



## INFLUENCE OF DEAF STUDENTS' ATTITUDE TOWARDS READING ON ACADEMIC ACHIEVEMENT IN ENGLISH READING COMPREHENSION IN SECONDARY SCHOOLS IN KENYA

Everline Nyokabi Maina<sup>1i</sup>,

Edwards Joash Kochung<sup>2</sup>,

Omondi Oketch<sup>3</sup>

<sup>1</sup>Dr.,

Department of Special Needs Education and Rehabilitation,

Maseno University,

Kenya

<sup>2</sup>Prof.,

Department of Special Needs Education and Rehabilitation,

Maseno University,

Kenya

<sup>3</sup>Prof.,

Department of Information Science,

Language and Communication Studies,

Technical University of Kenya,

Kenya

### Abstract:

The academic achievement of deaf students in English in the Kenya Certificate of Secondary Education (KCSE) examination has continuously been below average, with a mean of below 6.0 out of the possible mean of 12 for the past five years. Reading comprehension contributes to 32.5% of the total marks in the KCSE English examination. Existing studies attribute the low academic achievement to inadequate knowledge of English vocabulary and grammar, with limited studies focusing on attitude. This current study, therefore, focused on determining the influence of deaf students' attitudes towards reading academic achievement in reading comprehension in secondary schools in Kenya. Using descriptive survey and correlational research designs, data were gathered from four secondary schools for the deaf in Kenya. The study established that deaf students had a positive attitude towards reading (Mean=3.51). Negative attitudes were nevertheless depicted in reading texts that had a lot of vocabularies (Mean=2.48); and reading texts that were long (Mean=2.39). The students also believed that reading was difficult (Mean=2.43); that they were not good at reading (Mean=2.47); and did not feel confident in participating in class reading sessions (Mean=2.71). Their attitude towards reading influenced academic achievement ( $r=0.833$ ,  $p<0.05$ ). A correlation of  $r =$

<sup>i</sup> Correspondence: email [everlinenyokabi@gmail.com](mailto:everlinenyokabi@gmail.com)

0.833 further shows that the shared variance is equivalent to 69.4% ( $r^2 = 0.694$ ), implying that 69.4% of the variance in deaf students' achievement in reading comprehension can be explained by attitude towards reading. The study recommends motivation of deaf students by teachers to improve their reading culture, and explicit teaching and scaffolding of effective reading strategies to enhance reading comprehension. The findings of this study may be used by curriculum developers and teachers in enhancing English reading comprehension among deaf students.

**Keywords:** attitude towards reading, deaf students, English reading comprehension academic achievement

## 1. Introduction

Existing evidence indicates that the reading development level of deaf students has been low throughout the school years (Wauters, Van Bon & Tellings, 2006). On average, the reading comprehension level of deaf students is at fourth-grade upon high school graduation (Traxler, 2000; Gallaudet Research Institute, 2002; Singleton, Morgan, DiGello, Wiles, & Rivers, 2004; Luckner, Sebald, Cooney, Young, & Muir, 2006). The low level of comprehension has been associated with difficulties in sub-skills necessary for effective reading comprehension. Consequently, they demonstrate one or several of the following behaviors: effortful word recognition, limited vocabulary, a lack of understanding of figurative language, weak topic knowledge, a slow reading rate, inadequate understanding of syntax, limited knowledge of different genres, a lack of awareness of text organization, a limited repertoire of comprehension strategies, failure to monitor comprehension, lack of motivation and avoidance of reading as much as possible (Kelly, 2003; Chi, 2000).

According to Richeck, List and Lerner (1989), the final success of the teaching and learning process is strongly affected by the reader's attitude. Deaf students' attitude towards reading is therefore an essential factor that may affect their reading performance (Lipson & Wixson, 2003).

## 2. Literature Review

Reading attitude is described as a state of mind, accompanied by feelings and emotions that make reading more or less probable. Reading attitudes are learnt characteristics that determine whether students engage in or avoid reading activities. They can be influenced by students' self-concept, levels of reading ability and interests, attitudes and behaviors of their parents, peers and teachers (Harris & Sipay, 1990; Garrett, 2002; Baker, 2003). Research indicates that success in reading skills correlates with attitude towards reading (Guthrie & Wigfield, 2000; Wigfield & Asher, 2002; Morgan & Fuchs, 2007). In this regard, it has been concluded that students' attitude towards reading directly affects their achievement in reading comprehension. Alternatively, students' success in reading

comprehension makes them develop positive attitudes towards reading (Kush, Matley & Brookhart, 2005).

Reading ability is a factor that can predict reading attitude (Sainsbury & Schagen, 2004). According to Woolfolk-Hoy (2005), it is natural to predict that poorer readers, who have reason to expect frustrating outcomes, will tend to harbor more negative attitudes than better readers. Similarly, a reader's history of success or frustration plays a central role in shaping attitude. Students may avoid reading and the associated reading tasks in school because they lack the necessary skills and conceptual knowledge to effectively engage with a broad range of texts. As students get older and move through the primary years, struggling ones often apply task avoidance strategies since their self-efficacy, beliefs and general attitudes towards reading become increasingly negative.

Parental involvement and home environment play a part in the establishment of reading attitude. If reading is seen as a positive way to spend time and encouraged at home, it is more likely that the students will have a positive attitude towards it. It has been found that it is not necessary for parents to be avid readers, as long as they encourage and promote reading as an important and positive way of spending time (Sainsbury & Schagen, 2004; Klauda, 2009). Results of a study by Partin and Gillespie (2002) indicate that having a literary environment at home with a variety of reading materials contributes to a positive reading attitude among adolescents. In addition, time spent in reading directly relates to reading success and is in turn associated with positive attitudes towards additional reading, increased knowledge of the world, and provisions for worthwhile life experiences (National Reading Panel, 2000).

For many deaf readers, the reading experience can be described as frustrating and unsatisfactory. Failure is not fun, so it is not surprising that unskilled readers have unfavorable attitudes towards reading (Garner, Alexander & Hare, 1991). In addition to low reading skills, many deaf readers lack self-confidence as independent, efficient readers (Ewoldt, 1986). Consequently, reading is avoided because it is not a pleasurable activity. Thus, the habits of readers who are deaf establish a vicious cycle: the less they read, the less they practice and build reading and language skills (Chow, 2003).

In their study on reading levels of deaf Spanish students, Monreal and Hernandez (2005) found that at the end of primary school (mean age 13 years), the students had reading levels similar to or lower than the reading levels of hearing students at the onset of primary school education (mean age 7 years). In addition, the students had an indifferent attitude towards reading. This study, however, was done in elementary schools where reading was done in Spanish and not English. Similarly, Morgan, Fuchs, Compton, Cordray, and Fuchs (2008) established that first-grade hearing children who experienced early and consistent reading failure had lower levels of reading motivation, saw themselves as less competent readers, and had more negative attitudes towards reading than children who experienced early success in reading. This study nonetheless did not involve secondary school deaf students.

In a study on understanding the motivation of deaf adolescent Latino struggling readers established, Herzig (2009) reported that regardless of how deaf students felt

about reading, they recognized that reading was important in schoolwork and accomplishing their future goals. However, they perceived reading as an academic activity and did not count reading for enjoyment among their reading experiences or as their purpose for reading. These findings were, however, based on interview reports of only four deaf students in elementary school. Parault and Williams (2010), in their study of reading motivation, reading amount, and text comprehension, further found that text comprehension was associated with the reading motivation and dimensions of challenge. In addition, text comprehension was associated with the amount of reading for personal enjoyment. The results of this study were, however, based on a small sample size of 24 deaf adults at the university level. A larger sample size would possibly have yielded different and more reliable results. In addition, the reading experience of deaf adults at the university level is likely to be different from that of secondary school deaf students, hence the need for this study.

Loh and Tse (2009) examined the relationship between reading attitudes, self-concepts as readers, and reading performance of Chinese fourth-grade students in Hong Kong. The study revealed that there were no significant relationships between attitudes, self-concepts, and the students' reading performance in both English and Chinese. The study, however, engaged hearing students only. Mellet and Crow (2009) also investigated the relationship between selected affective factors and achievement in English among secondary school students in Zimbabwe. The results of the study revealed that attitudes towards English, students' self-concept of academic ability and students' perception of their teachers of English correlated significantly with their academic achievement. On the other hand, Kiptui and Mbugua (2009), conducted a study to determine the psychological factors that contributed to poor achievement in the English language in secondary schools in Kenya. They found that a negative attitude towards English was one of the factors that affected academic achievement. Studies by Mellet and Crow (2009) and Kiptui and Mbugua (2009) nevertheless focused on hearing students and English in general.

The findings of reviewed studies in deaf education suggest that the challenges of deaf students in reading have an implication on attitude and achievement. There was a need, therefore, to establish the influence of deaf students' attitude towards reading on academic achievement in English reading comprehension in secondary schools in Kenya, which was not determined by the foregoing studies.

### **3. Methodology**

#### **3.1 Research Design**

Descriptive survey and correlational research designs were adopted for this study. A descriptive research design is used to gather information on the nature or condition of a present situation. Past events and how they relate to current conditions are also considered (Cresswell, 2009; Best & Kahn, 2006). The use of the design is advantageous in that a combination of procedures such as questionnaires, interviews and observations

is employed, providing an opportunity for triangulation (Cohen, Manion & Morison, 2000; Kombo & Tromp, 2006). Correlational design was used because it explores relationships between two or more variables (Cresswell, 2009). The use of the design maximises the generalisability to situations because it measures variables in their natural settings (Steg, Buunk & Rothengatter, 2008). The combination of descriptive survey and correlational research designs in this study, therefore, enabled the researcher to find out facts, seek opinions, determine relationships, describe, analyse and interpret data on the influence of deaf students' attitude towards reading on academic achievement in English reading comprehension in secondary schools in Kenya

### **3.2 Study Population**

The study population included 88 form four deaf students. Four deaf students were considered in this study because they had covered an adequate portion of the English curriculum and had adequate experience. This put them in a better position to give informed opinions and views on the teaching and learning of English reading comprehension. Additionally, their achievement in reading comprehension in the county mock examinations depicted the output of the teaching and learning practices employed.

### **3.3 Sample and Sampling Techniques**

Purposive sampling technique was used to select 79(89.8%) form four deaf students. The technique involves the use of the researcher's discretion in selecting cases that best meet the research objectives. It is normally used when the researcher wishes to select cases that are particularly informative (Saunders, Lewis & Thornhill, 2009). In this study, the technique allowed the researcher to select form four deaf students who had already registered for KCSE and County mock examinations and had covered the secondary school curriculum content to a larger extent, hence experienced in English grammar, vocabulary and comprehension.

### **3.4 Instruments of Data Collection**

A student questionnaire and document analysis guide were used to collect data from form four deaf students. Questionnaires allow the collection of information over a short period of time, especially when the population is large and time is limited (Gall, Gall & Borg, 2007), hence considered appropriate for this study. The instrument was used to establish an attitude towards reading. A rating scale was used to establish the attitude of deaf students towards reading and the perspectives of teachers of English on reading comprehension teaching strategies. The positively stated items on attitude scales were coded on a five-point rating scale.

Document analysis is a technique used to categorise, investigate, interpret and identify the limitations of written documents (Payne & Payne, 2004). It has the potential for revealing information that a respondent is not ready to share or may not be available during observations. It further provides first-hand information on the kind of written feedback given by students (Merriam, 2001). Achievement tests have been recognized as

crucial documents for establishing the influences of teaching methods (Best & Kahn, 2006). This study, therefore, used a document analysis guide to obtain information about deaf students' achievement in English reading comprehension. The documents analyzed included form four deaf students' county mock English paper two examination marked scripts. The county mock examination was considered appropriate for this study, first, because it has been found to be a strong predictor of students' performance in KCSE (Njuguna, 2006; Kipng'etich, 2012; Odhiambo, 2013; Andala, Digolo & Kamande, 2014). Secondly, the examination is comprehensive and done at a time when form four students have covered much of the syllabus content. Finally, individual students' marked scripts were accessible. This made it possible to obtain detailed information on achievement in English reading comprehension.

### **3.5 Validity of the Research Instruments**

Validity refers to the degree to which results obtained from analysis of data actually represent the phenomenon under study (Mugenda & Mugenda, 2003). In this study, face and content validity were considered. Face validity is a qualitative means of ascertaining whether a measure, on the face of it, appears to reflect the content of a concept (Bryman & Bell, 2003). Content validity, on the other hand, is a qualitative means of ensuring that a measure includes an adequate and representative set of items to cover a concept (Drost, 2011). Consequently, the determination of the face and content validity of the research instrument in this study guaranteed accuracy and connection among the variables measured. Normally, face and content validity are ensured by obtaining subjective judgments from the experts in the concerned field (Bryman & Bell, 2003).

### **3.6 Reliability of the Research Instruments**

According to Best and Kahn (2006), reliability refers to the extent to which a research instrument measures whatever it is meant to measure consistently. The reliability of the research instruments was established through a pilot study 9 students (10.2%) who did not take part in the actual study.

Test re-test method was used to establish the reliability of the questionnaire and interview schedule. The instruments were administered twice at an interval of two weeks. Pearson's product-moment correlation coefficient was used to establish the reliability of the students' attitude scale. The acceptable reliability coefficient was set at of 0.70 and above at an alpha level of 0.05 as recommended by Wuensch (2012). The instrument yielded reliability coefficients of 0.74, which was acceptable. Any inadequacies, inconsistencies and weaknesses of the research instrument identified during the pilot study were corrected.

### **3.7 Data Collection Procedures**

Before conducting the research, permission was sought from the School of Graduate Studies, Maseno University. Courtesy calls were paid to the County Education Officers. Thereafter, a visit to the schools was made to obtain permission from the principals on

behalf of the students, meet the respondents for public relations, and make necessary arrangements. Subsequent visits were made to the schools to administer the questionnaire. Each student was given a copy of the questionnaires and advised not to write their names on it. The researcher then explained the purpose of the study and assured them of the confidentiality of the information provided. The need to provide honest responses was emphasized. Moreover, the researcher explained to the students in Kenyan Sign Language the instructions and other terms used in the questionnaire for better understanding. Clarifications were also provided upon request. After filling in the questionnaires, they were immediately collected to avoid loss and collusion.

### **3.8 Data Analysis**

Quantitative data collected from the questionnaire and document analysis were analysed using descriptive statistics such as frequency counts and percentages, means and Pearson's product-moment correlation ( $r$ ). Qualitative data from open-ended questions were analysed and categorized into emergent themes, which were reported.

Score values were assigned to the students' questionnaire as follows: Definitely True (DT) = 5 points, True (T) = 4 points, Somewhat True (ST) = 3 points, Not True (NT) = 2 points and Definitely Not True (DNT) = 1 point. For negatively stated statements, the scoring procedure was reversed as follows: Definitely True (DT) = 1; True (T) = 2; Somewhat True (ST) = 3; Not True (T) = 4; and Definitely Not True (DNT) = 5. A mean score of 2.9 and below was interpreted as negative, between 3.0 and 3.4 as neutral and 3.5 and above as positive.

Pearson's product-moment correlation ( $r$ ) was used to establish the influence of deaf students' attitude on academic achievement in English reading comprehension. The significance level ( $\alpha$ ) was set at 0.05.

### **3.9 Ethical Considerations**

To uphold ethical standards, participants were informed of the study's purpose and procedures through their school principals. Participation was strictly voluntary and free from coercion. To safeguard participant identities, anonymity and confidentiality were maintained using pseudonyms.

## **4. Results and Discussion**

### **4.1 Attitude of Deaf Students Towards Reading**

The students' attitudes were assessed using a rating scale. Data regarding the attitude of deaf students towards reading is presented in Table 1.

**Table 1:** Attitude of Deaf Students towards Reading (n=79)

	<b>Statements</b>	<b>Mean</b>
1.	As a deaf student, I can never be a good reader	3.68
2.	Reading a book is something I like to do often	3.43
3.	People who read a lot are knowledgeable	4.32
4.	Reading becomes boring after a short time	3.61
5.	I think libraries are a great place to spend time	3.66
6.	Reading is for learning but not enjoyment	3.62
7.	Knowing how to read well is not very important	4.13
8.	Reading is difficult for me	2.43
9.	There should be more free reading time in class	4.16
10.	When someone gives me a book for a present, I feel very happy	3.94
11.	If someone discusses an interesting book I look forward to reading it	3.96
12.	I exchange reading materials with my friends	3.92
13.	I only read because it is a must	3.92
14.	I do not enjoy reading texts with a lot of vocabularies	2.48
15.	Short stories are no fun to read	4.13
16.	I love reading texts that are long	2.39
17.	I do not feel confident in participating in class reading sessions	2.71
18.	I am good at reading	2.47
19.	Reading is not important because I don't plan to get a job that requires advanced skills in reading	4.30
20.	I enjoy reading because my teacher encourages me to read	2.43
	<b>Overall Mean</b>	<b>3.51</b>

As shown in Table 1, the overall mean of 3.51 indicated that the general attitude of form four deaf students towards reading was positive. The positive attitude towards reading was evident in statements such as: People who read a lot are knowledgeable (Mean=4.32); knowing how to read well is not very important (Mean=4.13); reading is not important because I do not plan to get a job that requires advanced skills in reading (Mean=4.31); and there should be more free reading time in class (Mean= 4.16). Negative attitudes were nevertheless depicted in reading texts which had a lot of vocabulary (Mean=2.48); and reading texts that were long (Mean=2.39). The students also believed that reading was difficult (Mean=2.43); that they were not good at reading (Mean=2.47); and did not feel confident in participating in class reading sessions (Mean=2.71). In addition, a lack of encouragement from teachers seemed to bring out negativity towards the enjoyment of reading (Mean=2.43).

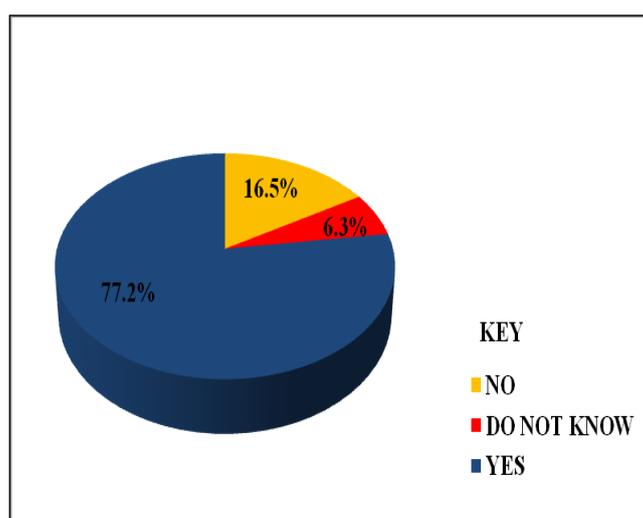
The general positive attitude towards reading contradicts the results of Monreal and Hernandez (2005), which showed that deaf students had an indifferent attitude towards reading. This is a significant finding that defies previous notions of deaf students having negative attitudes towards reading as a result of the challenges they experienced. The positive attitude may be linked to deaf students' understanding of the importance of reading, evident in the mean values on the statements related to the importance of reading (see Table 19). Nevertheless, the general positive attitude towards reading may be interpreted as weak and not static in that the students still believed that they were not

good at reading and that reading was difficult. They also depicted negative attitudes towards texts that were long and had a lot of vocabularies.

A negative attitude towards long texts which had a lot of vocabularies may be associated with deaf students' language difficulties. Reading such texts demands high cognitive engagement in handling the large amounts of information and vocabulary. This strains the working memory, thereby rendering reading a laborious and stressful task. Moreover, figuring out the main ideas in long texts may not be easy for deaf students. Consequently, the students are likely to be apathetic when they encounter long texts or those that have a lot of vocabularies. Their interest may only be to get a superficial impression of the text and not a deeper understanding. This affects achievement in comprehension in that less effort is put in comprehending a text due to the formed opinion about long texts or texts that have a lot of vocabularies.

The finding that deaf students had a negative self-concept of themselves as good readers is consistent with the results of Ewoldt (1986) and Morgan, Fuchs, Compton, and Cordray (2008). The negative self-concept denotes a lack of confidence in them as efficient readers, exemplified by the negative response to their confidence in participating in class reading sessions (Mean=2.71). It is also an acknowledgement of the difficulties that deaf students experience in reading, which makes them shy away or avoid reading in the presence of the teacher and peers to save face. This was evident during classroom observations, where students who were confident in reading volunteered to read passages while others shied off, even with the teachers' request. A negative self-concept implies that deaf students are likely to focus on their inadequacies, which interfere with the thought processes, persistence and motivation in reading. This ultimately has a depressing effect on achievement in reading comprehension.

Deaf students were further asked to indicate whether they liked reading or not. The responses were as illustrated in Figure 3.



**Figure 1:** Students' Responses on Liking of Reading (n=79)

Figure 1 illustrates deaf students' responses to the liking of reading. From the figure 61(77.2%) students liked reading, 13(16.5%) of the students did not like reading, and 5 (6.3%) of the students did not know whether they liked reading or not. It can therefore be concluded that most deaf students liked reading.

The reasons provided by the 61 (77.2%) deaf students who liked reading included:

- 1) To pass examinations 34(55.7%),
- 2) Important in career development 22(36.1%),
- 3) To be updated with new information 17(27.9%),
- 4) Reading facilitates understanding of other subjects 13(21.3%),
- 5) Enhances basic knowledge in various concepts 7(11.5%),
- 6) Reading helps me communicate well in English 7(11.5%),
- 7) Reading is enjoyable and interesting 6(9.8%).

From the reasons provided, it is evident that most students 34 (55.7%) liked reading because it helped them pass examinations. Other reasons for liking to read included career development 22 (36.1%) and to be updated with new information 17 (27.9%). The least provided reason was because reading is enjoyable and interesting 6 (9.8%).

The reasons provided by the students for liking to read demonstrate their understanding of the importance of reading. However, the fact that comparatively few students liked reading because it was enjoyable and interesting indicates a perception that reading was an academic endeavor and not a pleasurable activity. This concurs with Herzig (2009), who reported that deaf students recognized the importance of reading as an academic and not a leisure activity. This may be attributed to the challenges that deaf students experience in reading, making it a difficult rather than a pleasurable activity.

The reasons provided by the 13(16.5%) deaf students who disliked reading included:

- 1) Reading is difficult 10(76.9%).
- 2) Don't understand when I read 9(69.2%).
- 3) Too many vocabularies 8(61.5%).
- 4) Very long passages 7(46.2%).
- 5) No encouragement 5(38.5%).
- 6) Always perform poorly in reading comprehension 4(30.8%).
- 7) Get bored and tired when reading 2(15.4%).

From the reasons provided, the majority of the students, 10(76.9%), disliked reading because it was difficult. Other reasons included lack of understanding 9(69.2%), too many vocabularies 8(61.5%) and very long passages 7(46.2%).

The perception that reading is difficult implies that reading is not a delightful activity for deaf students. Explanations regarding this finding may be related to the challenges deaf students go through when reading. Despite having a general positive attitude towards reading, the difficulties deaf students experience in reading might be disheartening them. Chances of avoiding reading, especially for pleasure, are therefore high. This was noticeable when students were asked to indicate in the questionnaire how

much time they spent reading other materials other than textbooks. The results of this item are shown in Table 2.

**Table 2:** Amount of Time Spent in Reading Other Materials other than Textbooks in a Day as Reported by Students (n=79)

No. of hours	Frequency	Percentage
Less than an hour	38	48.1
1-2 hours	20	25.3
3-4 hours	9	11.4
More than 4 hours	8	10.1
Never read other materials	4	5.1
<b>Total</b>	<b>79</b>	<b>100</b>

From Table 2, most students, 38(48.1%), reported that they spent less than 1 hour a day reading other material apart from textbooks. It can therefore be concluded that deaf students rarely read other material other than textbooks, which was an indication of minimal leisure reading. This may be associated with a lack of motivation due to reading difficulties as observed by Chow (2003). However, the possibility of the students' free time being used to complete assignments instead of leisure reading cannot be ruled out, given the busy school schedules. A limited amount of reading, especially as a leisure activity minimizes the opportunities for deaf students to develop and perfect their language and reading skills. This ultimately affects their academic achievement in reading comprehension negatively.

In establishing the influence of deaf students' attitude towards reading on academic achievement in English reading comprehension, the study first ascertained the achievement of form four deaf students in English reading comprehension in County mock English examinations through document analysis. The results are presented in Table 3.

**Table 3:** Achievement of Form Four Deaf Students in English Reading Comprehension in Mock Examination (n=79)

Score(x/20)	Frequency	Percentage
0-2	46	58.2
3-5	29	36.7
6-8	4	5.1
9-11	0	0.0
12-14	0	0.0
15-17	0	0.0
18-20	0	0.0
<b>Total</b>	<b>79</b>	<b>100</b>

Table 3 shows the achievement of deaf students in English reading comprehension out of 20 marks. From the table, 46(58.2 %) of the students scored 0-2 marks, 29(36.7%) scored 3-5 marks and 4(5.1%) scored 6-8 marks. None of the students scored above 8. These results prove that the achievement of form four deaf students in English reading

comprehension was below average (10), with most students scoring between 0 and 2 marks out of 20.

A correlation between form four students' attitude towards reading and achievement in reading comprehension in county mock English examinations was further undertaken. Pearson's product-moment correlation coefficient ( $r$ ) was used to determine whether the attitude towards reading influenced deaf students' academic achievement in reading comprehension. The results were as shown in Table 4.

**Table 4:** Bivariate Correlation between Deaf Students' Achievement in English Reading Comprehension and Attitude towards Reading (n=79)

		Achievement in Reading Comprehension	Attitude
<b>Achievement in Reading Comprehension</b>	Pearson Correlation	1	.833**
	Sig. (2-tailed)		.000
	N	79	79
<b>Attitude</b>	Pearson Correlation	.833**	1
	Sig. (2-tailed)	.000	
	N	79	79

\*\* . Correlation is significant at the 0.01 level (2-tailed)

The results displayed in Table 4 indicate that there is a relationship between deaf students' attitude towards reading and achievement in reading comprehension. From the table, the correlation analysis yielded to  $r = 0.833$ . This was a strong positive relationship and was statistically significant since the significance level value of 0.000 was less than the set significance level of 0.05 for the analysis. According to Hopkins (2002), the effect size of a correlation of 0.70- 0.90 is very large. The correlation of  $r = 0.833$  established in this study can therefore be considered to have a very large influence. A correlation of  $r = 0.833$  further shows that the shared variance is equivalent to 69.4% ( $r^2 = 0.694$ ). Rumsey (2009) asserted that where  $r^2$  fell between 0.30 and 0.70, one variable (x) explained the variability in (y) variable. This implies that 69.4% of the variance in deaf students' achievement in reading comprehension can be explained by attitude towards reading. The remaining unexplained variance of 30.6% can be attributed to other factors. It can therefore be deduced that deaf students' attitude towards reading influenced their achievement in English reading comprehension.

## 5. Conclusions and Recommendations

The general attitude of deaf students towards reading was found to be positive, with a mean of 3.51. This was attributed to deaf students' understanding of the value of reading in their lives. The positive attitude was, however, interpreted as weak and not static. This was as a result of the negative attitudes depicted towards read texts, which had a lot of vocabularies (Mean=2.48); and reading texts that were long (Mean=2.39). Also, the belief that reading was difficult (Mean=2.43) and that they were not good at reading (Mean=2.47). Consequently, the negative attitudes determined: the amount of time deaf

students spent in reading for pleasure; persistence and motivation in reading; and skill levels, which had a depressing effect on academic achievement in reading comprehension.

A strong positive relationship, which was statistically significant ( $r = 0.833$ ,  $p < 0.05$ ) was found between deaf students' attitude towards reading and English reading comprehension. The shared variance between the two variables was 69.4% ( $r^2 = 0.694$ ). This meant that 69.4% of deaf students' academic achievement in reading comprehension could be explained by attitude towards reading. Attitude towards reading, therefore, influenced deaf students' academic achievement in English reading comprehension.

In view of the finding that deaf students had a positive attitude towards reading, though their reading habits were insufficient, this study recommends that teachers of English motivate them to appreciate and embrace reading as a leisure activity. This will help in improving deaf students' frequency, purpose, engagement and skills in reading. Additionally, teachers can empower deaf learners by explicitly demonstrating and scaffolding reading techniques, which ultimately heightens their strategy awareness and lowers the barriers to reading.

### **Creative Commons License Statement**

This research work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc-nd/4.0>. To view the complete legal code, visit <https://creativecommons.org/licenses/by-nc-nd/4.0/legalcode.en>. Under the terms of this license, members of the community may copy, distribute, and transmit the article, provided that proper, prominent, and unambiguous attribution is given to the authors, and the material is not used for commercial purposes or modified in any way. Reuse is only allowed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

### **Conflict of Interest Statement**

The author declares no conflicts of interest.

### **About the Authors**

**Dr. Everline Nyokabi Maina** is a lecturer at the Department of Special Needs Education and Rehabilitation, Maseno University. She holds a PhD in Special Needs Education, specializing in Deaf Education. Her teaching and research interests include: Deaf Education; Kenyan Sign Language; Deafblindness; Reading and Deafness; Disability Studies; Inclusive Education; Sign Language interpretation and Science Education.

**Prof. Edwards Joash Kochung** is an Associate Professor in the Department of Special Needs Education and Rehabilitation, Maseno University. He holds a PhD in Special Needs Education. His teaching and research interests include: Intellectual Disability; Inclusive Education; Disability and Society; and Assessment in Special Needs Education

**Prof. Omondi Oketch** is an Associate Professor in the Department of Information Science, Language and Communication Studies, Technical University of Kenya. He holds a PhD in Linguistics. His teaching and research interests include: Multimodality; Social Semiotics; Systemic Functional Linguistics; Critical Discourse Analysis; and Multilingualism.

## References

- Andala, O. H., Digolo, O., & Kamande, M. (2014). Reliability of mock examinations for prediction of the Kenya Certificate of Secondary Examination (KCSE) results. *IOSR Journal of Research & Method in Education*, 4(1), 28-36. Retrieved from <https://erepository.uonbi.ac.ke/handle/11295/84897>
- Baker, L. (2003). The role of parents in motivating struggling readers. *Reading and Writing Quarterly*, 19 (1), 87-106. <https://doi.org/10.1080/10573560308207>
- Best, W. J., & Kahn, V. J. (2006). *Research in Education (10<sup>th</sup> ed.)*: New Delhi: Prentice-Hall. Retrieved from [https://books.google.ro/books/about/Research\\_in\\_Education.html?hl=ro&id=2QAmAQAAIAAJ&redir\\_esc=y](https://books.google.ro/books/about/Research_in_Education.html?hl=ro&id=2QAmAQAAIAAJ&redir_esc=y)
- Bryman, A., & Bell, E. (2003). *Business research methods*. UK: Oxford University Press. Retrieved from [https://books.google.ro/books/about/Business\\_Research\\_Methods.html?id=vpqjq4I9KGM&redir\\_esc=y](https://books.google.ro/books/about/Business_Research_Methods.html?id=vpqjq4I9KGM&redir_esc=y)
- Chi, B. S. (2000). An analysis of reading comprehension of students with hearing impairment. *Journal of Taiwan Education College*, 14, 155-187.
- Chow, D. L. (2003). The reading experience through deaf eyes: A case study of signing deaf high school students. University of British Columbia, Vancouver. Retrieved from <http://www.pbs.org/weta/throughdeafeyes/about/transcript.pdf>
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed methods approaches*. London: Sage Publications. Retrieved from [https://books.google.ro/books/about/Research\\_Design.html?id=bttwENORfhgC&redir\\_esc=y](https://books.google.ro/books/about/Research_Design.html?id=bttwENORfhgC&redir_esc=y)
- Cohen, L., Manion, L., & Morrison, K. P. B. (2000). *Research methods in education*. London: Croomhelm. Retrieved from <https://eclass.uoa.gr/modules/document/file.php/ECD433/ME%CE%98%CE%9F%CE%94%CE%9F%CE%9B%CE%9F%CE%93%CE%99%CE%91/Research%20Methods%20in%20Education.pdf>
- Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and Perspectives*, 38(1), 105–123. Retrieved from [https://www.researchgate.net/publication/261473819\\_VValidity\\_and\\_Reliability\\_in\\_Social\\_Science\\_Research](https://www.researchgate.net/publication/261473819_VValidity_and_Reliability_in_Social_Science_Research)

- Ewoldt, C., Israelite, N., & Dodds, R. (1992). The ability of deaf students to understand text: a comparison of the perceptions of teachers and students. *American Annals of the Deaf*, 137(4), 351-361. <https://doi.org/10.1353/aad.2012.0493>
- Gall, M. D, Gall, J. P., & Borg, W.R. (2007) (8<sup>th</sup> ed.). *Educational research: An introduction*. Boston: Pearson International. Retrieved from [https://books.google.ro/books/about/Educational\\_Research.html?id=19JfQgAACAAJ&redir\\_esc=y](https://books.google.ro/books/about/Educational_Research.html?id=19JfQgAACAAJ&redir_esc=y)
- Gallaudet Research Institute (2002). *Literacy and deaf students* .Retrieved from <http://gri.gallaudet.edu/Literacy/index.html>
- Garner, R., Alexander, P.A., & Hare, V.C. (1991). Reading comprehension failure in children. In B.Y.L Wong (Ed.). *Learning about learning disabilities*. San Diego, CA: Academic Press. <https://doi.org/10.1016/B978-0-12-762530-0.50016-3>
- Garrett, J. (2002). Enhancing the attitudes of children toward reading: Implications for teachers and principals. *Reading Improvement*, 39(1), 21-24. Retrieved from [https://www.researchgate.net/publication/234744474\\_Enhancing\\_the\\_Attitudes\\_of\\_Children\\_Toward\\_Reading\\_Implications\\_for\\_Teachers\\_and\\_Principals](https://www.researchgate.net/publication/234744474_Enhancing_the_Attitudes_of_Children_Toward_Reading_Implications_for_Teachers_and_Principals)
- Guthrie, J. T., & Wigfield, A. (2000). *Engagement and motivation in reading*. Lawrence Erlbaum Associates Publishers. Retrieved from <https://psycnet.apa.org/record/2000-07600-009>
- Kamil, M. L., Mosenthal, P. B., Pearson, P. D. & Barr, R. (Eds.). *Handbook of reading research* (Vol. 3). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Harris, A. J., & Sipay, E. (1990). *How to increase reading ability* (10th ed.). White Plains, NY: Longman.
- Herzig, M. P. (2009). *Understanding the motivation of deaf adolescent Latino struggling readers*. Retrieved from <http://escholarship.org/uc/item/1r7825k9>.
- Kelly, L. P. (2003). Considerations for designing practice for deaf readers. *Journal of Deaf Studies and Deaf Education*, 8, 171-186. <https://doi.org/10.1093/deafed/eng005>
- Kiptui D.K., & Mbugua, Z.K. (2009). In EMSK (2009). *Kenya Journal of Education, Planning, Economics and Management*. Vol. 1. Kisumu: Education Management Society of Kenya.
- Klauda, S. (2009). The role of parents in adolescents' reading motivation and activity. *Educational Psychology Review*, 21, 325-363. <https://doi.org/10.1007/s10648-009-9112-0>
- Kipng'etich, G.S. (2012). Analysis of the predictive validity of the mock examination grades to KCSE examination grades in some selected schools in Ainamoi division Kericho district. Unpublished M.Ed thesis, Kenyatta University. Retrieved from <http://www.ir-library.ku.ac.ke/handle/123456789/2635?show=full>
- Kush, J. C., Marley, W. W., & Brookhart, S. M. (2005). The temporal-interactive influence of reading on achievement and reading attitude. *Educational Research and Evaluation*, 11(1), 29-44. <https://doi.org/10.1080/13803610500110141>

- Lipson, M., & Wixson, K. (2003). *Assessment & instruction of reading and writing difficulty: An interactive approach* (3<sup>rd</sup> ed.). Boston: Allyn & Bacon. Retrieved from <https://archive.org/details/assessmentinstru0000lips>
- Loh, E. K.Y., & Tse, S.K. (2009). The relationship between motivation to read Chinese and English and its impact on the Chinese and English reading performance of Chinese students. *Chinese Education and Society*, 42, 66-90. <https://doi.org/10.2753/CED1061-1932420304>
- Luckner, L. J., & Handley, C.M. (2008). A summary of the reading comprehension research undertaken with students who are deaf or hard of hearing. *American Annals of the Deaf*, 153(1), 6-36. <https://doi.org/10.1353/aad.0.0006>
- Mellet S. M., & Crowe J.H. (2009). The Relationship between Selected Affective Factors and Achievement in English of Secondary School Students in Zimbabwe. Retrieved from <http://www.uir.unisa.ac.za/handle/10500/994>
- Merriam, S. B. (2001). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass. Retrieved from <https://searchworks.stanford.edu/view/3511521>
- Monreal, S. T. & Hernandez, R. S. (2005). Reading levels of Spanish deaf students. *American Annals of the Deaf*, 150(4), 379-387. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/16466193/>
- Morgan, P. L., & Fuchs, D. (2007). Is there a bidirectional relationship between children's reading skills and reading motivation? *Exceptional Children*, 73(2), 165-183. <https://doi.org/10.1177/001440290707300203>
- Mugenda, O. N., & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Center for Technology Studies Press.
- National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups*. Washington DC: National Institute of Child Health and Human Development Practice. New York: Oxford University Press. Retrieved from <https://www.nichd.nih.gov/sites/default/files/publications/pubs/nrp/Documents/report.pdf>
- Njuguna, A. (2006). Effectiveness of district mock examination as a predictor of performance in Kenya Certificate of Secondary Education Examination in Kisumu District. Unpublished M.Ed. Thesis, Maseno University.
- Odhiambo, A. C. (2013). *Relationship between the achievement of form four students in mock examination and Kenya Certificate of Secondary Examination in some schools in Migori District, Kenya*. M.Ed Thesis, Kenyatta University. Retrieved from <http://ir-library.ku.ac.ke/handle/123456789/2606>
- Parault, S. J., & Williams, H.M (2010). Reading Motivation, Reading Amount, and Text Comprehension in Deaf and Hearing Adults. *Journal of Deaf Studies and Deaf Education*, 15(2), 120-135. <https://doi.org/10.1093/deafed/enp031>

- Payne, G., & Payne, J. (2004). *Key concepts in social research*. London: Sage Publications. Retrieved from <https://methods.sagepub.com/dict/mono/key-concepts-in-social-research/toc#>
- Richeck M. A., List L., & Lerner J. (1989). *Reading problem: Assessment and remediation*. Englewood Cliff, NJ: Prentice Hall.
- Sainsbury, M., & Schagen, I. (2004) Attitudes to reading at ages nine and eleven. *Journal of Research in Reading*, 27, 373-386. <https://doi.org/10.1111/j.1467-9817.2004.00240.x>
- Saunders, M., Lewis P., & Thornhill, A. (2009). *Research Methods for Business Students (5<sup>th</sup> ed.)*. New Jersey: Prentice Hall. Retrieved from [https://books.google.ro/books/about/Research-Methods-for-Business-Students.html?id=u-txtfaCFiEC&redir\\_esc=y](https://books.google.ro/books/about/Research-Methods-for-Business-Students.html?id=u-txtfaCFiEC&redir_esc=y)
- Steg, L., Buunk, A.P., & Rothengatter, T. (2008). *Applied social psychology: Understanding and managing social problems*. Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511801921.001>
- Singleton, J., Morgan, D., DiGello, E., Wiles, J., & Rivers, R. (2004). Vocabulary Use by Low, Moderate, and High ASL-Proficient Writers Compared to Hearing ESL and Monolingual Speakers. *Journal of Deaf Studies and Deaf Education*, 9 (1), 86-103. <https://doi.org/10.1093/deafed/enh011>
- Traxler, C. B. (2000). The Stanford Achievement Test, 9th Edition: National norming and performance standards for deaf and hard-of-hearing students. *Journal of Deaf Studies and Deaf Education*, 5, 337-348. <https://doi.org/10.1093/deafed/5.4.337>
- Wauters, L., Van Bon, W.H.J., & Tellings, A.E.J.M. (2006). Reading comprehension of Dutch deaf children. *Reading and Writing: An Interdisciplinary Journal*, 19, 49-76. <https://doi.org/10.1007/s11145-004-5894-0>
- Wigfield, A., & Asher, S. R. (2002). *Social and motivational influences on reading*. Pearson, P. D. (Ed.). *Handbook of reading research*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Woolfolk-Hoy, A.E. (2005). *Educational Psychology (6<sup>th</sup> ed.)*. Boston. Allyn and Bacon. P. D. (Ed.). *Handbook of reading research*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Wuensch, K. L. (2012). A Brief Introduction to Reliability, Validity, and Scaling. Retrieved from <http://core.ecu.edu/psyc/wuenschk/MV/FA/Reliability-Validity-Scaling.docx>