampled from the Form three learners as they had already been exposed to English reading on a variety of texts and reading skills since form one. Sixteen (16) learners were selected through systematic random sampling from 16 schools to obtain two hundred and fifty six (256) learners as the sample population. This represented 30% of the entire population of 855 learners. This study involved collection of data using questionnaires and classroom observation schedule which provided accurate and in-depth information (Kerlinger, 1978; Mugenda and Mugenda 2003). The respondents were required to give opinions and the researchers described, analyzed and interpreted the required features of the influence of background knowledge of learners on reading comprehension ability. To ensure reliability in the study, the researchers conducted a pilot study in two schools which were excluded from the actual study.

STUDY FINDINGS
Background knowledge and Reading Comprehension
In order to establish if learners use background knowledge during the reading process, an effort was made to find out if the following aspects made understanding easy or determined the level of understanding: the topic, visual aids or diagrams, the type of sentence structure, the language used in the text, the length of sentences (long/short), the type of text, and the amount of vocabulary a reader. This study revealed that 217(84.8%) learners reported that the topic of the text, visual aids or diagrams, the type and length of sentences, the language used and the amount of vocabulary of the learner enabled them to comprehend easily what they read as compared to 39(15.2%). Data collected and analyzed is summarized and presented in Table 1.

Table 1: Learners Responses on Background Knowledge

<table>
<thead>
<tr>
<th>Statement</th>
<th>Frequency of Response (% of Response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A familiar topic</td>
<td>158(61.7%)</td>
</tr>
<tr>
<td>Visual aids/diagrams</td>
<td>256(100%)</td>
</tr>
<tr>
<td>Type of sentence structure</td>
<td>212(82.8%)</td>
</tr>
<tr>
<td>Language used in text</td>
<td>256(100%)</td>
</tr>
<tr>
<td>Length of the sentence</td>
<td>219(85.3%)</td>
</tr>
<tr>
<td>Type of text</td>
<td>189(73.8%)</td>
</tr>
<tr>
<td>Vocabulary of reader</td>
<td>243(94.9%)</td>
</tr>
<tr>
<td>Familiar Story</td>
<td>204(79.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>1740(84.9%)</td>
</tr>
</tbody>
</table>

Challenges Learners face that Hinder Comprehension
In this section, the researchers were interested in establishing the challenges learners encountered while reading that hindered their comprehension ability. To measure the challenges in reading comprehension ability, respondents were asked to indicate their agreement or disagreement with five Likert-type statements relating to the challenges they
encountered in the reading process. The results are summarized and presented in Table 2.

Table 2: Challenges in Comprehension Ability

<table>
<thead>
<tr>
<th>Statement</th>
<th>% Frequency of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Reasons not to understand a text?</td>
<td></td>
</tr>
<tr>
<td>a. Vocabulary</td>
<td>Strongly Agree (33.6%)</td>
</tr>
<tr>
<td>b. Long sentences</td>
<td>Agree (36.3%)</td>
</tr>
<tr>
<td>c. Story flow</td>
<td>Uncertain (3.1%)</td>
</tr>
<tr>
<td>d. Unfamiliar expressions</td>
<td>Disagree (16.8%)</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree (10.2%)</td>
</tr>
<tr>
<td>2. a) Understand word in the context.</td>
<td>86%</td>
</tr>
<tr>
<td>b) Check new word in the dictionary.</td>
<td>89%</td>
</tr>
<tr>
<td>3 Difficulty to distinguish between major and minor points.</td>
<td>65%</td>
</tr>
<tr>
<td>4 Poor retention</td>
<td>49%</td>
</tr>
<tr>
<td>Total Frequency Percentage</td>
<td>509 (24.9%)</td>
</tr>
</tbody>
</table>

In Table 2, one thousand two hundred and eight rankings (59%) agreed that they had problems in the reading process and seven hundred and fifty eight (37%) did not agree. Eighty two rankings (4%) were uncertain about the difficulties they experienced that hindered comprehension. Item 1 of Table 4.3 revealed that learners experienced the problem of not comprehending when the text had vocabulary they did not understand. This follows from the analysis that 179 (69.9%) and 69(27%) of the learners agreed and disagreed respectively that vocabulary hindered their comprehension, while 8(3.1%) were uncertain. This is further confirmed by their responses whereby 195(76.1%) agreed, 5(2%) were uncertain while 56(21.9%) disagreed that they would check the meaning of difficult words in the dictionary. Furthermore, 188(73.4%) agreed that unfamiliar expressions hindered comprehension while 61(23.9%) disagreed and 7(2.7%) were uncertain. On the other hand, 81(31.6%) agreed that they would understand difficult words from the context while 162 (63.3%) disagreed and 13(5.1%) were uncertain.

Item 2 of Table 2 shows that 127(49.6%) respondents agreed that long sentences hindered their comprehension, whereas 19(7.4%) were undecided and 111(43%) disagreed. The interpretation for this was that though the majority did not experience this difficulty, 111(43%) was a significant percentage that required attention.

Another aspect that hindered comprehension was the flow of the story. It was revealed that 147(57.4%) and 98(38.3%) of the learners agreed and disagreed respectively whereas 11 (4.3%) were uncertain. On whether learners found it difficult to distinguish between major and minor points in a text, 161(62.8%) agreed while 81(31.7%) disagreed and 14(5.5 %) were uncertain. Related to this was poor retention. It was revealed that 130(50.7%) of the learners agreed to this problem whereas 121(47.3%) did not and 5(2 %) were uncertain.

From the open-ended questions, the findings from the study showed that apart from the challenges earlier mentioned, the learners had difficulties in comprehending voluminous texts or long texts, which made them, become bored and lose track of what they were reading. The responses also revealed that the learners claimed that they lacked interest and at times read just for the sake of passing time and not taking in details. The researcher inferred this to lack of linguistic background knowledge. Lastly, the respondents gave the following responses they believed would improve comprehension:

i. Think critically about the topic.
ii. Take note of key ideas.
iii. Create time to read and concentrate.
iv. Read the passage/text more than once.
v. Reading many materials to understand the different styles and language.

Classroom Reading Problems

The reading problems the learners had were established through the sixteen lessons observed. These problems are associated with what hindered their comprehension. They included, low word power, non-fluent readers, poor retention and
difficulty in identifying main ideas. One reader each in lessons one, ten, eleven and thirteen was observed to read slowly while lessons fourteen and sixteen had each two readers reading slowly. Lessons one, two, three, five, thirteen and fifteen had each one reader not reading fluently and regressed on phrases and words, while lessons seven, eight, ten, eleven and sixteen each had two readers not reading fluently. These readers portrayed some difficulty in identifying words hence hesitated a lot while reading as in lesson 14, where the reader skipped difficult word and in lesson 13 the reader interchanged the words and also read them incorrectly as revealed in the underlined words in the scripts below. This means that the learners were poor readers and this could definitely interfere with comprehension.

Lesson 13  Topic: An Enemy of the People-H. Ibsen
STUDENT: It is you?
TEXT: Is it you?
STUDENT: I hope it will bring you nothing but good luck.
TEXT: I hope it will bring you nothing about good luck.

Lesson 14  Topic: When the Tourists Flew In
STUDENT: … our island people metamorphosed into a… carnival…
TEXT: … our island people metamorphosed into a grotesque carnival…

The learners were observed to be having low word power from the manner in which they read and how they responded to the questions asked by the teacher. Lessons one and twelve each had one learner with low word power. Lessons four, six and thirteen each had three learners with low word power. Lessons three, eight, ten, eleven and sixteen each had four learners with low word power while lessons two, seven, fourteen and sixteen each had five learners with low word power and lessons five and nine each had six learners with low word power. The learners constructed sentences incorrectly, read words wrongly and even inserted articles where they were not supposed to be as shown in the underlined words in the following lesson scripts.

Lesson 5  Topic: Young Africa’s Plea
TEACHER: What does the writer mean with let us play with the white man’s way?
STUDENT 1: He want to play with white man’s way.
STUDENT 2: To do everything whitemens do.
TEACHER: Can someone explain the effect of the word preserve on the persona’s customs?
STUDENT 3: The persona loves his customs. He did not want them to be abandon.

Lesson 2  Topic: An Enemy of the People
STUDENT: …’and this we offer to the sick flock.’
TEXT: …’and this we offer to sick flock.’

Lesson 4  Topic: An Enemy of the people-H. Ibsen
STUDENT: It is conceivable.

Two learners each in lessons four, nine, twelve and thirteen were observed to have difficulty in identifying main ideas. Lessons one, two and seven had three learners each who had difficulty in identifying main ideas while lessons three, five, six, eight, ten, eleven, fourteen, fifteen and sixteen had four learners each who could not identify main ideas. This explains the poor retention of what was read as the researcher observed that the learners either kept quiet or gave inappropriate answers to the questions asked from the text. Five learners each in lessons one, two, three, five, eight, fourteen, fifteen and sixteen had poor retention as they gave inappropriate responses, while lessons six, seven, eleven, and thirteen each had three learners with poor retention as they could not recall what they had read, ending up giving wrong responses and two learners in lesson eleven and fourteen just kept quiet. This is a significant number for wrong responses bearing in mind that the lessons were conducted for only 40 minutes.

Also observed was whether learners gave details and illustrations of what they had read. It was observed that in lessons two, three, five, eight and ten had five learners each who did not give details to their answers, while lessons one, six, seven, eleven, thirteen, fourteen, and fifteen each had four learners who did not give details, and lessons nine and sixteen each had two learners who did not give details. These learners only stated the main point and in lesson eight, eleven and sixteen, they did not even attempt to give more details even when prompted by the teacher.

The researcher also observed if the learners could understand new words and expressions in the context, and the results revealed that in lessons one, two, seven, ten, thirteen, fourteen and fifteen each had four learners who did not understand words in the context, while lessons three, five, eight, and sixteen had each two learners who did not understand words in the context. The learners in lesson five, seven, eight, fourteen and fifteen made references to the dictionary, while those in lessons one, three, ten and sixteen relied on the teacher to explain the meaning.
The learners in lessons two and thirteen were to find the meaning of the words as assignment. The results revealed that the learners had challenges that interfered with their comprehension ability and there was need for these issues to be addressed for comprehension to be effective.

DISCUSSIONS OF FINDINGS
The main purpose of this study was to investigate the influence of background knowledge on reading comprehension ability in Kenyan secondary schools. The findings of the study were discussed sequentially according to the objectives upon which this study was based. Reference was made to related literature in relation to the collected data. This was used to shed light on the issues under study and it is on this basis that conclusions and recommendations were made.

Background Knowledge and Reading Comprehension Ability
This study sought to investigate the Influence of Background Knowledge of Learners on Reading Comprehension Ability. The first objective of this study was to establish if learners relate their background knowledge to what they read. The analyzed results indicated that learners agreed that background knowledge enhanced comprehension. These results support the schema theory on reading comprehension and research on L2 reading where background knowledge plays an important role in comprehension ability as Wallace (2001) asserts that in the reading process, readers integrate the new information from the text into their preexisting schemata.

The learners’ background knowledge of the text especially content knowledge enabled them understand the texts whose topic and subject matter was familiar to them compared to the texts that they did not have content knowledge. This was realized when the learners revealed that they could understand texts that had a similar topic and subject matter to ones they had read before. This study supports what Ahmad (2006) in his study states that the more the reader knows about the topic, the more easily and quickly he gets the information of the text as topic familiarity can be exceedingly a significant factor in affecting L2 comprehension. On the other hand, Aebersold & Field (1997) in Stott (2001) posits that, ‘if the topic…is outside of their experience or base of knowledge, they are adrift on an unknown sea.’ The results therefore confirm that the learners had the domain for the topic and so were able to comprehend those texts without any difficulty as they had the correct schema.

The learners were also able to understand texts set from their community as compared to those from other communities. The number and familiarity of ideas being communicated in the text contribute to the difficulty or ease of understanding as well. If the ideas being communicated are unknown to the reader, comprehension will not occur without support. Also, if there are many ideas included in a text that are not well-known, that text will be more complicated for a reader to understand. Learners acquire their experiences and knowledge of the world from what surrounds them and when they encounter stories that talk about the contemporary issues in their society they are able to understand them with ease compared to those from different setups that have different cultures. The finding of this study is similar to the study by Nankau (2004) on Chinese EFL reading class. Nankau’s study revealed that cultural background knowledge played a significant role in reading comprehension. In relation to this, a study by Alptekin (2006) in Martinez (2009) illustrated that when cultural elements of a short story are nativized to make the text culturally more familiar, students can make better inferences than when they read the original but culturally-remote story. This study confirmed that texts that contain culturally familiar content schemas are easier to process as they enhanced the learners’ comprehension ability, since they already had a schema for it and were able to activate it.

The results of this study also confirmed that the linguistic ability of the learners influenced their ability to understand what they read. The learners’ ability to comprehend was not only enhanced by the level of language used in the text but also their language competency. The amount of vocabulary and linguistic knowledge the learners possessed enabled them to either understand or not understand the texts they read. This is an indication that linguistic knowledge was important in understanding of the text and adequate linguistic knowledge hindered comprehension as revealed from what was observed from the classroom. This result is similar to a study by Alptekin (2006) who found that while a nativized text increased students’ ability to make inferences, it did not make up for their lack of linguistic skill (Alptekin, 2006 in Martinez, 2009).

The results indicated that the learners were linguistically handicapped and lacked the correct schema to activate from their LTM; therefore, they were unable to understand texts with a higher language level than what they possessed. The learners were also not exposed to a large vocabulary as studies by (Miller 2002; Alderson, 2000; Carrell, 1988; Eskey & Grabe, 1984), showed that a large vocabulary is not only important, but it is a prerequisite to fluent reading skills; and the importance of vocabulary is in the number of times that these words are encountered and retrieved in texts. This indicates that learners should have linguistic knowledge in order to understand what they
read; even when they are presented with unfamiliar texts.

Similarly, Alderson (2000) found that higher linguistic proficiency could, to a point, make up for lack of subject knowledge and vice versa. The implication in this case is that the linguistic competence is vital for comprehension and learners need to build their vocabulary and linguistic schema by reading extensively. This enables them familiarize themselves with different language register so as when they encounter different texts, they can go beyond word level and employ top-down strategies of reading as reading needs a sufficient amount of L2 knowledge (Grabe, 1997).

This study also confirmed that the type or genre of text influenced the learner’s comprehension. The results of the study indicated that the learners had difficulty in understanding texts that had long sentences and those that did not conform to the normal straight forward plot of a story. The learners were not able to understand these texts as they were not familiar with the organization of the text, such as how the main ideas and supporting details are laid out and conveyed or how events are sequenced. The plot of a story can either be straight forward or intertwined depending on the genre of the text. The syntactic structure of a text determines the type/genre of text in that a cohesive text gives the reader the ability to make more connections to what is already known and to ideas within the text as it is read, contributing to better comprehension than a text that does not have that common cohesive thread to tie ideas together.

The results of this study concur with existing literature that notes that the knowledge of the genre helps the reader to better predict what they are going to read, how it will be organized and even the kind of vocabulary and syntactic structures they are likely to encounter, (Harmer, 2001). However, Carrell (1984) in her study revealed that when learners know the text structure, they improve on comprehension as different materials bear different characteristics. The learners in this study did not have formal schema to be activated resulting to inability to comprehend.

Generally the study indicated that the learners’ content schema enhanced comprehension and their lack of formal and linguistic schema hindered comprehension. Butcher, & Kintsch (2003) posit that schema is a crucial component of reading comprehension and the more background knowledge a reader has that connects with the text being read, the more likely the reader will be able to make sense of what is being read.

CONCLUSION
The main purpose of this study was to investigate the influence of background knowledge on reading comprehension ability in Kenyan secondary schools. Based on the findings of the study, this paper concludes that the learners did not have linguistic schemata and so this hindered their comprehension ability. The ability to understand a text is based not only on the learner’s schemata but on the ability to activate the correct schema, and the extent to which that schema is activated during processing through reading strategies. It was confirmed that background knowledge (linguistic, formal and content) influenced comprehension ability of the learners.

RECOMMENDATIONS
From the findings, summary and conclusions of this study, policy makers and curriculum developers, through Kenya Institute and Curriculum Development need to consider comprehension ability when selecting class readers and reading comprehension passages in the text as this may predict reading success.

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