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**CHALLENGES FACED BY LEARNERS WITH VISUAL IMPAIRMENT IN
READING AND WRITING ENGLISH BRAILLE GRADE II IN SELECTED
SPECIAL PRIMARY SCHOOLS IN KISUMU AND SIAYA COUNTIES - KENYA**

BY

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**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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ABSTRACT

Learners with visual impairment (VI) depend on Braille as a medium of instruction and communication. According to a report by the Ministry of Education, only 45 (30.6%) out of 147(100%) of learners with VI enrolled in upper primary classes in Kisumu and Siaya counties could read and write English Braille grade II competently. Despite this discrepancy, there was no documented explanation for this low percentage of learners with English Braille grade II competencies, particularly in Kisumu and Siaya Counties. The purpose of this study was to establish challenges faced by learners with VI in reading and writing English Braille grade II in selected special primary schools in the two counties. Objectives of the study were to; Establish Learner based, examine environment based, determine teacher based and examine Braille Code based challenges faced by learners with VI in acquiring and using English Braille grade II. The conceptual framework showed an interaction between independent variables selected (challenges faced by learners with VI) and dependent variables (reading and writing English Braille grade II). Descriptive survey research design was adopted. The target population was 2 head teachers, 54 teachers, and 162 learners. Saturated sampling technique was used to carry out the selection of 2 head teachers, 49 teachers and 147 learners. Data was collected by use of questionnaires and interview schedules. Test re-test method was used to determine the reliability coefficient of instruments at a score of 0.75. Face and content validity of the research instruments was ascertained by experts from the department of Special Needs Education. Descriptive statistics such as frequency counts and percentages were used to analyze quantitative data. Qualitative data was transcribed, categorized into themes and sub-themes as they emerged. The findings revealed that these learners had negative attitude towards communication in English Braille Grade II. Only 26 (19.2%) out of 135 of the learners were able to read and write English Braille Grade II. The school environment did not favor learners' instruction in English Braille grade II as indicated by high student-teacher ratio (10:1), and few resources as suggested by 90(66.7%) learners. Teachers' competency was low as indicated by mean of 2.3 while learners faced challenges with Braille code as revealed by 18 (43.9%) of teachers with overall mean of 2.4, which affected their ability to read and write English in Braille grade II. This study recommended early stimulation and introduction to Braille code for learners with VI; enforcement of functional educational inclusion to accommodate learners with VI and adoption of Individualized Educational Program (IEP). These findings will be of use to the Kenya Institute of Curriculum Development, Kenya National Examination Council, and Teacher Training Colleges for adapting the curriculum, on setting Examinations, and on how to train Teachers for Learners with visual impairment.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The good news Louis Braille of France gave to the world in 1825 is undoubtedly a significant milestone in the beginning of the road of the people with blindness towards their full social inclusion (Zurita, 2009). The beginning of planned education for those who were blind was manifested by the dawn of the first school for learners with visual impairment in 1785 in Paris by Valentin Haüy (Zurita, 2009). He perceived that if he could teach those who were blind to read they would have a chance to be self-reliant and secure employment, as those who were blind lived under awful conditions (Johnson's, 2002). Due to the fact that education was primarily an advantage for those who were economically stable and that the possibility of educating a person with a disability was almost zero, it is important to acknowledge the valuable input Haüy made to the community. After establishing his school in Paris, Haüy started the first efforts to develop a method of raised-print letters on a wooden slate to provide access to the written word for his learners. Using his method of mounted letters, Haüy confirmed the potential of those with visual impairment to learn to read.

Embossed code for learners with visual impairment was the development of a tactile code started by Charles Barbier for night use by military troops during battle after dark (Mwaura & Mweru, 2010). Such a code would enable soldiers to read messages without using a light source, hence, would not attract attention to their position. Barbier's code used raised dots arranged in various configurations using a twelve dot Braille cell. Although the military did not adopt Barbier's code, it was enthusiastically received by students at the school for the blind in Paris. Why they particularly valued contribution of Barbier's code was that it provided a means of reading and writing for learners with visual impairment globally. This was the second major step towards literacy for the blind.

As luck would have it, a student by the name of Louis Braille was enrolled at the school for the blind in Paris when Barbier demonstrated his code. Braille began to experiment with the code adapting it from a twelve to a six-dot cell system and creating most of the details of the code as we know it today (Rex, Koenig, Wormsley, & Baker, 2003). Louis Braille also developed separate codes for Music and Mathematics Braille. While there were a number of other embossed codes developed during the next few decades, Braille became the code of preference in most countries. The next barrier to literacy for Braille readers in English-speaking countries was associated with creation and use of a uniform Braille code.

In the United States at least three different codes were being used while in Britain, educators were experimenting with various levels of contracted Braille, which increased the reading speed of users. A committee formed by the American Association of Workers for the Blind (AAWB) was given the mandate to determine the most efficient code for use in the United States (Rex, Koenig, Wormsley & Baker, 2003). They found that British Braille readers read more slowly when using the American partially contracted Braille. As well, Canadian Braille readers using the fully contracted British system were better readers than American students. After much frustration and controversy, a revised English Braille Code became the standard literary code for English-speaking countries in 1932 (Amato, 2002). This expanded the availability of Braille as more countries could then share materials produced in the standard code.

In 2002, representatives from all English-speaking countries worked together to create a Unified English Braille Code which was to generate new rules and practices which were expected to make learning and using the Braille code even more proficient for readers (MoE, 2003).

Braille provides users who are blind access to a method of both reading and writing. Just as Braille code underwent various stages in its development, the educational implementation of Braille instruction for school-age going children also developed for a long period of time. Originally, the teaching of Braille to school age children was initially the responsibility of schools for learners with visual impairment. In 1900, day classes for learners with visual impairment were introduced in Chicago and in 1913 the initial classes for learners described as “partially sighted” were reputed in Massachusetts and Ohio (Hatlen, 2000). Such classes were often known as “sight-saving” classes because it was assumed that students risked losing their remaining vision if they made broad demands on their already weakened vision by reading print (Viisola, 2001 as cited in Abledata 2004). Students with VI were educated to read Braille, although sometimes students had to be blindfolded, by use of aprons draped over the Braille page, or required to wear high collars to stop them from reading the code with their eyes. By the 1930s, ophthalmologists took a strong-minded position that those with partial vision did not risk further vision loss by using their vision for usual activities such as reading. It was not until 1947 that the American Printing House for the Blind started producing large print exercise books and text books as it was understood that larger print would provide easier way for print readers with low vision (Hatlen, 2000).

On the other hand, in Nigeria, the population of learners with visual impairment is estimated at 3 million (Atinmo, 2002). Less than half, have received formal education and are capable of reading or writing Braille. Majority have resorted to begging on the streets as a means of livelihood (Lex, 2009). Those who are usually educated depend on the goodness of charities, non-government organizations (NGOs) and philanthropist to provide them with information materials via libraries in schools, public libraries, and institutions serving the visually impaired in Nigeria.

Libraries serving the visually impaired in Nigeria are faced with problems of meeting the high demand of information materials in alternative formats. They have been perceived to have inadequate materials for use. The consequence is that the visually impaired people who seek information are provided with what is there and not what they need (Adetoro, 2009). Despite Braille's nearly 90 years of history in Ethiopia, it is frustrating to see that it's not yet widely used in the daily life of most people who are blind (Yibeltal, 2012).

As regards the situation in South Africa, apart from the limited in-service training programmes for teaching Braille offered by South African National Council for the Blind together with inaccessible initiative at few schools for learners who are blind, educators responsible for Braille education are left to cope on their own. The result is that educators find it difficult to be passionate about Braille if they are unsure of themselves about their own information of it (Corn & Koenig, 2000).

According to the Kenya National Bureau of Statistics, (2009), Kenya has a significant number of learners with visual impairment who usually face varied challenges in accessing quality education. The population census of 2009 estimated that Kenya had a population of 39,500,000 people, out of which 987,500 (2.5 %) were persons with disabilities, of the 19,750 (2 %) with visual impairment, 4,938 (25%) were children of school going age. Sadly, only 10% of them were enrolled in school, with a whopping 90% unaccounted for educationally. However, even those enrolled in special schools or schools offering special services to learners with visual impairment were not adequately taught how to read and write English Braille due to lack of sufficient teaching personnel, learning materials, inadequate physical facilities among others (Center for Strategic and International Studies, 2010). This may perhaps provide an insight as to why in this particular region, the academic performance of this category of learners has perennially remained below average (Appendix G).

This is on the backdrop of the fact that, with an estimated population of 1,232 learners living with VI, in Kisumu and Siaya counties led the other 45 counties in the country (MoE, 2003), whereby the national spread of learners with visual impairments ranked Lake(Nyanza) Region as hosting the highest population locally (Appendix F).

On the other hand, the Kenya Society for the Blind records (2009) also confirm that with a combined total population of 1,232 learners, Kisumu and Siaya counties have the highest number of learners with visual impairments in the country, yet facing overwhelming educational challenges waiting to be addressed (MoE, 2003).

Meanwhile, preliminary research involving 2012 academic records (Appendix G) of Kibos Special Primary School and St. Oda school for the blind primary, revealed that only 45 (30.6%) of the 147 learners in upper primary in both schools could read and write Braille grade II competently. The small margin could be attributed to the challenges learners faced in reading and writing English Braille grade II, in Kisumu and Siaya Counties.

According to Danielson (2006), Braille literacy is declining because of the perception of the learners towards reading and writing Braille. In most cases, learners feel that Braille is always slow as compared to reading and writing in print, and that Braille is hard to learn. Most studies have been carried out on the influence of attitude on performance of learners in special schools for learners with VI. However, studies on learner attitude based challenges especially in special schools for learners with visual impairment are not known due to little understanding of the subject, and therefore little is known on the same, with conclusion that they have a negative attitude, which could not be a true scenario. Their dismal performance also draws a lot of speculation on why they have such performance despite the government's effort to ensure they get equal education with other learners. As a result, the current study

therefore sought to find the influence of learner attitude based challenges faced by learners with VI in reading and writing English Braille grade II.

Several studies advocate for a rich environment for learners with visual impairment, such as studies carried by Spungin (2003), and others, who notes that much has been accomplished towards ensuring that learners with VI have a rich environment for effective studies. In Kenya, the government has allowed the intervention of United Nations and other NGOs towards ensuring that learners with VI are well equipped to attain the necessary skills in reading and writing English Braille grade II. There is also an improvement in technology, a progress that has seen many special schools upgraded especially those of learners with VI. Despite these efforts, learners who have skills in reading and writing English Braille grade II are very few. This raises questions on the influence of environmental based challenges faced by learners with VI towards reading and writing English Braille grade II, a question whose answer was sought in the current study.

Several studies including Spungin (2003), Danielson and Lamb (2006) among others were carried out on proficiency of teachers who teach learners with VI. These studies revealed that teachers of learners with VI are less than proficient Braille instructors and therefore this has contributed to illiteracy among VI learners. In Kenya, the situation cannot be concluded due to scarce studies on the same and only mere conclusions with little or no empirical findings. No studies have been carried thus to establish teacher based challenges faced by learners with visual impairment in reading and writing English Braille grade II. The current study therefore sought to shade enough light on this topic.

Several studies including those carried out by MOE (2003) revealed learners suggesting that Braille is slower than print and difficult to master. They further conclude that it is because of its many contractions (groupings), symbols and letter combinations that lessen the size of

Braille books by making it probable to put more Braille on a page as a substitute of spelling each word out letter by letter. Seemingly, no studies have been carried out on the complexity of English Braille code. Therefore this study sought to examine Braille code based challenges faced by learners with VI in reading and writing English Braille grade II in Special primary schools for learners with visual impairments in Kisumu and Siaya counties.

1.2 Statement of the Problem

Learners with visual impairment depended on Braille as a medium of instruction and communication. According to the report by the ministry of education, Kisumu and Siaya counties combined had the highest number (1232) of learners with visual Impairment(VI) in Kenya. Information from Kisumu and Siaya counties indicated that only 30.6% out of 147 learners enrolled in upper primary classes could read and write English Braille grade II competently. The low percentage could be attributed to certain challenges faced by learners with VI in reading and writing English Braille grade II in Kisumu and Siaya counties. Despite wide difference, there was no explanation for the low percentage of learners who could read and write English Braille grade II in Kisumu and Siaya counties.

It was therefore for this reason that the researcher in this study sought to establish how challenges faced by learners with VI affect them in reading and writing English Braille grade II in special primary schools in Kisumu and Siaya counties.

1.3 Purpose of the Study

In consideration to the foregoing problem statement, the purpose of this study was to establish challenges faced by learners with visual impairment in reading and writing of English Braille grade II, in selected Special Primary Schools in Kisumu and Siaya counties.

1.4 Objectives of the Study

This study was guided by the following objectives:

- (i) To establish learner attitude based challenges faced by learners with visual impairment in reading and writing English grade II.
- (ii) To examine environment based challenges faced by learners with visual impairment in reading and writing of English grade II.
- (iii) To establish teacher based challenges faced by learners with visual impairment in reading and writing English grade II.
- (iv) To examine Braille code based challenges faced by learners with Visual Impairment in reading and writing of English Braille Grade II.

1.5 Research Questions

The study was guided by the following research questions:

- (i) How does the learner's attitude towards Braille reading and writing challenge their skill acquisition in reading and writing of Braille Grade II in the selected special primary schools?
- (ii) How does the learning environment challenge learners with VI in reading and writing of Braille Grade II in the selected special primary schools?
- (iii) How does Braille code pose challenges to learners with VI in reading and writing English Braille Grade II in the selected special primary schools?
- (iv) How does the level of influence of teacher's competency pose challenge to learners with VI in reading and writing English Braille Grade II in the selected special primary schools?

1.6 Assumptions of the Study

The study was based on the assumption that all teachers in special schools for learners with visual impairment were competent in Braille reading and writing, there was a structured program on the development of Braille reading and writing, and finally, all learners with visual impairment have a chance to undertake Braille reading and writing.

1.7 Scope of the Study

The study focused on challenges faced by learners with visual impairments in Braille reading and writing particularly in selected special primary schools for learners with VI, in Kisumu and Siaya counties. The study was carried out in two special primary schools in Kisumu and Siaya counties namely: St.Oda Aluor and Kibos School for the blind. It involved a total sample size of 198 people comprising 2 head teachers, 49 teachers, and 147 learners with total visual loss, thus relied entirely on Braille as medium of instruction and communication.

1.8 Limitation of the Study

Eight (16%) teachers and twelve (8%) learners did not return questionnaires. This margin is however rather too small to significantly affect the generalizability of the results obtained, considering that a large sample was drawn from a population with even greater diversity.

The assumption of the study that, all teachers in VI schools were Braille competent, turned out a fallacy, but also posing minimal impact; it fairly slowed down the data collection process hence prompting an extra day to finish up the task.

Limitations arising from time and financial resources were well put under check by sourcing for a research assistant and finances upfront, plus burning mid-night oil.

1.9 Significance of the Study

Overcoming the aforementioned research limitations was critical considering the tremendous benefits this study brings in the education for Learners with VI. The study findings could be

significant to among others: Kenya Institute of Curriculum Development (KICD) would receive critical information that would help in adapting the curriculum for learners with visually impairment. The Kenya National Examination Council could get information vital in adaptation of examination questions for learners with visual impairment.

Teacher training colleges could access information on how to train teachers to teach English Braille grade II to learners with visual impairment. Educational managers would source knowledge on how to make necessary resources for the teaching and learning of English Braille grade II in special primary schools for learners with the visual impairment. It could enable teachers to establish appropriate learning approaches in English Braille grade II for learners with visual impairment. It may also provide a basis for future research to improve on teaching approaches in Braille. Furthermore, this report would serve to create public awareness about the educational plight of these learners with VI, without which they may be left out in the EFA campaign.

1.10 Conceptual Framework

The conceptual framework (Figure 1.1) postulates that learners with visual impairment are affected by attitude based challenges, Environment based challenges, teachers training based challenges, and Braille code based challenges in their acquisition of Braille skills in reading and writing English Braille grade II.

The process of second language learning is connected in a complex way to challenges relating to the entity learner and the neighboring socio-cultural environment, including the goal of learning, motive, attitude and personality (Brown, 2003).

Independent variables (IV)

Dependent variables (DV)

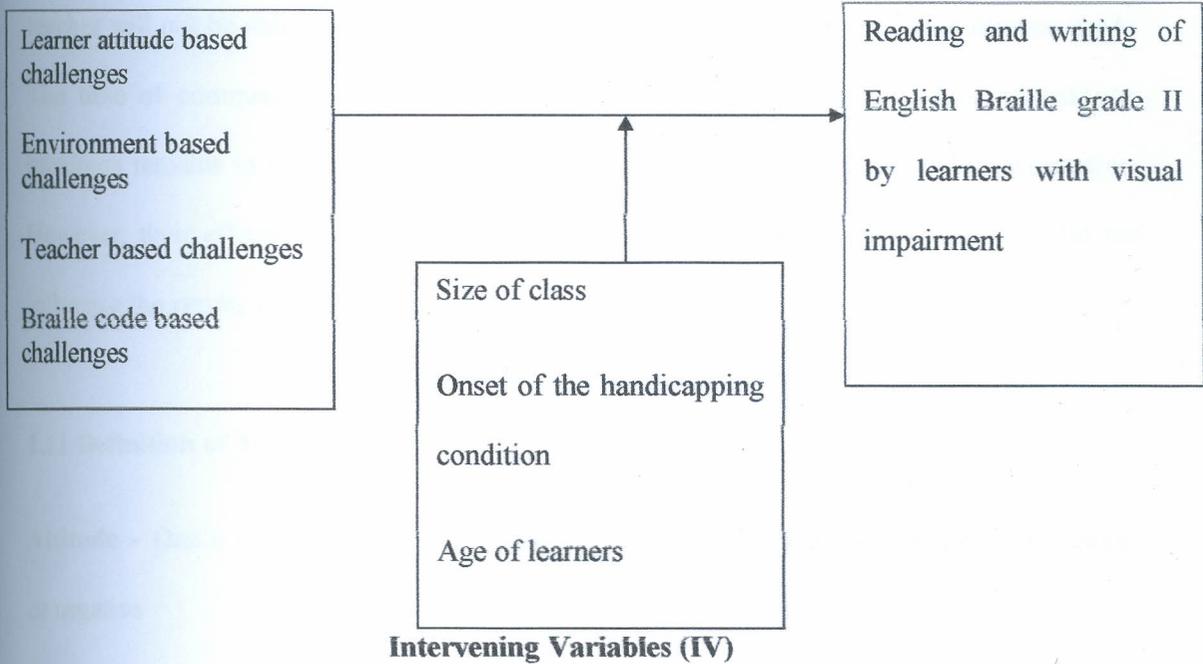


Figure 1.1: Conceptual Framework of the challenges faced by learners with visual impairment in Braille Grade II.

Source: Researcher

Figure 1.1 demonstrates the relationship between independent variables (Learner attitude based challenges, Environment based challenges, Teacher based challenges, and Braille code based challenges) and the dependent variable: Reading and writing English Braille Grade II. It was hypothesized that learner attitude, learning environment, teacher based challenges, and Braille code based challenges in one way or the other influence the Reading and Writing of English Braille Grade II in any formal setting. These independent variables were therefore believed to have an impact on the dependent variable. This entails the relationship between each of the independent variable and the dependent variable as illustrated by figure 1.1. This was verified through this research. In addition, such intervening variables like size of the class, the age of the learner and the time of the commencement of the handicapping condition

were also captured as posing possible influence on the outcome of this relationship as shown in the figure. For example the size of the class affects the competence of the teacher since the teacher will not be able to deliver effectively to a large class as learners have diverse needs. The time of commencement is very crucial since the learners who acquire adventitious blindness remains in denial stage for a long time affecting their attitude to skill acquisition. However, their effects for and against nullified each other in such way that they did not influence the results in an way

1.11 Definition of Terms

Attitude - One's thoughts and feelings about visual impairment, which may be positive or negative

Braille Code- The six embossed dot configuration writing system used by the blind.

Braille grade I - The most basic Braille, just translating print into Braille

Braille grade II- Contracted Braille that is advanced in complexity

Disability- The loss or restriction of the functional ability of part of the body resulting in limited participation in the community activities.

Environmental challenges- *These are extrinsic challenges that come from without the child.*

Impairment - The damage to the body part either through accident, disease, genetic factors, or other causes; this leads to loss or weakening of that affected part.

Learners - These are pupils or students in school

Physical facilities - These are structures and buildings in a school such as classrooms, dormitories, playgrounds, and offices among others

Special school -These are designated as a special school which may be day or boarding. They cater for specific areas such as blindness, hearing impairment among other handicaps.

Visual impairment - It is a state of inability to see clearly

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews a collection of literature reviews, with a critical look at their significance to the study. The review is mainly revolved around the objectives under study. Gaps in the works of accredited scholars and researchers are identified and critically analyzed on the basis of their respective methodologies, findings, the sampling procedures adopted and their appropriateness for their corresponding studies also examined. The relationships between the past studies and the current study are also highlighted. An explicit summary of the synthesized information wraps up the chapter. Thus, this review is thematically organized in subtopics.

2.2 Learner Attitude Based Challenges towards Reading and Writing English Braille Grade II

Numerous studies have been devoted on this subject. Danielson, (2006) with other renowned proponents (Corn and Koenig, 2002; Hong, 2004; Koenig and Holbrook, 2000;) share the view that Braille literacy is declining because of the negative attitude of the learners towards reading and writing Braille Grade II. Perhaps a critical question to explore here is what exactly generates this negative attitude in the learners! In most cases, learners feel that Braille is always slow and bulky as compared to reading and writing in print and that Braille is complex to learn. This view is credible considering that Braille exists in over 189 different contractions and is also generally too mechanical especially to write (brailing). The Braille machine itself alone is so cumbersome and weighs on average, 5 kilograms, while an ordinary pen may hardly weigh over 2.5 grams. Surely, almost everything about Braille is bulky: Cumbersome Braille, too heavy, its importability; large, thick, and dull Braille paper, numerous contractions. Braille is also labor intensive, time consuming, fragile (the embossed dots), requires overly large storage space and what compounds it all is that Braille is damn

expensive in every aspect. For instance, the cheapest Braille machine costs Ksh. 70,000, less freight charges (luckily, freight is free globally for all Braille materials).

While some learners lament that Braille is slower than print and difficult to master because of its many contractions (groupings), Troughton (1992) as cited in Hong (2004) concluded in her study that more participants read more rapidly subcontracted Braille compared to contracted Braille and that most learners felt that reading and writing Braille grade II was tedious, because of its many rules and contractions; hence preferred to use Braille grade I which directly translates print into Braille without changing the pattern of reading and writing. This attitude therefore makes learners lose interest in enjoying Braille material.

Studies show that interest towards Braille develops when an individual child reads words or sentences written in Braille grade II. However, contrasting this view are Koenig and Holbrook (2000) and Corn and Koenig (2002) in whose studies, they recommended that Braille instruction should start with uncontracted Braille (Grade I) before proceeding to Grade II (contracted Braille) that largely depends on how well the learner has fared on in Grade I. This implies that proper Braille rules start with Braille Grade I, before proceeding to grade II which uses word-signs, group-signs and abbreviations among other contractions. Contributing to this dialogue, Craig and Harrison (2003) concluded that a child's attitude towards any subject learned at school is improved by parents at home, if they have knowledge of the same. If parents revise together with a child, he or she develops interest in the subject. This implies therefore that other than early introduction to Grade II Braille, family members' interest and knowledge in Braille accompanied by access to appropriate equipment to provide exposure to Braille reading and writing is imperative for fostering positive attitude towards Braille.

Therefore, if Braille Grade II , according to the initial study, is what would help nurture and sustain the interest of this child in Braille, then it will be interesting to establish how this learner will master advance in Braille without passing through the basic (Grade one) Braille.

A study was conducted by Koenig and Holbrook (2000) and Corn and Koenig (2002) to develop frameworks for delivering instruction in literacy to students who use Braille and those with low vision, respectively. The studies recommended that Braille instructors should be consistent in their service delivery and allocate enough time for Braille everyday for proper mastery. For beginners in learning Braille, the studies recommended that daily contact for a long time per day at least one to two hours per session, and a long duration throughout at least one school year were also seen as strategies to improve the reading and writing of Braille. This means that writing Braille is perfected through regular practice. This calls for a commitment on the part of the learner and the necessary teacher support.

There are those who think that learners with visual impairment do not have to be literate in Braille, courtesy of new technology in ICT. Such sentiments make the learners develop negative attitude and consequently withdraw interest in learning Braille. This runs a risk of increasing their dependency on their sighted peers like in reading notes for them. Johnsons, (2007) propounds reasons that may lead to negative attitude towards Braille by these learners, arguing that with the advancement in the blind-friendly technology, like the introduction of speech synthesizers for instance, optical character recognition, the Embosser and other modern devices, Braille has been rendered useless and that most learners wish to use these modern devices even when they are not available in their schools. Concerning activities of daily living, their freedoms, privacy, and independence may be curtailed. This means that their activities/lives would end up controlled by their sighted peers. This kind of dependency impacts negatively on their ability to read and write Braille (Spungin, 2000).

Many learners with visual impairments do not make any efforts in improving Braille literacy simply because in their home environments, hardly are any adults knowledgeable in Braille. This may be one of the factors that may motivate a learner to develop a negative attitude towards Braille (Hong, 2004). It is, therefore, vital that learners with visual impairment be placed in a conducive, accommodative learning environment like a special school for learners with VI. Parents equally need to be sensitized on the importance of a positive environment.

The emergent Braille literacy is not supported during early childhood because of many caseloads and this makes the caretakers concentrate on other rehabilitation activities, at the expense of pre-Braille activities, and this has an adverse effect especially when the learners join primary schools and the teachers assume that the learners were taught Braille when they were in pre-primary. This assumption by both pre-primary and primary school teachers mostly leads to poor mastery of Braille reading and writing among learners with visual impairment since the feeling of neglect or being ignored by their Braille teachers breeds hatred for Braille altogether. It is worse if the learner realizes that their teacher views Braille instruction as an added burden, therefore, become reluctant to teach. To help in this, teachers of Braille need to be retrained and motivated in stride with the tasks they perform.

The Foundation of Croatian Braille (1994) observed that negative attitude towards Braille by learners may be caused by lack of a well-structured curricula and Braille readiness activities. This makes learners to feel that Braille is not important and, therefore, ignore it. This is in agreement with the report by Kenya Society for the Blind (2009) thus, Braille literacy among learners with visual impairments is affected by; frequent change of curriculum, inadequacy of teaching and learning aids and the high costs involved in the production of Braille books. Braille lessons in the schools for learners with visual impairment are scheduled last on the timetable, when learners are already tired; therefore learners tend to look at Braille as a

subsidiary subject hence do not give it any value. This leads to the decline of Braille literacy among learners with visual impairment.

It is true that the learners with VI are severely affected by frequent changes in the curriculum, high cost of Braille textbooks, lack of teaching aids and the raw deal given to Braille on the time table. Therefore, the researcher suggests that the ministry of education and other significant stakeholders should not interfere with the curriculum for learners with VI, because their textbooks are very expensive. Once the curriculum is changed, the learners go for an extended period of time without textbooks hence affecting their studies. The problem of teaching aids should be solved by the Kenya Institute of Curriculum Development via producing adequate teaching and learning aids for schools for learners with VI, and Braille should be given equal weight as any other subject on the timetable.

It is worth noting also that because of the high demands that life has placed on the modern career parent, most have been left with no choice but to delegate parenting of their vulnerable children with VI and home management duties to their house helps; many of whom are too young or too inexperienced for the huge responsibilities they have been left to discharge: including seeking out what the family will eat, supervising the children's work and choosing what their bosses will wear to work the following day. One could, therefore, argue that these house helps, who are in many cases adversely underpaid, have become surrogate parents to these children (Daily Nation 2014, May 23). Quite so often, these house helps are illiterate chaps or school drop-outs. Thus, it is almost impossible for parents of learners with visual impairment to get one having any basic Braille skill, leave alone finding time to learn any Braille for the sake of their children. This innocent boy or girl naturally embraces the feeling of being a lesser member of the family particularly if the sighted siblings will often enjoy assistance with their homework by their parents, and yet whenever s/he asks for the same, the

parents are helpless in Braille code knowledge. Very demoralizing indeed, thus, Craig and Harrison (2003) warn that a child's attitude towards any subject learned at school is improved by parents at home, if they have knowledge of the same.

From the foregoing therefore, many studies including those by Delphis (2001), Danielson (2006) and Johnson (2007) demonstrate to which extent learners' attitude affects their reading and writing of English Braille. However, other than falling short of exploring other intrinsic causations, these studies did not focus on the learner based challenges with respect to their attitudes towards reading and writing English Braille grade II; in Kisumu and Siaya counties. This is the knowledge gap this study sought to fill.

2.3 Learning Environment in Reading and Writing English Braille Grade II.

According to Quigly (2000) a rich environment has a significant role to play in the reading and writing of English Braille grade II. Psychology of teaching and learning has shown that for any meaningful learning to take place, the learner must be supplied with all that can support learning including technology. There is little doubt that technology has changed the education of students with various impairments, as seen in many developed countries.

Two decades ago, the author's tools of the trade were Brailers and a tape recorder. Learners in schools also had this equipment and in a few instances; a typewriter and a Dictaphone (a phone with Braille buttons). Currently, the range of electronic equipment for learners with Visual Impairment appears to be almost limitless, and their explosion in their availability increases exponentially. The smorgasbord of potential offered to learners with visual impairments is of enormous benefits.

There currently exists in both developed and developing countries a perception from both scholars and caretakers that the invention of technology in the reading and writing of Braille is likely to curtail the level and speed at which learners with visual impairment read and

write Braille. On the contrary, teachers counter this view by arguing that technology or environment enrichment with new technology is likely to increase the level of literacy and rate of reading and writing English Braille grade II. Therefore, the researcher concurs with the teachers that invention of new technology is likely to increase the level of Braille literacy among learners with VI rather than decreasing it. For instance, the invention of the Braille phone called the Own phone, the World's first Braille phone. The London-based company employed 3D printing techniques to design the customizable phone. Both sides of the phone have a Braille keypad with two and four buttons that are preprogrammed to call specific individuals. For those not able to read Braille, the company can print raised text on the keypads which, through tactile feedback, can allow the user to interact with the device. (Daily Nation, 2014 May 23rd), hence, a clear indicator that the introduction of technology in education for the Blind (in the reading and writing of Braille) is a Braille booster in schools for learners with visual impairment.

The classroom has to have labels with words and embossed maps, diagrams and pictures everywhere, so that learners constantly connect written English with the things they represent. Teachers have to display these labels based on learners' needs and interests to provide children with disabilities support (Pressley, 2005).

Once learners reach Braille grade II, most of the information they need is given to them in a textual format where they focus changes from learning to read to and reading to learn. Therefore, those poor readers may have difficulty in interacting with the curriculum content freely.

There is a shortage of Braille materials and the methods of distributing the same are lacking. It has to be noted that scarcity of teachers who are supposed to instruct learners with visual impairment is also a setback to speed and fluency of reading and writing of Braille

respectively. To counter this problem of inability to read and write Braille, the USA federal government decided to form the National Federation for the Blind (NFB) to enroll all those well-wishers who have interest of the American visually impaired.

These NFB members were to ensure that all the visually impaired learners who depend on Braille as a medium of communication, have an equal opportunity to access, and learn it effectively (Spungin, 2003).

Itinerant officers play a big role in improving reading and writing rates in Braille. They move from school to school, district to district acting as consultants in matters pertaining to Braille. One set back to their services is the distance to be covered and the means of transport. It is also evident that in most cases they are few and cannot reach schools in time to deliver their services. They are expected to teach sixteen or more learners who are widely spread over large geographical areas. The terrain of the land and the weather conditions prevailing on a particular day may even last a month without attending to a single child. In addition to this, most Itinerant teachers are viewed by the classroom teachers as supervisors and therefore look at them as officers who are “forcing” them to instruct Braille in a more inappropriate manner (Frieman, 2004). Therefore, the researcher recommends that the number of the Itinerant teachers to be increased and be provided with the modern means of transport to facilitate their service delivery to their societies.

Many Scholars and other concerned personnel about the Braille standards look at teacher's caseload as a big influence to have the learners learn Braille. Many of such teachers attend to more than 6 learners per day which does not allow them to have adequate time to carry out individual instruction. Teachers have always attributed the inability to instruct Braille, to heavy caseload of teachers, therefore, argue that too much case load work down their competence. They suggest that the numbers of learners they attend to be reduced to four per

day, an idea the administrators have rejected saying that this will transform many instructors into idlers (Frieman, 2004). In this case the researcher disagrees with the administrator's view that reducing the teacher's caseload will transform them into idlers because it is a plain lie by the administrators due to their ignorance of the diverse needs of learners with visual impairment. It is therefore the researcher's view that the teacher's caseload be reduced to two learners per day instead of four as suggested, since those learners with VI need to have more individual sessions with the teacher in order for them to grasp any meaningful concept. Due to lack of vision, most of the concepts taught in class seem to be abstract to the learners hence difficult to understand.

Availability of print materials for learners with low vision as compared to the unsighted learners is also seen as hampering the reading and writing of English Braille grade II. Learners with VI who have total visual loss in some cases rely on those with Partial Visual Loss (PVL) to read to them questions or notes from the chalkboard or reference material. Most educators insist that a choice must be made between print and Braille and that only one reading medium must be used. This disagreement translates in the field of disputes among professionals in planning meetings resulting in new deals to address individual learners. There are others who believe that inclusion is the main problem with reading and writing of English Braille. They argue that print materials in schools for learners with visual impairment are necessitated by the presence of learners with partial sight loss. Inclusion, as argued by many, is meant to reduce discrimination against those learners with VI and including them in the community of the sighted in order to enhance equal playing ground for all. Parents are not left out in this battle; they are often concerned about the best cause of action that they and their children become real victims in the academic battles especially when the parents of the sighted learners threaten to withdraw their children from learning centers (Fredeman, 2005). Despite the fact that different studies have been carried out on how environmental challenges

influence learners with VI in reading and writing of English Braille grade II, no such study has ever been conducted in the lake region. Learners lacking previous know-how skills such as pre-Braille activities, alphabetic principles, and phonemic awareness need supplementary instruction to ensure they do not lag behind their sighted peers. Therefore, elementary school teachers must provide an element that allows learners with (VI) to access experiences they may have missed in their pre-school period time (The National Reading Panel, 2001). With this in mind, the current study therefore sought to fill the gap by finding out the effect of environment on reading and writing English Braille grade II in the two special primary schools in Kisumu and Siaya counties.

2.4. Teachers' Competency in English Braille Grade II

Spungin (2003) citing empirical data, asserts that teachers of learners who are visually impaired are "less than proficient" Braille instructors; and this has contributed to illiteracy among those who are blind. She does concede, however, that part of the blame for this situation lies with the university training programs for these teachers. According to Spungin (2003), there are teacher preparation programs that present Braille as a code at the level of knowledge required by a transcriber as sufficient for the teacher's literacy. Reading, writing and speaking, allowing learners of varying ability to experience the different functioning and use of literacy activities is largely ignored. In essence, teacher's interaction with learners with visual impairment builds on learner's knowledge as they develop literacy skills, since the teacher will use a variety of methods of communication with learners and generalize new concepts and skills (Whitehurst, 2003).

In same vein, Amato (2002) completed a descriptive study of standards and criteria for competency in Braille literacy among teacher preparation programs. This study took a comprehensive look at the content of teacher's preparation programs relevant to Braille

literacy. The findings indicated that teachers of learners with visual impairment were not properly trained on how to teach the learners with visual impairment hence the decline of Braille literacy among the Braille users.

Abilu, (2004) and Danielson & Lamb (2006) assert that many Braille teachers are not familiar with the English Braille code and Mathematical notation. In developed countries like United States of America, Braille literacy, Reading and writing is on a steady decline. It is estimated that only 10% of learners with visual impairments are learning it. This is attributed to the fact that mostly those who interact with learners with visually impairment themselves are not competent in Braille and those who are in charge of transcribing Braille are inadequate in numbers. The signal such staff send to the visually impaired learners is that Braille is not a matter of life and death; hence one can earn a living without necessarily being Braille literate.

Miller & Rash, (2001) noted that one benchmark for schools today is how well learners read. Teachers are under pressure to have fluent readers in the earlier elementary classes . Fluency is defined as the capability to read a text quickly, accurately and with expression. Teachers have been taught that average Braille learners will not learn all the Braille contractions until the second grade. The goal of vision teacher has been the learners' acquisition of Braille contractions. Reading speed and fluency have been secondary concerns. Our young Braille reading learners need the opportunity to work on fluency along with the sighted peers. They cannot wait until the second grade to begin working on fluency. The use of subcontracted Braille allows the learners to learn to read first, and then learn the Braille contractions. They are able to concentrate on reading and practice reading which builds fluency, comprehension, and speed.

The literacy development of learners who are visually impaired depends heavily on the children's caretakers and teachers who are responsible for compensating for the absence of spontaneous interaction with written language. A child with many interesting and stimulating experiences of books and reading is likely to be more motivated to acquire a complicated reading medium, such as Braille, than a child who does not even know that oral language can be written down (Erickson & Hatlen, 2007).

Despite its versatility and elegance and notwithstanding the fact that it is the official system of reading and writing for the blind in the United States, Braille is not being taught to most blind children or to adults who lose their vision. This has led to a literacy crisis among blind people. Many commentators on the Braille literacy crisis agree that one of the most significant contributing factors is a negative societal attitude towards Braille, (Riccobono, 2006 and Hehir, 2002). The bias against Braille is further evidenced by hundreds of published accounts from blind people themselves. The archives of the monthly publication of the national federation of the blind, the Braille monitor are full of personal stories detailing the problems blind people experience when they are not taught Braille at an early stage. When educators and parents invite those who are blind or have low vision to read print to the exclusion of reading Braille, the ultimate result is that many of them are functionally illiterate.

U.S education faces a chronic shortage of teachers qualified to teach Braille. In 2003, there were approximately 93,600 learners (Spungin,2003). Far too few teachers of blind children have graduated from accredited programs. A 2000 report observed that the total number professionals graduating from university programs to work with learners who are blind or low vision fluctuated between 375 and 416 per year (Masonetal, 2000). Not all of these teachers needed to gain that endorsement (Frieman, 2004).

In order to approve a program, the National Council for the Accreditation of Teacher Education requires performance-based criteria. The Council for Exceptional Children has developed performance-based standards for programs to train teachers who have a visual impairment. If a candidate graduates from an approved program that follows the council for exceptional children's standards, an administrator can predict that teaching candidates will have the necessary background to teach Braille. However, only nineteen states require candidates who have graduated from an approved program. Seven states require candidates who have only a generic degree in special education with no specific mention of Braille. Twenty-four states require candidates to have taken at least one course in Braille but give no guarantee that the individual is actually competent in Braille or is able to teach (Frieman, 2004).

Teachers who are uncomfortable with Braille are likely to be reluctant to teach it, especially where they can get away without going for students who have low vision but can read some print. To act in the best interest of the blind children and adults, schools must require information that every learner who is blind will have the right to be taught and that Braille be taught by someone who is competent in its use, this is not what is currently happening in schools. Today there is no guarantee that a teacher, even one with credentials will be fluent in Braille. In order to assure Braille fluency, teachers of learners with visually impairment must be tested in their actual Braille skills by way of a comprehensive and validated test. States/countries require Braille teachers to pass the National Certification in Braille Literacy (NCBL) in order to assure competency and fluency in the literacy code. Passing the NCBL examination will not in itself ensure efficiency in Braille teaching, but it will provide a measure on how a person uses Braille. (Frieman, 2004).

In Nigeria, the population of the visually impaired is estimated at 3 million Amino (2002). Very few of those , have received formal education and are capable of reading or writing Braille. The majority have resorted to begging on the streets as a means of livelihood, (Adotoro, 2009). Those who are educated usually depend on the goodness of charities, Non-governmental organization's philanthropists to provide them with information material via libraries in schools, public libraries, and institutions serving the visually impaired in Nigeria.

In regard to the situation in South Africa, apart from the limited in-service training programs for teachers teaching Braille, offered by South African National Council for the Blind together with isolated initiatives at few schools for the learners with visual impairment, educators responsible for Braille instructions are left to struggle on their own .The result is that educators find it difficult to be enthusiastic about Braille if they are insecure about their own knowledge of it (Corn & Koenig, 2002).

In Kenya, the situation is not different even through Kenya Institute of Special Education and a number of universities are training teachers to teach learners with disabilities, still these institutions have not managed to train adequate number of teachers for learners with visual impairment who form 20% of the total population of 3,950,000 (Kenya-census, 2009).

As teachers design their learning environment, it is essential that they consider the diverse needs and skills of the learners they teach. As they integrate the skills and background of these various learners, teachers should ensure that each learner is represented in their classroom design and instruction. They can individualize the environment to meet the needs of learners with disabilities and ensure appropriate opportunities to participate in literacy activities available. Learners with diverse literacy experiences have difficulty making connections between old and new information. Structuring a classroom in a planned manner that immerses learners with disabilities in accessible literacy activities provides them with

opportunities to create connections between oral and written language, thereby gaining access to the general education curriculum (Whitehurst, 2003).

The role of the teacher is to facilitate all attempts at reading, writing, allowing learners of varying abilities to experience the different function and use of literacy activities skills for instance for the visually impaired learners, the teacher has to develop Braille reading and writing skills. Teachers have a variety of methods of communicating with learners by asking questions labeling objects and experiences with new vocabulary and offering practice to help learners remember and generalize new concepts and skills. Teaching staff plan activities so as learners have opportunities to integrate and extend their literacy knowledge by reading aloud, listen to others or tape recording and video tapes in reading corners (Cooper, 2007). Also, the staff teach learners how to use the materials in their environment to promote interest and use of literacy materials throughout the classroom (Connel, 2003). Another method involves officers intentionally making mistakes to demonstrate editing and revising, modeling for learners the importance of making mistakes while demonstrating the writing process (Whitehurst, 2003). Therefore, no studies have been carried out about level of influence of teachers' competency on challenges to learners with VI in reading and writing English Braille grade II, and more so, in Kisumu and Siaya Counties. It is for this reason that this study was set to find out the level of influence of teacher competency of teachers ability in reading and writing English Braille grade II.

2.5 English Braille Grade II code Based Challenges

Like many sighted learners who struggle to learn to read, a proportion of learners with visual impairment has specific difficulties related to reading that cannot be easily explained. Although some of these difficulties may stem from the complexity of the Braille code, they should not be considered merely unavoidable consequences of the use of such complicated

medium of reading. Copping & Brown (2006) have proposed the existence of Braille dyslexia. Both the World Health Organization (1993) and the British Psychological Society (1999) use a broad working definition of developmental dyslexia with no exclusionary criteria. The term may be applied to individuals with sensory impairment such as blindness. Research on dyslexia has shown that the major deficit that causes literacy problem in dyslexia lies in the phonological domain. One of the leading theories postulates that the fundamental impairment that directly causes phonological trouble in dyslexia is a deficit in the temporal information processing (Stein & Walsh, 2000).

The development of language and literacy in children with visual impairment is similar to that of learners who are sighted, (Brings, 2007). Although learners who are visually impaired show clear developmental delays in the production of syllables and the acquisition of their first word, those developmental divergences decline during the course of further development. Generally, no differences can be confirmed when 10 or 50-word vocabularies are compared, (Bigelow, 2005 and Bring, 2007). Learners with visual impairment perform at comparatively lower level as compared with sighted learners on different words, language related tasks identifying, mispronounced word by age 5 and phonemic fluency by age 15 (Koenig & Holbrook, 2000).

Visual impairment seriously challenges a learner who is in the process of learning a language and becoming literate. It has been argued that in the absence of vision, learners may have more difficulties in understanding concepts and the relationships between concepts as well as acquiring generalization about language (Andersen & Dunlea, 1993). It has also been hypothesized that speech perception may be more complicated without fundamental input from looking at mouth movement, (Miller, 2003), Speech perception play a significant role in

learning to read since it supports the proper phonological representations of sounds that are present in the language (Stein, 2000).

The same reciprocal interaction between phonological awareness and reading acquisition that has been supported by individuals who are sighted, appear to be evident in individuals or learners with visual impairment. Some studies have reported poorer phonological awareness in children with visual impairment, (Young, 2000), whereas others have found no difference of children who are blind and those who are sighted, (Dodd & Connell, 2000).

In individuals with visual impairment, their sense of vision is substituted for by the sense of touch as a reading medium. People that learn to read Braille must acquire the ability to extract spatial information from the subtle tactile stimuli, the acquisition of phoneme grapheme correspondence while learning to read initially depends on solid tactile recognition of letters and words. Thus, tactile sensitivity is essential to the reading process. Therefore, Braille is a matter of necessity rather than a luxury for learners with VI to acquire the ability to read and write Braille (Basharu, 2002).

Apart from the tactile nature of Braille, orthography also adds to the complexity of learning to read (Millar, 2003). It has been demonstrated that the logographic nature of contracted Braille deferrers with the development of phonological awareness. The use of contractions, it has been claimed, prevents the possibility of auditory analysis and consequently contributes to problems in syllabication, (Dodd & Conn, 2000).

According to (Swenson & Andrew, 2000) with simple materials and minimum time, teachers of learners with visual impairment can create a community of Braille enthusiasts in the classroom. Braille is no longer a mysterious jumble of dots that are decipherable only by learners who are blind. Rather it becomes a skill that everyone learns and enjoy together. Braille literacy for the sighted classmates builds a bridge between the blind and the sighted

classmates, between general education and Special education and teachers of learners with VI will help to improve the standard Braille in future, when some of the young Braille users may choose a career in the field of visual impairment.

Despite all the described difficulties, most children with visual impairment who study Braille will learn the Braille code. Because of the complexity and nature of Braille, Learners with VI do start reading later and are slow readers than are children who are sighted, (Dodd & Conn, 2000) a proportion of children with VI, however, fail to master the skill despite remedial efforts. Within the sighted population, the term developmental dyslexia is mostly commonly used in relation to the failure to acquire the age-appropriate reading skills. Both phonological awareness and perception play a significant role in the process of learning to read Braille. Learners who find it difficult to read Braille have been reported to have difficulties with the latter two. The complexity of Braille code is blamed on the inability to read and write Braille by most learners with VI (Coppins & Brown, 2006).

The classroom teachers have been struggling to teach Braille code with many rules to learners who have always complained about the same. This has made it almost impossible for the learners to read age appropriate material. Braille readers have two codes to break compared to their sighted peers who have one code to decode- print alone not print to Braille. In addition the sighted readers have many people in the environment to help them "break" the code unlike the learners with VI who have no people to assist them in reading. Learners have always complained about their inability to read Braille just like the teachers who teach them express the views that Braille code is too difficult, (Texas, 2003).

Teachers of learners with visual impairment must often teach a number of skills including finger tactility and the use of technology such as computer with tests to speech screen access software, and there is evidence that Braille instruction is not prioritized. According to one

survey, most teachers spend more time teaching about assistive devices other than teaching Braille reading and writing. These assistive devices for instance magnifiers and optical character recognition (OCR) among others are alternative to difficulty Braille code experienced by both teachers and learners. The latter are under the influence of teachers who complain about "difficulty of the Braille code" (Thirlow et al, 2001).

Attitude about Braille, which is often based on myths and misconceptions about the system are also barriers to proper Braille instructions. One of the major reasons for the increasing illiteracy of the Blind and those with low vision is the historical emphasis on teaching children with a residual vision to read print. Most blind children have some residual vision; they are legally but not totally blind. But many learners who have residual vision cannot read print fluently even with magnification, attempting to read print results in eye strain, headaches, and other problems; furthermore degenerating eye conditions meaning that the learner's vision degenerates whenever they attempt to read Braille. Those with vision, as sight degenerates, they give up saying that Braille is difficult and tedious. Learners with low vision are particularly at risk of not receiving appropriate instruction in Braille. These

Learners tend to receive less direct service from teachers of blind learners and are surrounded with more emphasis on "vision" over non-visual skills and learning techniques. Additionally, if Braille is not introduced early, learner's motivation to accept Braille will greatly decrease due to frustration in learning Braille, which is termed as complicated mode of reading and writing (Lyon, 2009).

There are those who view Braille as a stigma, and it isolates the learners who use it from peers who use print, this is without foundation and has never been backed by any kind of research, on the other hand the experiences of parents of blind children who have successfully introduced their young readers and fought for inclusion of the system in the

child's education suggest that, when Braille is simplified and presented as a medium of instruction and communication, reading and writing becomes fun for the family, children readily embrace the system. This cancels the notion of many who have graded Braille as a "difficult" code ultimately; all of these mistaken beliefs about Braille came down to low expectations of blind learners. Whether they will admit it or not, many of the sighted

Educators and administrators charged with providing instruction to blind learners do not believe in the capacity of their learners or in the effectiveness of Braille

and other alternative techniques used by learners with VI to live successful productive lives.

It has to be noted that a little honest reflection about decline in Braille literacy suggests that the real culprit in this scenario is the inadequate and inappropriate education of the special education teachers who are not competent or confident themselves in using Braille and who also believe that learners should not be expected to compete successfully in school or in life (Jacobs, 2009).

Another misconception about Braille that has contributed to the decline in English Braille grade II reading and writing is the idea of reading Braille which is always slower and challenging than print. While some studies suggest that Braille is more difficult than print and challenging because of its 189 English group signs and letter combinations that may reduce the size of Braille books by making it possible to put more Braille on a page instead of spelling each word out letter by letter, unreliable studies tend to be anecdotal. However, there are those who have found that Braille is an efficient and effective reading medium. Furthermore, the experience of Braille instructors shows that reading speed exceeding 200 words per minute is possible when learners have learned Braille at an early age (Danielson, 2006).

It is often said that technology substitutes the need for hand Braille. The inability of text to speech technology and audio texts, for example, it is advanced as an argument against the use of Braille. The use of speech output and recorded books is a way for learners to gain information, but it does not teach them reading and writing skills. Learners, who normally rely solely on listening as a medium of learning, usually find themselves deficient in areas like spelling and composition. When such learners are asked to read hand Braille they normally complain of difficulties they encounter with the same. Most teachers of learners with VI agree that technology should be used as supplement to Braille rather than as a replacement, even though as cited above, many of them spend more instructional time working with technology than teaching Braille.

No one would seriously suggest alternative sources of information like Television and radio would replace the need for a sighted child to learn to read; the same should be true of Braille (Wells-Jensen (2003). Despite the English Braille grade II code Based Challenges experienced globally, there is need to establish any inherent challenges belying the code difficulties experienced by learners with VI in Kisumu and Siaya counties, with regard to reading and writing English Braille grade II.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter explicitly describes the methods that were used to carry out this research study. It is organized under: Research design, area of study, study population, sample and sampling techniques employed. Also highlighted include instruments of data collection, data collection procedures and data analysis, in the sequence outlined.

3.2 Research Design

This study employed descriptive survey research design to find out challenges faced by learners with visual impairment in reading and writing English Braille grade II in special Primary Schools in Kisumu and Siaya Counties. The descriptive survey research design involves collection of data from a sample of a population with respect to one or more variables (Best & Kahn, 2006). This design was more reliable in giving desired information and answers to the research questions under study, through the purposefully designed questionnaires and interview schedules. This was premised on the fact that an ideal sample population gives information about the whole population. Survey design is also advantageous because it is simple and easy to administer; because questionnaire, "allows collection of accurate information in a relatively shorter period of time" (Nyewebi, 2009). The use of descriptive survey design enabled the researcher to access accurate information easily, seek opinions, describe, analyze, and interpret information easily and clearly. It's appropriately linked research concepts and questions with the study, thus making it the most ideal design and more particularly for the area of study in question.

3.3 Area of Study

This study was conducted in Kisumu and Siaya counties in the lake region located 385 kilometers from Nairobi. Lake Region is situated at longitudes $34^{\circ} 29^{\text{I}}$ and $46^{\circ} 0^{\text{I}}$ East of the

prime meridian and latitude 026 and 0⁰ 44 degrees south of the equator (Kenya Gazette, 2005).

Lake Region is bordered by Rift valley to the North East, Western region to the West. Lake Region is the 5th largest region in Kenya. It had a population of 5,725,744 (5.7 million) as per the 1999 census, within an area of 16,162 kilometers square. This region is one of the poorest regions with a poverty index of 63%, with most people surviving on less than a dollar per day.

Kisumu and Siaya counties have a total of 9 special schools namely: Joyland Special, School Kibos School for the Blind, Lutheran Special Sch for MH, Maseno School for the Deaf, Maseno Sch for the Deaf Blind, Maseno Mixed Special Unit, Equator-round Special school, St. Oda School for the Blind, Nyangoma School For Deaf out of which only two schools are for the visually impaired learners, one in each of the counties. The study was therefore carried out in two selected Special primary schools for the VI, Kibos School for the Blind in Kisumu County and St. Oda school for the blind primary in Siaya County with a population of (968,909 people) in Kisumu and (842,304 people) in Siaya. Out of these, 47.4% of the people in Kisumu and 35.3% of people in Siaya live under extreme poverty. The area has tourist attraction features such as Ndere National Park, Kit Mikaye, and Lake Victoria, which provides a livelihood for most of the residents in the area. The climate is mainly tropical with variation brought about by the differences in attitude and its proximity to the Lake. It's hot and wet most of the times. Farming is the main economic activity ranging from small scale to large scale farming; the latter mostly refers to sugar cane. Food crops grown include maize, millet, sorghum, cassava, and groundnuts.

Fishing is done on the shores of Lake Victoria and fish ponds for fish keeping are available.

The area experiences floods every rainy season. This, therefore, means that water borne

diseases are common for example bilharzia, typhoid, and cholera among others. This, therefore, suggests that such diseases can also be opportunistic sources of blindness and other visual impairment.

Trade is also practiced especially fish buying and selling. There are other commodities of the trade like food crops, but fish is the major item of commerce in the region. It is worth noting that fishing on Lake Victoria, has greatly promoted HIV/Aids infection in the area, as most fishermen tend to oppress the poor women who buy fish from them on condition that they must have sex with them before they get the commodity fish, hence the high rate of HIV/Aids infection resulting into many orphans, widows and widowers, including blindness in some cases; usually arising as a side-effect of the Anti-Retroviral Drugs used by the patient.

Mining and quarrying activities are done in the region, mostly in the southern part of the Lake area.

Livestock keeping is also practiced in the area but the quality of the livestock kept does not generate enough income to the residents; they mostly keep indigenous breeds whose production is very low. The presence of sugar cane growing and fish farms areas has necessitated the presence of industries in the region. This implies that prostitution is rampant, sexually transmitted diseases are common. It is therefore right to conclude that most cases of visual impairments are as a result of STDs infection to the children from the mothers during pregnancy.

Despite the area having favorable conditions for farming, food shortage is common with most people having single meal per day; medical services are inaccessible to most residents, especially to those living in rural areas. Pregnant mothers walk long distances to attend prenatal clinics. It is possible to conclude that poverty prevalence of water masses and

inaccessible medical services are the major possible contributors to visual impairments in the area.

According to a report by the Centre for Strategic and International Studies, (2010) the number of learners with visual impairment in Lake Region stands at about 1232 (Ministry of Education, 2003)

Generally infrastructure in the Lake Region is average as there are a lot of modern buildings coming up mostly in the provincial headquarters. Most of the roads are worn out, but some are being repaired gradually depending on the government a location to the province. In the lake Region, there are 3 modes of transportation namely:

Transport by roads, carriage by air to all countries of the world due to the expansion of Kisumu airport and transport by water mostly to the neighboring countries of Uganda and Tanzania and transport by train along the great East African railway.

Therefore the study is done in Kisumu and Siaya counties because they have the highest number of learners with visual impairment (1,232) as well as hosting the two special primary schools in the former Nyanza province (MOE, 2003).

3.4 Study Population

The study was carried out in two special primary schools for learners with VI in the lake region namely: Kibos School for the blind and St. Oda Aluor. The target population was 2 head teachers, 54 teachers, and 162 learners who were totally blind.

3.5 Sample and Sampling Techniques

Saturated sampling was used to select 147 learners out of 162, 49 teachers out of 54 and 2 head teachers (Mugenda & Mugenda, 2003). It is worth noting that among the 54 teachers

who were purposively chosen, some were teaching other subjects apart from Braille as a subject (Table 1).

Table 1. Population and Sample Frame

Category of Respondents	Target population	Sample selected	Percentage
Head teachers	2	2	100
Teachers	54	49	90.74
Learners	162	147	90.74

3.6 Instruments of Data Collection

The study used questionnaire, interview, and lesson observation schedules as the tools of data collection. These instruments were selected with regard to the information to be collected, time available and objectives of the study.

The questionnaire is the best suited for the study as it can be administered to a large population of respondents in a short period of time with not extra personnel (Creswell, 2003).

The use of questionnaire allowed the researcher to explore areas of questioning to the respondent to get first-hand information about the objectives of the study. Three types of the questionnaires were used for head teachers, teachers, and the learners.

3.6.1 Head teachers, Teachers and Learners Questionnaires

For teachers and head teachers, the questionnaire was divided into three sections. Section A of the questionnaire contained questions on attitude, section B contained questions on school environment, section C contained questions on teacher's competence, and finally, section D

contained questions on complexity of the Braille code as shown in appendix A and B respectively.

3.6.2 Learner's Questionnaire

For learners' questionnaire, section A, contained question on Braille code, section B, questions on reading words written in Braille grade II, and section C, was dictation on writing using Braille grade II as shown in appendix C, section C. All learners in upper primary were tested on basic Braille grade II to ascertain their ability to read and write English Braille grade II material, since it is the standard grade of Braille recommended for upper primary classes.

3.6.3 Observation Schedule

Lesson Observation Schedule, on the other hand, was used during observation in class. This allowed the researcher to see for herself the relevant details in class that makes reading and writing of Braille pose diverse challenges to learners with visual impairment, (Connel, 2003), and further reaffirms that class observation allows a researcher to see exactly what respondents actually do rather than say what they do.

3.6.4 Interview Schedule

Interview guide was administered to few respondents with a purpose of collecting in-depth information which is also qualitative.

3.7 Validity of the Research Instruments.

After pre-testing, the research instruments were presented to experts in the department of Special Education, Maseno University, who were conversant with the topic of study. The recommendations made were used to correct the observed errors before the questionnaires were administered in the field for data collection after thorough validation by the experts.

Face and content validity were used to verify the accuracy of the research instruments used in the study

3.8 Reliability of the Research Instruments

Reliability of the research tools in this study was established through test-retest. A sample population of 15 students and 5 teachers not included in the study was presented with the questionnaires. Pearson product moment correlations revealed a high positive significant relationship for the learner's questionnaires, 0.75, and teachers' questionnaires 0.72 at p-value of 0.05 as recommended by Best and Kahn (2006).

3.9 Data Collection Procedures

Research permit was obtained from the Ministry of Education Science and Technology (M.o.E.S.T) through the school of graduate studies Maseno University. A courtesy call at the County Director of Education office, Sub- County Director of Education Officer's Office and the head teachers' offices in the two counties was thereafter done. Schools were then visited by the researcher to carry out classroom observation interviews and to distribute the questionnaires. For learners' questionnaire, the researcher with the help of research assistants guided the learners to fill the questionnaire in a single sitting, during which the researcher monitored the task to ensure no consultations were done among the learners. For teachers' questionnaire, the researcher administered the questionnaire and gave teachers two weeks to fill it after which she collected. The interview schedule was administered to the head teachers of the two schools, while observation was carried out on different days to ensure that the collected information was adequate in content.

3.10 Data Analysis

Data was organized using descriptive statistics which included frequency counts, means, percentages, standard deviations among others. Classroom observations on the challenges faced by learners with visual impairment in reading and writing English Braille grade II was put in tallies and frequencies.

Qualitative data collected from interviews were organized to themes and sub-themes as they emerged and reported. Quantitative data was collected using questionnaires and analyzed

using descriptive statistics in form of frequency counts, percentages, and means. In scoring the Likert scale scores, positive statements was awarded as follows: Strongly agree (SA)- 5 points, Agree (A)-4 points, Undecided (U)- 3 points, Disagree (D)- 2 points and Strongly Disagree (SD)-1 point.

In the interpretation of the scores above three implied positive attitude, while a score of three implied a neutral attitude while that below three implied negative attitude. Pearson Product Moment Correlation was carried out to determine the relationship between performance in reading English Braille grade II and attitude, the environment, Braille code based challenges, and teacher based challenge.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

The views presented in this chapter are analyzed from the feedback obtained during data collection that included questionnaires, interview schedule, observations, and document analysis. The findings are presented according to the objectives of the study, beginning with the response return rate, and finally the objectives of the study. Results are presented in tables and inferences made using 99% and 95% confidence intervals. Beginning with the response return, the results are presented as follows:

4.2 Return Response Rate

This was obtained by evaluating sample size return response. All teachers, head teachers, and learners with VI were considered during the research and the results presented as follows:

Table 2 Response Return Rate

Category of Respondents	Total population	Return Response	Percentage
Head teachers	2	2	100
Teachers	49	41	84
Learners	147	135	92

Source: Field Data, 2014

The results in table 2 show that majority (92.0%) of the respondents gave full feedback during data collection. This translates into head teachers, 41 out of the 49 teachers and 135 learners out of the total 147. This is an good sample return rate as it gives information that is reliable, implying that the response was adequate. Given that 92% is the provided valid data for the study, the data was therefore analyzed as recommended by Mugenda and II in Mugenda (2003).

4.3 Learner Attitude Based Challenges

In an art to finding out the learner attitude based challenges faced by learners with VI in reading and writing English grade selected special primary schools, the researcher sought to establish learners' attitude based on teachers' perception. The specific items included, whether learners enjoyed reading Braille, tests preferred between oral and written exams, allocation of time for Braille on the timetable, learner's belief of Braille grade II, and whether learners complained about Braille code contractions. The results are presented in table 4.2 as shown below.

Table 3. Learner's Attitude towards Reading and Writing English Braille Grade II

Learner's Attitude	SD F (%)	D F (%)	U F (%)	A F (%)	SA F (%)	M
Learners hate reading and writing Braille grade II material	3(7.3)	29(70.7)	2(4.9)	4(9.8)	3(7.3)	2.3
Learners find it comfortable to read and write Braille grade II material.	9(22.0)	23(56.1)	-	6(14.6)	3(7.3)	2.3
Learners want more time allocated to learn reading and writing Braille grade II.	2(4.9)	19(46.3)	2(4.9)	12(29.3)	6(14.6)	3.0
Learners feel that reading and writing be removed from the time table.	6(14.6)	14(34.1)	4(9.8)	9(22.0)	8(19.5)	3.0
Learners in this school have peers at home who use Braille grade II	3(7.3)	11(26.8)	4(9.8)	15(36.6)	8(19.5)	3.3
Learners in the school have difficulty to use modern technology in reading and writing Braille grade II	7(17.1)	16(39.0)	3(7.3)	10(24.4)	5(12.2)	2.7
Braille reading and writing is affected by other curriculum subjects	5(12.2)	15(36.6)	1(2.4)	15(36.6)	5(12.2)	3.0
Learners in this school complain about Braille grade II	3(7.3)	21(51.2)	3(7.3)	9(22.0)	5(12.2)	3.4
Learners copy notes dictated by teachers	8(19.5)	23(56.1)	4(9.8)	6(14.6)		2.1
Overall mean						2.8

Source: Data 2014

The results in table 3, indicate that most learners, (71%) did not enjoy reading Braille grade II material. This could be as a result of their negative attitudes towards reading Braille grade II. Also, over three-quarters (78%) of them preferred oral to written test items during examinations. It also emerged clearly from the results that slightly over half (51.2%) of the learners underscored that limited time was provided for Braille grade II on the timetable; an aspect that implied inadequate teaching of the Braille grade II. Majority of them (75.6%)

denied that they copied dictated notes in Braille grade II. Over half of the sampled teachers (56.1%) conceded very limited use of Information Technology in teaching and learning of Braille grade II. However, considering an overall score of 56% on the Learner Attitude item, it is evident that majority of the learners confirmed a negative attitude towards Braille grade II code. Consequently, this deficiency continues to compromise their mastery of Braille grade II code.

An interview with the sampled head teachers revealed that attitude was a significant problem towards the acquisition of reading and writing English Braille grade II among learners with VI. The head teacher, St. Oda Aluor School for the Blind observed that:

“Currently, we have realized that the main problem with the learners is their negative attitude towards Braille due to its many rules that are complicated and numerous contractions. These contractions and norms are many, so even the learners get confused on how to use or apply them. In fact, we had a bright learner who literally hated Braille and yet he was blind, and so it was difficult for him to learn. He developed a negative attitude and eventually we had to involve him in internal Guidance and Counseling and external counselors from the Counsel of Persons with Disability. At the end of his primary circle, the learner changed his attitude and scored 390 marks in the year 2010.”

From the findings, it is clear that the Braille code has many rules and contractions which are not easily understood by learners; hence they get confused on how to apprehend them. This eventually leads to a negative attitude among the same learners. This findings also imply that the learners' attitude is an important factor in learning English Braille grade II, thus when learners develop positive attitude, they are bound to perform better and this is why the cited learner improved and performed better on change of attitude from negative to positive. When

there is a change in attitude from negative to positive, the learner's ability to acquire Braille grade II skills and good performance improves and therefore they no longer find a problem in learning the many rules and Braille contractions. When the learners develop positive attitude, they willingly engage in listening reading and liking English Braille grade II. Activities in a view of mastering Braille grade II skill, therefore when tested, they are likely to excel. This confession shows that negative attitude has stood out as one of the major factors that hinder learner's ability in gaining competencies in Braille grade II. These findings are in line with those of Danielson, (2006) with other renowned proponents (Corn and Koenig, 2002; Hong, 2004; Koenig and Holbrook, 2000;) who share the view that Braille literacy is declining because of the negative attitude of the learners towards reading and writing Braille Grade II.

4.3.1 Braille Grade Preference among Learners with VI

In order to find out the Braille grade that learners preferred, they were asked to state the Braille grade during an interview. The results were coded and presented as shown in table 4.

Table 4. Grade of Braille Preferred

Grade Preference	Frequency	Percent
grade one	109/135	80.7
grade two	26/135	19.3

The results in table 4, reveal that majority of the learners preferred grade Braille I to Braille II. From the results, a whopping majority (81%) of the learners indicated that they preferred Braille grade I, which is used by lower classes 1-3 which is far below them, while a peltry 19.3% of the learners indicated that they preferred Braille grade II which is appropriate for

upper primary learners. This is an indication that learners had adverse attitude and dreaded Braille grade II.

4.3.2 Relationship between Attitude and Score on Reading Braille Grade II

To establish the relationship between the learners' preference for Braille grade II and their scoring on writing Braille grade II, a simple cross tabulation was carried out as shown in table 5.

Table 5. Cross Tabulation between Reading Braille Grade II and Learner Attitude

Count	Read	Total		
		Below 50 %	above 50%	
Do you like the Braille writing equipment available in your School	Yes	3	7	10
	No	99	26	125
Total		102	33	135

Spearman's rho (r_s) = 12.136, $p = .000$

The results indicated that the 5, students who liked the Braille writing equipment scored below 50 % while 99 of the pupils who did not like it score above 50%. On the other hand, 7 of the students who preferred the Braille machines got above 50% while 26 of those who did not like the machines scored above 50%. The overall total number of the learners who scored Below 50% was 102 (75.6%) of the entire sampled learners while those who scored above 50% were 33 (24.4%). Spearman's rank correlation value (rho) was 12.136, which was

significant at alpha level 0.05. This shows that there is a relationship between the attitude of the learners and their academic performance. Learners who had a negative attitude towards Braille grade II had low performance while those who had positive attitude had high performance. However, pupils who had a positive attitude were very few as compared to those who had a negative attitude towards the Braille machines, thus leading to low overall performance in the reading Braille grade II. These results agree with those of Danielson (2006) who found out that Braille literacy is declining because of the perception of the learners towards reading and writing Braille. Another study also done by the Foundation of Croatian Braille (1994) stated that negative attitude towards Braille by learners may be caused by lack of a well-structured curriculum and Braille readiness activities. This makes learners feel that Braille is not significant and, therefore, ignore it. Contrary to these findings Troughton (1992) cited in Hong (2004) findings which revealed that more participants read more rapidly subcontracted Braille compared to contracted Braille which works against the speed at which one reads and writes and that poor reading was more dependent on teachers than attitude. This implies that to some extent, other factors tend to contribute more to poor reading and writing of English Braille grade II, but attitude remains the most significant factor that causes poor skill acquisition in English Braille grade II. This, therefore, indicates that attitude is one of the major challenges towards reading and writing English Braille grade II. These results also clearly imply that negative attitude has highly posed a challenge towards learning Braille grade II, which thus leads to low performance. Most learners feel that reading and writing Braille grade II is tedious, because of its many rules and contractions. This makes learners lose interest and lack of enjoyment towards Braille material.

4.4 Environmental Challenges

In order to find out the Environment based challenges faced by learners with VI in reading and writing of Braille Grade II in special primary schools, teachers were asked to share their opinions on the same. Among the factors considered were the number of teachers, teacher-pupil ratio, usage of computers, story books in Braille in the school library, use of teaching aids and the mutual relationship among learners.

The results are presented as shown in table 4.6.

Table 6. Learning Environment

Learning environment	SD	D	U	A	SA	MEAN
	F (%)	F (%)	F (%)	F (%)	F (%)	
In this school, learners have enough materials for reading and writing Braille	10(24.4)	20(48.80)	1(2.40)	8(19.50)	2(4.9)	2.3
In this school, there are enough teachers who teach Braille	3(7.3)	21(51.2)	3(7.3)	6(14.6)	8(19.5)	2.9
In this school learner's ratio to that of teachers is over 10:1	15(36.6)	11(26.8)	3(7.3)	3(7.3)	9(22.0)	2.4
In this school learners use computers and typewriter	14(34.1)	13(31.7)	2(4.9)	10(24.4)	2(4.9)	2.3
This school has enough storybooks in Braille in the library	9(22.0)	16(39.0)	2(4.9)	8(19.5)	6(14.6)	3.0
Teachers in this school use teaching aids during Braille lessons	8(19.5)	14(34.1)	4(9.8)	10(24.4)	5(12.2)	2.8
In this school support services are offered to learners who read and write using Braille	9(22.0)	12(29.3)	5(12.2)	13(31.7)	2(4.9)	2.7
In this school, all teachers are competent to teach Braille	11(26.8)	15(36.6)	3(7.3)	6(14.6)	6(14.6)	2.5
In this school, there are enough ramp and pathways	14(34.1)	8(19.5)	6(14.6)	12(29.3)	1(2.4)	2.5
In this school sighted learners read for learners with VI.	5(12.2)	12(29.3)	1(2.4)	15(36.6)	8(19.5)	3.2
Overall mean						2.7

KEY: SD-Strongly Disagree, D-Disagree, U-Undecided, A-Agree, SA-Strongly Agree

From the results in table 6, majority of the teachers, 27 (65.8%) of the sampled respondents disagreed that in this school learners use computers and typewriters and that learner's ratio to that of teachers is over 10:1 as perceived by (58.5%) of the teachers. In addition, the school did not have competent teachers to teach English Braille grade II, and there were few story books in Braille, (39.0%) most of them observed. The findings also revealed that the schools did not have enough ramps and pathways as revealed by (53.6%) of the teachers, (34.1%) and

(19.5%) strongly disagreed and disagreed respectively. The overall results show that the school environment did not favor learners' instruction and communication in English Braille grade II. This study agrees with previous studies such as (Pressley, 2005) which concluded that classroom has to have labels with words and pictures everywhere so that learners constantly connect written language with

The things they represent, teachers have to display these labels based on learners' needs and interests to provide children with disabilities support in the classroom (Pressley, 2005). In addition, Frieman (2004) found out that many Scholars and other concerned personnel about the Braille standards look at teacher's caseload as a big influence to have the learners learn Braille. Many of such teachers attend to more than 6 learners per day which does not allow them to have adequate time to carry out individual instruction. Teachers have always attributed that inability to instruct Braille to heavy case load, teachers, therefore, argue that too much case load work down their competence. They suggest that the numbers of learners they attend to be reduced to four per day, an idea the administrators have rejected saying that this will transform many instructors into idlers. This reveals much about the influence of the environment on learning and reading English Braille grade II.

4.4.1 Relationship between Environment and Learners Performance

In order to establish the relationship between learning resources/material and learners performance, first, learners were asked to indicate the number of storybooks they read with respect to the availability of these books in Braille in school and teachers efforts to encourage them read the books. The results were presented in table 4.7 as shown.

Table 7. Number of Story Books

Number of Story books	Frequency	Percent	Valid Percent
0	90	66.7	66.7
1	34	25.2	25.2
2	8	5.9	5.9
3	3	2.2	2.2
Total	135	100.0	100.0

The results in table 7 indicate that majority of the learners 90(66.7%) did not read books at all, 34 (25.2%) read one book in a week, 8(5.9%) read 2 books in a week, and 3(2.2%) read 3 books in a week. In this case, scarcity of reading is largely dependent on the availability of the books in the school, which in turn contributes to a better environment for learners in school. This is an indication that the school environment was of a significant challenge to learners with VI.

4.4.2 Relationship between Resources and Performance

In order to establish the relationship between Performance and Availability of the resources, Pearson correlation coefficient was carried out as shown in table 4.8.

Table 8. Correlation between Number of Story Books Read and Performance

	Read 1-20 word written in Braille mixed grade	Write the given words in Braille grade two
Number of story books read in a week	1	
Read 1-20 word written in Braille mixed grade	0.460**	1
Write the given words in Braille grade two	0.501**	0.881**

Table 8, Presents the results of the findings. The results indicate that there is a moderate positive significant relationship between performance in both writing and reading and availability of the resources at the school. According to Kothari (2003) a correlation of 0.4-0.69 is a moderate correlation, 0.7-0.8 is a high correlation. For instance, Number of story books had a strong positive significant association of ($r=0.460$, $p<0.01$) and ($r=0.501$, $p<0.01$) for reading and writing respectively. From these results, it can be deduced that low performance was largely contributed to by the scarcity of the resources.

In addition, an interview with the head teacher of Kibos School for the blind, revealed another environmental factor that contributed to the inability to read and write Braille grade II. He noted,

“Braille textbooks are very expensive, and they are not readily available as they are produced by ABC publishers only. Braille writing equipment such as Braille machines and other equipment are not enough. Technology is not sufficient to enable all the learners benefit from the machines. In addition, teachers are few hence large numbers of learners to teacher ratio which even makes the environment more difficult for learners with VI”

From the head teacher's views, it is clear that learners with VI are greatly disadvantaged due to the unfavorable environment that limits their ability to read and write Braille grade II. When learners with VI fail to get access to the required favourable environment that can support their learning, they remain helpless, and therefore the chances of gaining simple basic skills remain rare. This could be the reason as to why these challenges remain a problem to learners with VI. The current results concur with Quigly (2000) findings that a rich environment has a significant role to play in the reading and writing of English Braille grade II. Schools insist that for any proper learning to take place, the learner must be supplied with all that can support learning including technology. In addition to the present findings, a different study on the same found that the literacy development of children who are visually impaired depends heavily on the children caretakers and teachers who are responsible for compensating for the absence of spontaneous interaction with written language. A child with many interesting and stimulating experiences of books and reading is likely to be more motivated to acquire a complicated reading medium, such as Braille, than a child who does not even know that oral language can be written down (Erickson & Hatlen, 2007). It is, therefore, clear that environment plays a crucial role in reading and writing English Braille grade II among learners with visual impairment in Kenya.

4.5. Teacher Based Challenges

The study sought to establish teacher based challenges faced by learners with VI in reading and writing English Braille Grade II in selected special primary schools. This specifically entailed assessing teacher's competency in teaching and dealing with learners with VI. Specific items considered included; training in Braille grade II, learning of Braille in the school by the teachers, carrying of individual instruments during Braille lessons, mastery of Braille rules, remedial teaching, Braille literacy among others. The results are presented in table 9.

Table 9. Competency of Teachers

	SD f (%)	D f (%)	U f (%)	A f (%)	SA f (%)	M
All teachers in this school are trained to teach Braille grade II	10(24.4)	26(63.4)	1(2.4)	3(7.3)	1(2.4)	2.0
Reading and writing problems are caused by developmental delays among learners with visual impairments	11(26.8)	10(24.4)	3(7.3)	12(29.3)	5(12.2)	2.8
All untrained teachers learned teaching Braille from this school	5(12.2)	19(46.3)	3(7.3)	11(26.8)	3(7.3)	2.7
In this school teachers carry out individual teaching aids instruments during Braille lessons	7(17.1)	22(53.7)	4(9.8)	7(17.1)	1(2.4)	2.3
In this school teachers have not mastered Braille rules	3(7.3)	5(12.2)	5(12.2)	22(53.7)	6(14.6)	3.6
In this school teachers carry out remedial teaching daily	8(19.5)	25(61.0)	2(4.7)	4(9.8)	2(4.9)	2.2
In this school, teachers are well equipped to teach pre-Braille activities	8(19.5)	17(41.5)	3(7.3)	10(24.4)	3(7.3)	3.0
All teachers are Braille literate	12(29.3)	17(41.5)	4(9.8)	7(17.1)	1(2.4)	2.1
Teachers who carry out remedial teaching always post good results	3(7.3)	19(46.3)	2(4.9)	9(22.0)	8(19.5)	2.3
Overall mean						2.3

The results in table 9. revealed that a cumulative 26.8% of the respondents disagree that teachers in these schools are not trained to teach Braille grade II, 63.4% disagreed as reported by 90.2%. The outcome also shows that untrained teachers did not learn Braille from the school, 19 (46.3%) of the respondents affirmed, that teachers do not carry individual teaching and teaching aids during Braille lessons as revealed by 29 (70.8%). In addition, the findings further reveal that teachers don't perform remedial teaching on English Braille as supposed

by 33(80.5%). As stated by 22 (53.7%) learners of the sampled respondents. A surprising finding was that almost all teachers were not denied teaching learners well on Braille literacy as reported by 70.8% of them, who further classified teachers as illiterate. Teachers who carry out remedial teaching do not always post good results as reported by 22(53.6%) of the teachers.

The findings are not far from Abilu (2004) findings which assert that many Braille teachers are not familiar with the English Braille code and mathematical notation, so they are unable to motivate learner's interest towards Braille grade II. In addition, Amato (2002) concluded another study of standards and criteria for competency in Braille literacy within teacher preparation programs. This study took a comprehensive look at the content of teacher's preparation programs relevant to Braille literacy and found that most teachers were not literate in English Braille grade II. This is a clear indication that a significant number of teachers of the visually impaired learners are not properly trained on how to teach the learners with visual impairment hence incompetent, thus leading to a decline of Braille literacy among the Braille users. Furthermore, during a researcher's observation, the study revealed that the teachers were not competent to support learners with profound blindness in acquisition of Braille grade II skills.

At one of the school for the visually impaired Thursday morning at 8.00 am in class 6, when the teacher stepped in class for English Braille lesson without any resources. He greeted the students and began teaching the lesson of that day. The learners were so bored, and their participation was so minimal. Nevertheless, the teacher proceeded to teach. The lesson lasted for 20 minutes after which the teacher walked out of the class.

The teacher's mode of introducing the lesson was not appropriate, he entered the class and immediately began teaching without reviewing the previous lesson for connectivity between

the previous and present lesson. That was a poor mode of introducing the lesson, and thus the teachers could be termed to be incompetent, therefore, the learners were confused and did not participate in learning, a result of incompetence. The teachers had no any material and schemes of work and records of work, an indication of unpreparedness, which led to the completion of the lesson in a span of 20 minutes. The results reveal a total deficiency of competency among the teachers teaching English Braille grade II in special primary schools for learners with visual impairment.

Head teachers comments in their interview on teacher's competency in teaching English Braille grade II were similar. It clearly emerged that not all teachers were able to teach Braille grade II yet they were trained. Only a few were able to effectively teach learners with VI. One of the head teachers, from the selected school for the Blind made the following confession:

"Most of the teachers are only able to teach Braille grade I. They are not comfortable assisting learners on Braille grade II. In fact, most of them prefer to teach other subjects rather than Braille since they are insecure about their own knowledge of it. Most teachers are not competent. They are less experienced and for this reason we need more teachers from the government, who are well trained."

These comments are clear as seen from the head teacher's point of view. These findings mean that teachers are not competent enough to teach Braille grade II since most of them are comfortable teaching Braille grade I. In addition, they elope teaching braille code language and instead prefer teaching other subjects as revealed. Thus they are incompetent and learners are prone to more difficulties related to teacher competency. When teachers express inability to handle learners in Braille code based language, learners may not be able to gain this skills on their own since they need proper guidance. This leads the learners into a difficult situation

thus reducing them into incapable learners, which is a great challenge. Most of the teachers in these schools, are also not well experienced in teaching learners with VI. With regard to the situation in South Africa, apart from the limited in-service training programs for teachers teaching Braille offered by south African National Council for the Blind together with isolated initiatives at few schools for the learners who are blind, educators responsible for Braille instructions are left to struggle on their own. This study's findings are similar to the results which revealed that educators find it difficult to be enthusiastic about Braille if they are insecure about their own knowledge of it (Corn & Koenig, 2002). In Kenya, the situation is not different. Even though Kenya Institute of Special Education and a number of universities are training teachers to teach learners with disabilities, still these institutions have not managed to train adequate number of teachers of learners with visual impairments who form 2.5% of the total population of 3950000, (KNBS, 2009). This thus implies that teachers are not competent enough to teach learners with VI in reading and writing English Braille grade II.

4.6 Braille Code Based Challenges

To establish the Braille code based challenges to learners with visual impairment in reading and writing English grade II, the researcher sought views from the teachers as well as learners. Some of the items teachers were asked included; ability of the learners in the schools to read and write English Braille grade II; whether learners complained of the Braille rules; priority given to Braille; preference of print/ Braille in the school and time allocated for Braille in school time table. The results are presented as shown in table 4.11:

Table 10. Braille Code Based Challenges

Braille code Based Challenges	SD f (%)	D f (%)	U f (%)	A f (%)	SA f (%)	M
All learners in this school can read and write Braille grade II	12(29.3)	16(39.0)	2(4.9)	10(24.4)	1(2.4)	2.3
Learners in this school complain of Braille rules	1(2.4)	11(26.8)	4(9.8)	20(48.8)	5(12.2)	3.4
In this school, Braille is not given first priority	1(2.4)	13(31.7)	5(12.2)	15(36.6)	7(17.1)	3.3
In this school, learners with VI prefer print to Braille because Braille is tedious,	4(9.8)	8(19.5)	3(7.3)	18(43.9)	8(19.5)	2.6
Most learners in this school do not complete their assignments in Braille grade II	6(14.6)	6(14.6)		21(51.2)	8(19.5)	4.0
Most learners in this school frequently borrow Braille story books from the library	7(17.1)	21(51.2)	3(7.3)	10(24.4)		2.4
Most learners in this school do not like Braille	3(7.3)	7(17.1)	5(12.2)	18(43.9)	8(19.5)	4.0
In this school, Braille is not slotted in the school timetable	6(14.6)	20(48.8)	5(12.2)	6(14.6)	4(9.8)	2.6
In this school, library lessons are slotted in the school time table	4(9.8)	22(53.7)	2(4.9)	9(22.0)	4(9.8)	2.7
In this school notes on the notice boards are written in Braille grade two	9(22.0)	23(56.1)	2(4.9)	2(4.9)	5(12.2)	2.2
Overall mean						2.4

Braille code challenges were clear as obtained from the results in table 10, the results indicates that, about two-thirds (68%) of teachers perceived their learners as unable to read and write English Braille grade II. Three in every four of the teachers conceded that information on the school notice board was not posted in Braille grade II. However, teachers did not complain of Braille grade II as reported by 20 (48.8%) of them, but 23 (56.1) disagreed writing notes in Braille grade II. The majority of the learners did not like Braille code rules and contraction as indicated by 18 (43.9%) of the teachers. In addition learners with VI did not complete their assignments in Braille grade II as reported by 21 (51.2%) of teachers, and were not able to read Braille story books, 21(51.2%) teachers agreed. The general implication is that learners faced a lot of challenges with Braille grade II, and therefore, this affected their ability to read and writing English in Braille grade II. In addition, most teachers had challenges with Braille grade II as indicated by majority of them, 16(39.0%) and therefore this led to low ability of learners to read and write Braille grade II English. These results agree with Dodd Conn (2000) findings which found that the logographic nature of contracted Braille differs with the development of phonological

awareness. Furthermore, other studies discovered that visual impairment seriously challenges a learner who is in the process of learning a language and becoming literate. It has been argued that in the absence of vision, children may have more difficulties in understanding concepts and the relationships between concepts as well as acquiring generalization about language (Andersen and Dun, 1993).

When head teachers were asked to share their views concerning Braille code challenges, they reported a significant problem. One of the head teachers noted,

“The Braille machines are very difficult to handle and need a lot of patience and consistence. We need more experts since the Braille has many contractions and rules which must be followed carefully during the learning and teaching process. Learners also face a lot of challenges since they have to use Braille as medium of communication.”

From these findings it is clear that Braille code based challenges are a major problem to learners with VI. The use of contraction prevents the possibility of auditory analysis and consequently contributes to problems in syllabication, a problem most teachers encountered. In addition Thirlow et al., (2001) found that teachers of learners with vision loss often teach a number of skills including cane training and the use of technology such as computer with text to speech screen access software, and there is evidence that Braille instruction is not prioritized. Most teachers spend more time teaching about assistive devices other than teaching Braille reading and writing. These assistive devices for instance magnifiers are alternative to the difficulty of Braille code experienced by both teachers and learners. The latter are under the influence of teachers who complain about “difficult Braille code. In addition, more studies revealed that Braille code challenges and difficulties are caused by

more misconceptions and have great influence on learning and writing English Braille grade

One of these misconceptions about Braille that has contributed to the decline in English grade II reading and writing is the idea of reading Braille which is always slower and challenging than print while some studies suggest that Braille is more difficult than print and more challenging because of its 189 English Group Signs and letter combinations that may reduce the size of Braille books by making it possible to put more Braille on a page instead of spelling each word out letter by letter. Unreliable studies tend to be anecdotal. However, there are those who have found that Braille is an efficient and effective reading medium. Furthermore, the experience of Braille instructors shows that reading speed exceeding 200 words per minute is possible when learners have learned Braille at an early age (Danielson, 2006). This is an implication that Braille code based challenges have a significant influence on reading and writing of English Braille grade II.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents conclusions and recommendations of the study based on the objectives. The conclusions accommodate the entire study. Recommendations are the results of the gaps in the research areas and the solutions to the findings. Suggestions for further research are crucial into this apt and significant subject matter. To begin with, conclusions are presented.

5.2 Summary of Findings

The findings indicated that learners had a negative attitude as indicated by a mean of 2.8 which was attributed to the many contractions and rules used in Braille grade II. It also emerged that learners preferred Braille grade I to II as indicated by only 19.3% of them who preferred Braille grade II against the 80.7% who were comfortable with Braille grade I. Finally, there was a relationship between Braille preference and score, which was significant at 0.5, implying that learners who scored 50% and above had liking of Braille equipment while those who scored below 50% did not like it and were termed as having negative attitude.

The overall results show that the school environment did not favor learners' instruction and communication in English Braille grade II as indicated by a mean of 2.7. In addition, it was clear that majority of the learners 90(66.7%) did not read books as expected, implying that there was scarcity of reading materials. There was a also a positive significant correlation between number of books read and performance, with views from head teachers in an interview indicating that learners did not have a conducive learning environment due to lack of resources.

The results reveal a total deficiency of competency among the teachers teaching English Braille grade II in special primary schools for learners with visual impairment as indicated by

mean of 2.3 which is low hence influence the learner acquisition of Braille grade II skills.

The findings from interview schedule meant that teachers are enthusiastic enough to teach Braille grade II since most of them are comfortable teaching Braille grade I.

Concerning Braille code complications, it was clear from the findings that learners faced a lot of challenges with Braille grade II, and therefore, this affected their ability to read and write English in Braille grade II as indicated by a low mean of 2.4. In addition, most teachers had challenges with Braille grade II as indicated by majority of them, 39.0% and therefore this led to low ability of learners to read and write Braille grade II English. It was also clear that most teachers spend more time teaching about assistive devices other than teaching Braille reading and writing.

3.3 Conclusions

Based on the findings of the present research, the study made the following conclusions:

Attitude is a significant factor towards learner's acquisition of English Braille grade II skills and performance. Negative attitude has negative reputation towards learner's ability to read and write English Braille grade II. As per the results, learners perform poorly due to negative attitude. Therefore learners have a negative attitude towards reading and writing English Braille Grade II in the selected special primary schools.

Environment based challenges are a key to determining learner's ability to respond positively to skill acquisition. Poor environment which cannot accommodate learners with disability is a direct cause of poor performance, while inclusive or child friendly environment has a positive implication towards better learning and the consequences are good academic performance. This can be drawn from the current study findings, whereby the state of poor school setting such as poor planning, leading to lack of ramps and good pathways makes the environment uncondusive to learners with visual impairment to comprehend educational instructions. This

could be a significant cause to learner's inability to read and write English Braille grade II since the environment is unfriendly to learners with VI.

The third factor is the teacher's competency; this has the ability to determine the learner's performance. In fact, teacher's competency can determine learner's attitude towards English Braille grade II. Incompetent teachers have no ability to influence learners towards learning English Braille grade II. Therefore, some teachers were not enthusiastic to teach Braille grade II as they are insecure of their own knowledge about it.

Braille code based challenges cannot be denied as factors that highly contribute towards learner's inability to read and write English Braille grade II. Difficult rules for Braille grade II could be attributed to the failure in English Braille grade II skill acquisition, which is not only a problem to the learners, but teachers as well. It can be concluded that Braille grade II is a challenge to both learners and teachers due to its many rules and contractions.

5.3 Recommendations

Based on the study findings, a few recommendations were made:

The study highly recommends that learners be introduced to English Braille grade II, at an early stage so as to create positive attitude towards the same.

The Ministry of Education and other education stakeholders should heavily invest on Inclusive Education to achieve an ideal School for all round learning environment: thus; a disability-friendly environment; adequate, qualified human resource (educators and the paramedics) as well as the critical non-human resources like learning materials for learners with visual impairment.

The study further recommends that English Braille grade II instructions be given first priority in the school timetable, so as to make it as equally important and reduce the challenge of Braille code through allocating more Braille lessons on the time table.

Individualized Education Program should be made mandatory in the instruction of learners with learning difficulties in Braille Code.

5.4 Suggestion for Further Studies

i). The study established that negative attitude of learners with VI had an influence on learners' ability to read and write English Braille grade II. The study therefore suggests further studies to be carried out on the causes of negative attitude among learners with VI towards Braille grade II.

ii). The study has not covered the impact of teaching and learning aids on the mastery of English Braille grade II in special schools for learners with VI. This is a timely and paramount study to this field and should be taken into consideration.

iii). Teacher's competency goes hand in hand with the ability of learners to master reading and writing English Braille grade II, the study therefore suggests more studies to be carried out on the influence of teacher's competency on learner's ability to read and write English Braille grade II.

iv). finally, the study suggests further studies to be carried out on the complexity of the Braille code and its influence on learner's ability to master Braille skills.

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