

**THE EFFECT OF LANGUAGE CODE SWITCHING ON ACADEMIC
ACHIEVEMENTS OF LEARNERS WITH HEARING IMPAIRMENT IN SOCIAL
STUDIES IN KAKAMEGA COUNTY.**

BY

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UNIVERSITY OF NAIROBI
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DECLARATION

I, the undersigned hereby declare that this proposal is the result of my own work, except for quotations and summaries which have been duly acknowledged. This work has not been presented to any other college or institution of higher learning for award of any other degree.

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This research proposal has been submitted for approval with my permission as the University supervisor.

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DEDICATION

To my family and friends: for their inspiration and encouragement.

To my mother and father, for their selflessness in bringing me up,

To my supervisor who walked with me the entire duration and the entire department of psychology University of Nairobi.

To you God, I will be forever thankful.

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ABSTRACT

Background: The language of instruction for learners with hearing impairment is mainly Kenyan Sign Language with English Code switches used by teachers to explain concepts. However, the summative assessment of the knowledge skills and attitudes gained is done using test items designed in the English language only.

Aim: This study demonstrates the effect of language code switching on academic achievements of learners with hearing impairment in social studies.

Method: This was comparative case study that focused on the performance of learners with hearing impairment in two tests in social studies in Kakamega County in Kenya.

The population for this study was class eight Learners with hearing impairment in mixed special schools for the deaf who had fairly covered the social studies primary school syllabus. The study sampled 40 learners and reported on their perceptions of Learners with hearing impairment on language code switching by the use of self completed likert scales. Descriptive statistics and numerical values such as percentages, frequencies, means and t-test were used to report on the findings.

Findings: It was established that more than 50% of the trainees indicated they preferred of test items designed using code switches. The performance on the test with code switches were better than the performance on English only test.

Conclusion: Using test items designed using language code switches enables learners with hearing impairment to exhibit better the learning gains in social studies.

Key Words: *language code switching, Perceptions, sign language, assessment of learning.*

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ACRONYMS AND ABBREVIATIONS

CS -	Code Switch (es)
EL -	Embedded language.
HI -	Hearing Impairment
KIE -	Kenya Institute of Education
KCPE -	Kenya Certificate of Primary Education
KNEC -	Kenya National Examination Council
KSL -	Kenyan Sign Language
KSLRP -	Kenya Sign Language Research project
ML -	Matrix/Main Language
MLP -	Matrix language principle
MoE -	Ministry of Education
SEN -	Special Educational Need
SNE -	Special Needs Education

CHAPTER ONE

1.0 Background of the Study

Language plays an important role in the teaching and learning process (Vygotsky, 1978). It is the vehicle that determines to what extent the learner has acquired the knowledge, skills, attitudes and values of a prescribed instructional programme. The teacher is tasked to deliver the subject content in the prescribed language of instruction and although this may be the case in policy; practice has given a different picture altogether (Ogechi and Ogechi 2002).

The language of instruction from primary to tertiary institutions in Kenya is English except for special institutions with learners with hearing impairment. According to the Ministry of Education language policy, Kenyan sign language is the language of instruction for learners with hearing impairment as stipulated in the National Special Needs Education Policy Framework (MoE 2009a).

In the educational context, language is important for comprehension and making use of knowledge. Shale (1988) describes the role of the teacher in the "ideal educational process" in four parts with regard to use of language: first, the teacher and the student determine and validate what the student knows. Second, on the basis of what is determined, the teacher may provide additional declarative knowledge. Third, the teacher and the student negotiate the meaning of what is taught. The assumption is that the teacher will clarify points for the student, but in the best exchanges the teacher also gains understanding (Shale & Garrison, 1990). Fourth, through

repetitions of steps two and three, both the teacher and the student advance in their knowledge, and the student's knowledge are validated by the teacher.

Empirical studies have demonstrated that it is quite difficult to find classroom discourse fully in a single language (Ariflin & Husin 2011). Other languages understood by the speakers and the listeners may be used, thus, switching between the languages is common (Martin 2005; Arthur & Martin, 2006; Mahadhir & Then, 2007; Flowerdew & Miller, 1992; Mustafa & Al-Khatib, 1994). A phenomenon referred to as code switching thus occurs. *The oxford companion to the English language* (1992) defines a code as a system of communication, spoken or written such as a language, dialect or variety. Switching on the other hand is defined as shifting, changing, turning aside, or changing the direction of (something); or to exchange (places): replace (something by something else) (Collins Concise Dictionary of the English Language 1988). Milroy and Musyken (1995) define code-switching as "the alternative use by bilinguals of two or more languages in the same conversation." In the definition given above, it is evident that in any code switching situation, there must be at least two languages used either within the same sentence or within the same conversation.

Those who view code switching as a normal and regular communicative behaviour in bilingual classrooms claim that it can be a useful tool in teaching. A study done in Lesotho by Akindele and Letsoela (2001) examined the use of code switching in secondary and high schools in Lesotho as an instructional strategy. In this qualitative study they interviewed and observed teachers of Science, Mathematics, English language and Literature, Geography and Development studies in semi-urban regions. They reported that almost all teachers (except non-Sesotho

speakers), irrespective of the subject they taught code switched. The teachers strongly agreed that code switching facilitated teaching and learning because it 'enhanced the content delivery and allowed academically strong and academically weak students to participate in the lesson.' They reported that the teachers who were non-sesotho speakers would charge the academically-strong students to explain concepts in Sesotho to the weaker students citing that this way the weaker students understood better. The teachers would use code switching in this instance to enable the understanding of concepts. This observation advances the pedagogical value of code switching and has further been observed in studies by other scholars (Clarkson 1992; Dawe 1983; Hornberger 2005; Merrit, Cleghorn, Abagi and Bunyi 1992; Setati and Alder 2001). However the study by Akindele and Letsoela (2001) targeted mainly teachers' use of code switching so as to facilitate comprehension of curriculum content creating a knowledge gap of whether their learners appreciated the use of code switching in their learning and of what benefit it was to them.

The learners' use and appreciation of code switching is addressed by a study by Reyes (2001) in Oakland, California who observed 20 pairs of 7 and 10 year old learners do a science based practical. According to Reyes' study, there are six reasons why children code switched, all of which were evident in the classroom observations made and in response to a teacher who had code switched. These were so as to ensure: *clarification* about the meaning of a words or concept, in order to put *emphasis* on what they were trying to say, when the *topic of conversation shifts*, to *accommodate* the listener, when they were *shifting questions*, or when the *situation* (context) *shifted*. While the use of code switching has been addressed by this study among

learners highlighting that learners code switch for different reasons, a gap exists of the down side of code switching in educational settings.

Despite the pedagogical validity of code switching (Clarkson 1992; Dawe 1983; Hornberger 2005; Merrit, Cleghorn, Abagi and Bunyi 1992; Reyes 2001; Setati and Alder 2001); Setati, Adler, Reed, & Bapoo, (2002) reported of there being a dilemma among teachers between "access to meaning and access to English" This is because although they can reformulate the concepts in the students' mother tongue, the teachers perceived that students need to receive and produce the content in English as it is the language that they will be assessed in. They were of the opinion that the practice of code switching in class might jeopardise students' ability to answer examination questions often presented in pure English (Setati, Adler, Reed, & Bapoo, 2002).

A study carried out by Latu (2005) in New Zealand-Manukau region- on Language factors that affect Mathematics teaching and learning of Pasifika Students gives us more insight into this matter. He targeted four teachers and 42 learners in two classes both Year 12 in the same high school. The study was done in phases 1 and 2. In phase one visits to the two classes on a weekly basis for two terms were made. Together with class teachers, he looked closely at individual students' work as they learned mathematics in the classroom. Conversations were carefully observed and recorded with a focus on noting what languages the students and their teachers used the most, who they talked to, when they used English, and when they choose to use their mother tongue. Using questionnaires constructed after these visits he tested the students knowledge of vocabulary used within a Mathematics word problem situation in phase two of the

study. The questionnaire was divided into the following four different sections: Mathematical Instructions. Mathematical Vocabulary; Mathematical Language and Word Problems Test instructions which were written in English, and either Tongan or Samoan. Students were also asked how they felt about their level of understanding of English in mathematical learning. The main result from the questionnaire was that students have difficulty solving mathematical word problems presented in English.

He concluded from the study that the complexities of mathematical sentences provided extra challenges for these students learning of mathematics. While students in this research performed well on questions involving instructional vocabulary, the opposite was true when they were given word problems that required them to read a question or statement, indicated that, analyze, and carry out appropriate computations, it was noted that most students did not have the appropriate problem solving strategies, a factor the researcher attributes to the language the students used most often during classroom instruction - their main language (Latu 2005). The observations made by Latu give us the down side of using code switching in a classroom setting. From the performance of the students we can deduce that if code switching is used in teaching and then students are tested in pure English they are likely to perform poorly as the language used could have an effect on their ability to perform. This study however targeted post-primary students creating a need to look at the primary school going learners and the use of code switching. It also fails to highlight the teacher's competencies in the prescribed language of instruction -English in New Zealand.

To highlight the teachers' views a study by Letsebe (2002) investigated the use of code switching in the classroom in selected primary schools in Gaborone – Botswana. He focused on teacher's explanations and learner's views on the use of code switching. He observed that regardless of the subject they teach, they tended to code switch English and Setswana in their daily teaching. Some teachers reasoned that they use code switching because they have difficulty in expressing themselves in English which is the prescribed language of learning and teaching. The learners felt more at ease when the teachers switched to Setswana than when they taught in English. The observations made point to a lack of proficiency in English on both the teachers and the learners that compelled the use of code switching in the classroom setting and this was similarly observed in a study by Chimbhanda and Mokgwathi (2012)

This emerging view is contrary to the previous view held by other social linguistic researchers who acknowledge that code switching does not demonstrate lack of fluency in any of the languages involved (Myers-Scotton 1993). It is from this backdrop that Letsebe (2002) raised a very important issue that if teachers use Setswana most of the time to teach in class so as to promote learning among the learners, are they really helping these learners who are required to write their tests, assignments and even Primary School -Leaving Examinations in English. Letsebe's study gives the present study a basis to further investigate the cognitive performance of learners with hearing impairment who may be predominantly instructed by teachers who may lack proficiency in the prescribed Language of instruction, that is Kenyan sign language in this case, an area that very few researchers have delved into. However, the occurrences of language code switching are not unique to classrooms of hearing learners only and there was need to find out if language code switching does happen in classrooms with hearing impaired learners.

With regard to learners with hearing impairment whose main language is sign language, Roald (2002) undertook a qualitative study to expand our understanding of science learning by deaf students. She targeted five Norwegian Deaf teachers who had formerly completed upper secondary school from a Norwegian school for the deaf and further trained as teachers. She video-recorded and interviewed them about their views based on their own experience as deaf students on learning physics. She reported that the deaf teachers (respondents) had to create signs for concepts (originally expressed in Norwegian) together with their teacher when they were learning Physics as students. In the respondents view this was a major contributor to their success in learning physics as their major subject. The now deaf science teachers confessed how the activity resulted in making their own teaching of deaf learners easier. She reiterates the importance of good mastery of sign language among teachers of deaf learners as expressed by the deaf participants in her study where one of them stated that

When the teacher knows sign language, then the interchange between teacher and student can flow without interruption...when he tells his students something in sign language, then they understand...but if one of his students does not understand, he tries to explain it another way, because he knows that the most important thing is language and communication Roald (2002).

Based on these observations, is it possible that the use of code switching could be at work in classrooms of learners with hearing impairment for teaching curriculum content, and is regarded as another way of explaining concepts for effective teaching? Roald's study had a small sample

of five deaf teachers who gave a reflection of their learning experiences making it hard to generalise the findings especially to the Kenyan situation.

In Kenya, Kimani (2012) looks into the process of teaching and learning, focusing on the role of language in learning among deaf pupils, the nature of the teaching and learning materials used and how they are used. The research took an exploratory approach and was a qualitative study that used purposive sampling done in three levels: the locality, the type of schools, and the participants thus becoming a nested case study. She focused on the teaching and learning of Social Studies in upper primary special units in urban and remote rural areas in Kenya. She visited government institutions, and organisations for/of deaf people and targeted head teachers of the selected schools, teachers, parents, government officers and NGO staff. In total 22 teachers were interviewed, 14 of whom are hearing and 8 are deaf. Of the 14 hearing teachers, 4 are heads of units and 2 are head teachers of two of the sampled schools.

Data were collected mainly through lesson observations and semi-structured interviews. Kenyan Sign Language and English were the main languages used in data collection. She observed that most hearing teachers combined signs with speech while learners solely used sign language and that while deaf teachers did not generally encounter communication problems in teaching, most hearing teachers lacked sufficient proficiency in Kenyan Sign Language (the language of instruction), a phenomenon that affected dialogue in teaching. She observed a social studies content class and reported of a teacher signing, a mixture of American Sign Language and Kenyan Sign Language signs, which were accompanied by speech and use of Signed Exact English (SEE) when quoting a text book sentence. This, in my view, depicts the likely use of

code switching in a classroom setting for learners with hearing impairment. A factor that Kimani attributes to the lack of proficiency in Kenyan sign language on the part of the hearing teachers she observed. To the hearing teachers, Kenyan sign language was a second or third language making it difficult for them to explain the meanings of Social studies concepts to deaf learners (Kimani, 2012).

It was also reported by Kimani (2012) that the assessment practices seemed not to be suitable for deaf learners to express what they knew. It is worth noting that although teaching and learning took place in sign language, assessment was through reading and writing in English. The teachers seemed to be of the opinion that the 'style of testing' used was not favourable to deaf learners denying deaf learners the opportunity to display what they had learnt in the eight years. Test items in the social studies examination paper were regarded to be indirect, using a lot of negation, poorly phrased, full of difficult words and 'too wordy' (long sentences). She also observed that when she asked learners to give an answer to a certain question from the Social studies examination paper during her interview with them, they (deaf learners) all signed every word in the question one by one. This practice she concludes could easily lead to understanding the meaning of the words independently without considering the context in which they are used leading to poor performance in social studies.

However, it seemed that Kimani (2012) based academic performance on how the deaf learners had performed over the years in social studies in national examinations and did not use any graded work such as a test or assignment presented with consideration of language preferred by

the deaf learners so as to report on their preferred or favourable style of assessing deaf learners' learning outcomes an aspect this study seeks to investigate.

Assessment plays an important role in the teaching and learning process. Assessment is the process of determining to what extent the learner has acquired the knowledge, skills, attitudes and values after some instruction has occurred. Crooks (1998) and Black and William (1998) emphasize that assessment must aim at improving students own learning and the quality of teaching. At the moment, we do not know if the good aspects of code switching and the bad aspects highlighted are in assessment as well. Both aspects might have an effect on the cognitive performance of learners based on some of the views of some scholars who propose that, processing written sentences in linguistically dense context, coupled with the logical nature of many mathematics problems, requires the reader to rely on the sentence to convey clear and unambiguous meaning (Halliday, 1978; Dale & Cuevas, 1987).

Students' ability to read in the language of instruction is vital to their performance in most academic disciplines. If a students' aim is to achieve success in mathematics, but she or he is continually hampered by reading problems, frustration and lessening of self-expectation is likely to occur. The way students read the systematic structure of sentences, relational statements, order of sentences and logical connections have all been identified as potentially hindering conceptual understanding (Dale & Cuevas, 1987; Mousley & Marks, 1991; Galligan, 1997). It cannot be claimed that deaf people necessarily indicated that, learn or behave exactly the same as their hearing peers (Kimani 2012). This is further expressed by Paul & Moore (2010) when they argue that 'there are Deaf ways of knowing that are different from other ways of knowing and this

affects learning'. Spencer & Marschark (2010) envisage that their different environments and experiences might lead to different approaches to learning, to knowledge organised in different ways, and to different levels of skill in various domains and we may speculate that to be the case too in assessment of their learning outcomes. These remain as speculative views of the authors which can be best informed by further research.

However, it would appear from studies done (Latu 2005; Letsebe 2001 and Kimani 2012) an existence of an allusion to the fact that for bilingual learners, test items presented to them in pure English are not well done given the aspect of code switching. Similarly from the studies highlighted, it is interesting to note that while teachers generally agreed that code switching enhanced content delivery, participation and understanding of concepts, code switching was perceived not to improve learners' academic performance nor did it improve their spoken or written communication. If indeed code switching aids in ensuring comprehension of subject content as advanced by various scholars (Martin 2005; Arthur & Martin, 2006; Mahadhir & Then, 2007; Flowerdew & Miller, 1992; Mustafa & Al-Khatib, 1994) could we as well use it in the assessment of the learning outcomes of learners with a hope that it would improve the academic performance of the bilingual learners?

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The only way one can know what a learner has learnt is through assessment. At the moment in Kenya, we have no clear idea on the effect code switching could have on assessment. The benefits and down sides of code switching experienced during learning might influence assessment of learning for learners with hearing impairment who undergo educational programs

facilitated mainly by code switching. In order to provide for the most favourable support for learning and assessment identification of possible differentiations is necessary.

1.2 Statement of the Problem

A lot of research exists on functions of code switching in educational settings (Clarkson & Dawe, 1994; Adler, 1998; Fasi, 1999; Setati & Adler, 2001; Ariffin & Husin 2011) all giving implications for instructional design and approaches. Some of these studies (Arthur 2001; Letsebe 2002 Latu 2005; and Kimani 2012) have only speculated on how using the learners main language in classroom instruction can affect the academic performance of learners shying away from investigating the effect language code switching could have on assessment of learning. Given this gap in knowledge we cannot ascertain if the merits and demerits of code switching as experienced in the teaching and learning process are also in the assessment process. It was therefore against this background that the study sought to establish the effect that language code switching could have in assessing learning outcomes of learners with hearing impairment.

1.3 Purpose of the Study

The purpose of this study was to establish the effect of language code switching on the performance of learners with hearing impairment in Social studies in Kakamega County.

1.4 Objectives of the Study

The study sought to;

1. To find out the perceptions of learners with hearing impairment on use of different language codes in designing the social studies tests items.
2. To establish the relationship between language code switching and the performance of learners with hearing impairment in social studies tests prepared by the Kenya National Examinations Council

1.5 Research Questions

The research questions guiding the study were;

- i) What are the perceptions of learners with hearing impairment on the use of code switching in the assessment of their learning achievements in social studies?
- ii) How do learners with hearing impairment perform on social studies tests items that are purely in English compared to those that have been modified to reflect the use of code switching in design?

1.6 Significance of the Study

The findings can be of paramount significance to both formative and summative assessment of learners with hearing impairment and also policy makers in terms of improving the educational assessment of learners with hearing impairment. The novelty of this study is its assessment of the effect of the language used in the designing of test items for measuring the knowledge, skills and attitudes acquired by learners with hearing impairment in social studies subject in Kenya. It is envisaged that the study will inform the educators and policy makers and give direction beneficial towards the designing of the education assessment tools that would enable learners with hearing impairment to demonstrate the true picture of their acquired knowledge, skills and attitudes at the end of the primary school cycle.

1.7 Delimitations of the Study

The study targeted teachers and learners with hearing impairments in schools that had candidates sitting for KCPE. Participation of teachers was delimited to the selection of test items as opposed to being respondents teaching social studies in upper primary classes for at least five years.

1.8 Limitations of the Study

The anticipated limitations of the study were:

- i. Other factors exist that would affect academic achievement of learners with hearing impairment. The study only investigated the factors that were related to the use of code switching in the classroom setting. However, the factors around test administration procedures were kept constant.

1.9 Assumptions of the Study

The study was based on the following assumptions;

- i. That the study respondents were willing and cooperative in giving relevant responses to issues involved in the study to enable the study to realize its study.
- ii. The school administration would allow the researcher to conduct the study in the institution proposed.
- iii. That the teachers are quite knowledgeable and trained on issues regarding learners with hearing impairment and the social studies subject content area to effectively contribute to the test item selection process.

CHAPTER TWO

LITERATURE REVIEW

2.0 Language code switching

Research done on language code switching goes way back to the early 70s. Initial researchers paid little seriousness to this phenomenon (Lance 1975; Kachru 1986; Myers-Scotton 1993; Milroy and Muysken 1995; Kamwangamalu 1999). Researchers did not believe that code switching did exist and simply regarded it as an interference phenomenon, the use of which demonstrated that the speaker was an imperfect bilingual who could not conduct a conversation perfectly in the language that was being used at the moment (Myers-Scotton 1993). Over time successive researchers on code switching have reported on the occurrence of code switching in social contexts (Heller 1992; 1995; Kamwangamalu 1999; 2000) and in classroom settings (Clarkson 1992; Dawe 1983; Hornberger 2005; Merrit, Cleghorn, Abagi and Bunyi 1992; Setati and Alder 2001) with valuable insights into the pedagogical value of code switching and its demerits.

2.1 Meaning and definition of language code switching

The Oxford companion to the English language (1992) defines a code as a system of communication, spoken or written such as a language, dialect or variety. Switching on the other hand is defined as shifting, changing, turning aside, or changing the direction of (something); or to exchange (places); replace (something by something else) (Collins Concise Dictionary of the English Language 1988).

Milroy and Musyken (1995) define code-switching as the alternative use by bilinguals of two or more languages in the same conversation. In the definition given above, it is evident that in any code switching situation, there must be at least two languages used either within the same sentence or within the same conversation.

Literature available on the research done into code switching shows that the phenomenon has traditionally been studied from either one of two perspectives, a grammatical perspective or a sociolinguistic perspective. A sociolinguistic approach is concerned with the role of social factors in the occurrence of code switching, with the aim being to determine patterns of occurrence of code switching and how these may be affected by social factors such as context and speakers' role relationships (Myers-Scotton and Ury 1975; Scotton 1982, 1983, 1988; Myers-Scotton 1993a, 1998). On the other hand, a grammatical approach focuses on the structural aspects of code switching, the aim being to determine the syntactic and morphological characteristics of code-switched constructions (Lance 1975; Lipski 1978; Poplack 1980; Muysken and Singh 1986; Kamwangamalu 1994, Milroy and Musyken 1995; Van Dulm 2002)

2.2 Theoretical Framework

This study was informed by the Matrix Language Principle (Kamwangamala 1994; 1999) understanding of code switching that in code switching utterances, there must be the Matrix

Language and the Embedded Language within the same conversations in which the speakers are engaged in a social setting. The matrix language principle is very much similar to the Matrix language frame model (MLF) by Myers-Scotton and Azuma (1989). The Matrix Language Principle was first developed by Kamwangamalu (1989, 1990, 1999) and is based on the premise that in code switching, there is one language that is the Matrix Language (ML) and the other language that is the Embedded Language (EL). The Matrix Language (ML) is the main language that plays the dominant role in CS and also known as the 'host language'. The Matrix Language is often the speaker's first language thus the main language. The Embedded language (also known as the 'guest language') takes on the morphological and phonological structure of the Matrix Language. More often the grammar of the embedded language is 'violated' so to say to conform to that of the matrix language. It is viewed by Kamwangamalu (The Matrix Language that licenses how the Embedded Language will be employed in Code Switching. For example Kamwangamalu (1994) demonstrated the applicability of the MLP by using examples of siSwati-English code switches and Swahili - English code switches. In all instances it was evident that in code switching the syntactic structure of the dominant language (siSwati/Swahili) is preserved while that of the guest language or the EL (English) is adapted. Looking at the example below helps one understand the ML and EL aspects better.

Examples:

siSwati - English CS;

(CS form): tennis association *i-discuss-ile le problem ku meeting yabo*.....

(English): The tennis association discussed the problem in their meeting.

(CS form): Ke intend-a go-solve-a di-problems tsa bone

(English) I intend to solve **their** problems.

As a result the morphological structure of the Embedded Language is affected, while that of Matrix Language remains unchanged. Any use of linguistic items from the EL must be determined by the morphosyntactic structure of the ML (Kamwangamalu 1999).

Therefore, the internal constituent structure of the guest language (English has to conform to the constituent structure of the host language (siSwati/Swahili)

The MLP is to date unchallenged and will inform the construction of test items used in this study. The strength that the MLP has is that it has been developed from the African context and empirically tested on CS involving several Bantu languages.

It informed the present study which aimed at looking at the effect of CS on cognitive performance having embraced the syntactic and morphological changes done on test items the development of which shall conform to the MLP.

2.2.1 Types of codes switching

From a grammatical perspective, various types of code switching can be distinguished on the basis of the length and nature of the juxtaposed units of the two languages. This is propagated in studies done with the grammatical approach (Hamers and Blanc 2000; Muysken 2000; Van Dulm 2002)

According to Muysken (2000) the first type of code switching is termed as insertion, and is characterised by the insertion of a constituent from language B into a construction in language A.

where A is the matrix language. This type of code switching is illustrated below which is taken from Nortier's (1990) Moroccan Arabic-Dutch code switching data.

Žib li-ya een glas water of zo.

(Get me a glass of water or something.) (Nortier 1990 in Muysken 2000)

This definition is likened to the Intra-sentential code switching advanced by Myers-Scotton (1993). Intra-sentential CS involves using morpheme, phrase or clause along with words, phrases and clauses from another language within the same sentence. Myers-Scotton (1993) came up with this definition following data collected in Kenya where Swahili – English CS of this nature is rampant.

Example;

Swahili: Hello, guys. **shule zitafunguliwa lini?**

English: Hello guys, when will the schools be opened?

Swahili: Na kweli, hata mimi **si-ko sure** lakini na-suspect **i-ta kuwa** week kesho

English: well, even I am not sure, but I suspect it will be next week.

In this example, **si-ko sure**, **week** and **na-suspect** are intra sentential switches as they appear in the same sentence as elements of the Matrix language which in this case is Swahili.

For the purposes of this study the definition of intra-sentential code switching used was the use of a verb or a verb phrase, or a verb phrase component, a prepositional phrase, or a noun phrase that takes place from the matrix language to the embedded language in the same sentence. The effect this type of code switching has on academic achievement will be investigated.

A second type of code switching described by Muysken (2000) is alternation, and occurs where the two languages "remain relatively separate", for example, when the switch is at the periphery of the clause (Muysken 2000). An example appears below as taken from Treffers-Daller's (1994) French-Dutch corpus.

Je dois je dois glisser *daan vinger hier*.

(I have to insert my finger here.) (Treffers-Daller 1994 in Muysken 2000)

This is similar to the Inter-sentential or 'interclausal' code switching described by MacSwan (1999) as involving switching at sentential boundaries where one clause or sentence is in one language and the next clause or sentence is in the other language, as in the example below.

I love Horlicks *maar hier 's niks*.

(I love Horlicks but there is nothing here.) (Van Dulm 2002)

Dis soos "*Thank you for giving me money*". hierso's jou geld nou.

(It's like, thank you for giving me money, now here's your money.) (Van Dulm 2002).

Similar definition for inter-sentential Code switching is embraced by many scholars (Akidele and Lestoeia 2001; Moyo 1996; Myers-Scotton 1993a)

2.3 Code switching and learning

Language plays an important role in the teaching and learning process (Vygotsky, 1978). It is the vehicle that determines to what extent the learner has acquired the knowledge, skills, attitudes and values of a prescribed instructional programme. The teacher is tasked to deliver the

subject content in the prescribed language of instruction and although this may be the case in policy; practice has given a different picture altogether (Ogechi and Ogechi 2002).

Empirical studies have demonstrated that it is quite difficult to find classroom discourse fully in a single language (Ariffin & Husin 2011). Other languages understood by the speakers and the listeners may be used, thus, switching between the languages is common (Martin 2005; Arthur & Martin, 2006; Mahadhir & Then, 2007; Flowerdew & Miller, 1992; Mustafa & Al-Khatib, 1994).

A study done in Lesotho by Akindele and Letsoela (2001) examined the use of code switching in secondary and high schools in Lesotho as an instructional strategy. In this qualitative study they interviewed and observed teachers of Science, Mathematics, English language and Literature, Geography and Development studies in semi-urban regions. They reported that almost all teachers (except non-Sesotho speakers), irrespective of the subject they taught code switched. The teachers strongly agreed that code switching facilitated teaching and learning because it enhanced the content delivery and allowed academically strong and academically weak students to participate in the lesson. They reported that the teachers who were non-sesotho speakers would charge the academically-strong students to explain concepts in Sesotho to the weaker students citing that this way the weaker students understood better. The teachers would use code switching in this instance to enable the understanding of concepts. This observation advances the pedagogical value of code switching and has further been observed in studies by other scholars (Clarkson 1992; Dawe 1983; Hornberger 2005; Merrit, Cleghorn, Abagi and Bunyi 1992; Setati and Alder 2001). The use of inter-sentential code switches between English

and sestwana were prevalent in this study. The present study will seek to find out what effect this type of code switching would have on cognitive performance.

However, the study only used interviews and observations to highlight the important role code switching in learning as an instructional strategy. Secondly, while aware of this practice in schools, governments have stipulated the learning and teaching language to be used in curriculum content delivery. The lack of adherence to the prescribed language policy by the teachers is a concern that many researchers (Arthur (2001; Luna and Peracchio 2005) have investigated on with a view of informing of the teachers and learners attitudes towards this practice. This present study aimed at building on the work done by Akindele and Letsoela (2001) and will endeavor to use test items designed using inter-sentential code switches, administered to measure the learning outcomes of learners who are mainly using language code switching as an instructional strategy. It is envisaged that this will go a long way in informing education policy makers on the merits and demerits of using code switching as an instructional strategy.

2.3.1 Teachers' attitudes and learners' attitudes towards use of code switching

Attitudes of teachers and learners play a very important role in the learning process. More so if the attitude is towards the language of instruction. Luna and Peracchio (2005) describe attitudes towards code switching as the extent to which individuals perceive code switching to be a desirable practice. We could as well add undesirable practice.

The attitudes of learners towards code switching in classroom learning is addressed in a study Malaysia on Code-switching and Code-mixing of English and Bahasa Malaysia in Content-Based Classrooms Ariffin & Husin (2011) investigated frequency and attitudes towards code switching in particular, the language use in the classroom instruction, in a public university in

Malaysia. Although English has been prescribed as the medium of instruction, in practice, it is observed that this policy has not been fully adhered to. A mixed code of English and Bahasa Malaysia, the latter being the mother tongue of most instructors and students, is used extensively in most content-based lectures in the classrooms.

The qualitative study sampled 6 instructors and 163 students. Information on students' perception on the frequency of instructors' code switching behaviour while delivering lectures and attitudes towards the language situation in the classroom were gleaned using self-completed questionnaires and interviews. Students were reminded that their response to the questionnaire should be based on the lecture that they had just attended. Instructors were also interviewed to get some insights on their language use in the classroom. Data from the questionnaire were analysed in terms of simple frequency counts and percentage. These were complemented by data from the interviews. The analysis of the data reveals mixed attitudes towards the instructors' code switching behaviour in the classroom. These attitudes were largely influenced by students' English Language competence. It seems that the less proficient students held a more favourable attitude towards the instructors' code switching compared to their more proficient counterparts. They concluded there is mixed attitudes towards code switching. While both instructors and students agreed that code switching can promote better understanding, students with better English proficiency felt that such communicative behaviour can be counterproductive as it does not help in improving their linguistic competence in English pointing to a negative attitude towards the code switching instructional strategy used by their instructors. Secondly, lack of English Language competence both on the parts of instructors and students has been claimed as the major motivating factor for the code switching occurrence.

The study however, has a limitation of targeted university students and therefore with findings that cannot be generalized to all categories of learners. The focus of the present study was on primary school learners who may be instructed by teachers with lack of proficiency in the prescribed language of instruction. For example, much in line with this view is a study by Arthur (2001) who investigated the role of code switching in the primary school classrooms. The ethnographic study was characterised by lesson observations, questionnaires interviews and direct interviews. He focused on two standard six classes at two schools located in two different places in northern Botswana. He observed English, Mathematics and Science lessons and noted that teachers tended to switch to Setswana so as to explain concepts that had already been presented in English and hardly any material presented in Setswana was of any educational value.

He concluded that the teachers were ashamed and reluctant to admit to its use. This could be due to the fact that they did not want to be seen to be deviating from the official policy of using English as the language of learning and teaching. He further observed that teachers at times had to ignore the fact that learners had difficulty with the language of learning because they were preparing them to eventually write their examinations in English (Arthur 2001). Further, some studies have revealed that attitudes towards code switching can be formed by factors that are either community-specific such as the language status and appropriateness, or individual speaker such as the degree of proficiency and personal judgment on the language use. In line with this, Kamwangamalu (2000) refers to the stigma that the use of Code Switching in education has – that it signals a lack of proficiency in the Language of Learning and teaching on the part of the teacher or learners or even both. The observations and conclusions made by Arthur (2001) are very important to the present study as they point out the likely language problem learners have

that teachers see at teaching which has a bearing on the assessment of learning achievements of learners under instructional programmes that practice code switching.

However the limitation of this study is that it sampled only teachers and learners with hearing abilities. There is a gap in knowledge of the attitudes of learners with hearing impairment who may be the recipients of the curriculum content delivered through code switching. The study by Arthur (2001) also speculates on the negative effect code switching could have on the performance of hearing learners who mainly learn using code switching as an informal learning strategy. It was worthwhile finding out if this was true or not hence this study sought to find out the effect language code switching could have on performance of learners more so those with a hearing impairment.

2.4 Code switching and Learning among the Deaf

The aspect of language and deaf education is incomplete without mentioning Bilingual education as an approach to the education of deaf children. The approach uses both the sign language of the deaf community and the written/spoken language of the hearing community. It was envisaged that use of this approach would ensure to enable deaf children to become linguistically competent, have access to a wider curriculum (Gregory, S., Bishop, J. and Sheldon, L. (1995)

According to studies done in Britain (Gregory et al 1995), a deaf child whose first language is Sign Language, writing allows them to indicated that in their first language and control the use of the second as they choose the elements to be written down. Reading, on the other hand, means having to work from their second language, where they have no direct control over the material and then translate back to their first language. Of course, many approaches to reading recognise this and ensure that a child's first reading is of material that they have prepared themselves.

However for deaf children reading raises a number of questions about which language should be used.

The situation in a deaf classroom could be in such a way that Sign- English code switches are rampant and in need of research to inform policy formulation for better deaf education. The aspect of deaf learners having to work from their second language and then translate back to their first language could be causing an overload on the working memory of the learner who is deaf. This may play negatively in examination situations. This is because they have to work within a given time to complete the tasks in the test paper.

2.4.1 Code Switching and learning among deaf learners in Kenya

The language of instruction in primary schools in Kenya is English except for schools with learners with hearing impairment. According to the Ministry of Education policy Kenyan sign language is the language of instruction (LoI) as stipulated in the National Special Needs Education Policy Framework (MoE 2009). Learners with hearing impairments, unlike other learners face particular challenges in the curriculum implementation process (Mugo, 2007). They bring into the classroom the need to differentiate instruction due to the communication barrier their disability presents so as to master the knowledge, skills and attitudes prescribed in any given educational programme (Paul 1996). To effectively deliver curriculum content to such a learner requires the teacher to be proficient in Kenyan sign language as that is the learner's main language. However this in itself poses a problem in that the teachers require not only to master the content but also to acquire sufficient proficiency in Kenyan sign language as a third language so effectively deliver the curriculum content (Mugo, 2007).

Curriculum implementation refers to the stage in curriculum development at which the planned curriculum is introduced into all schools which are ready. According to Omulando and Shiundu (1992), curriculum implementation is the making real of that which has been planned. It is the process of affecting the new curriculum. It is the systematic process of ensuring that the new curriculum reaches the immediate beneficiaries, the learners. They further state that providing the materials and the administrative means to make the curriculum implementation process possible is very key. It involves the impartation of skills and knowledge as designed by the curriculum developers to learners for whom the curriculum was designed. The Government of Kenya has mandated the Kenya Institute of Education to formulate different curricula as is dictated by the educational needs of the citizens of Kenya. Currently the 8-4-4 system of education is in place and all children of school going age are expected to cover at least 8 years of primary schooling whether they have special educational needs or not.

Suffice it to say that, curriculum support materials in Kenya are developed in the English language with the hearing students in mind. This therefore results into a situation where the teacher uses their third language (KSL) to communicate curriculum content developed in their second language (English) to learners with hearing impairment. This situation has led to the teacher's use of code switching in order to communicate curriculum content.

2.4.2 Teaching and Learning of Social Studies among Learners with Hearing Impairment in Kenya.

A scenario of what goes on in the social studies classroom for a hearing impaired learner is explicitly explained in a study by Kimani (2012) carried out in Kenya that looks into the process of teaching and learning, focusing on the role of language in learning among deaf pupils, the nature of the teaching and learning materials used and how they are used. The study took an

exploratory approach and was a qualitative study that used purposive sampling done in three levels; the locality, the type of schools, and the participants thus becoming a nested case study. She focused on the teaching and learning of Social Studies in upper primary special units in urban and remote rural areas in Kenya. She visited government institutions, and organizations for/of deaf people and targeted head teachers of the selected schools, teachers, parents, government officers and NGO staff. In total 22 teachers were interviewed, 14 of whom are hearing and 8 are deaf. Of the 14 hearing teachers, 4 are heads of units and 2 are head teachers of two of the sampled schools.

Data were collected mainly through lesson observations and semi-structured interviews. Kenyan Sign Language and English were the main languages used in data collection. She observed that most hearing teachers combined signs with speech while learners solely used sign language and that while deaf teachers did not generally encounter communication problems in teaching, most hearing teachers lacked sufficient proficiency in Kenyan Sign Language (the language of instruction), a phenomenon that affected dialogue in teaching. She observed a social studies content class and reported of a teacher signing, a mixture of American Sign Language and Kenyan Sign Language signs, which were accompanied by speech and use of Signed Exact English (SEE) when quoting a text book sentence.

This, in my view, depicts the likely use of code switching in a classroom setting for learners with hearing impairment. A factor that Kimani attributes to the lack of proficiency in Kenyan sign language on the part of the hearing teachers she observed. To the hearing teachers, Kenyan sign language was a second or third language making it difficult for them to explain the meanings of Social studies concepts to deaf learners Kimani (2012). The present study shall seek to find out

the attitudes of learners towards the proficiency of their teachers' sign language skills. Kimani's (2012) study gives us an understanding into the Test items in the social studies examination paper which were regarded to be indirect, using a lot of negation, poorly phrased, full of difficult words and too wordy (long sentences). She also observed that when she asked learners to give an answer to a certain question from the Social studies examination paper during her interview with them, they (deaf learners) all signed every word in the question one by one. This practice she concludes could easily lead to understanding the meaning of the words independently without considering the context in which they are used leading to poor performance in social studies. The limitation of this study is that it does not give any test to the pupils so as to inform us of the likely remedy to the situation described as resulting into the dismal performance of learners with hearing impairment thus, there remains a gap on how best to assess learning outcomes of learners with hearing impairment in social studies based on empirical research. The present study sought to contribute to the efforts towards addressing this gap in knowledge.

2.5 Educational Assessment of learning and language

Educational assessment embraces theoretical and empirical studies which focus on or addresses: Learner aptitude and preparation, Motivation and learning styles, Learning outcomes in achievement, and Satisfaction in different educational contexts.

It is a general assumption that the language of instruction is the language in which the learner is examined in. This however is not the case for learners with hearing impairment whose recommended language of instruction is Kenyan sign language (MoE 2009a) and who have to do the national primary leaving examination in the English language. From the reports given by the Kenya National Examinations Council (KNEC) at the end of each year on performance at the

end of primary school cycle there is an indication that learners with hearing impairment perform dismally (Mugo, 2007) more so is social studies subject. There was a claim that using purely the English language in designing test items contributes to the poor performance of learners with hearing impairment in the social studies examination as they struggle with the level of language and vocabulary used (Kimani 2012). This claim was worth investigating and the present study seeks to find out whether this is true.

The failure by national examining body to use the prescribed language of instruction-Kenyan Sign language- for this category of learners in test item design is in itself a problem but we could speculate that the poor results posted in this subject could be due to a language issue. Further, over time concerns have emerged over the performance in national school leaving examinations of learners who are instructed by teachers who code switch while delivering the curriculum content. For example, Setati, Adler, Reed, & Bapoo, (2002) reported of there being a dilemma among teachers between 'access to meaning and access to English (the language of instruction by policy)'. This is because although the teachers can reformulate the concepts in the students' mother tongue, the teachers perceived that students need to receive and produce the content in English as it is the language that they will be assessed in. They were of the opinion that the practice of code switching in class might jeopardize students' ability to answer examination questions often presented in pure English (Setati, Adler, Reed, & Bapoo, 2002).

Use of language in examination should serve the purposes of both the learner taking the examination and the assessor who wants to find out the knowledge skills and attitudes acquired by the learner at the end of the educational programme (Gicheru 2010, April). The test constructor uses language as the vehicle to communicate ideas and concepts with a hope of maintaining the line of clear communication. If the use of language in test construction is

deemed to be a barrier, the outcomes of the test may not meaningfully inform the assessor.

One would suppose that learners who mainly use code switching would do better in tests if assessment of their learning embraced the use of code switching in designing their test items so as to determining the learners' knowledge and skills. Much research has looked at code switching but little is known that could inform us of the effect language code switching could have on the academic performance of learners necessitating this study. Previous studies have generally focused on the use of code switching in bilingual classrooms to enhance learning this study focused on the use of code switching in measuring the learning outcomes of learners who predominantly learn by the use of code switching.

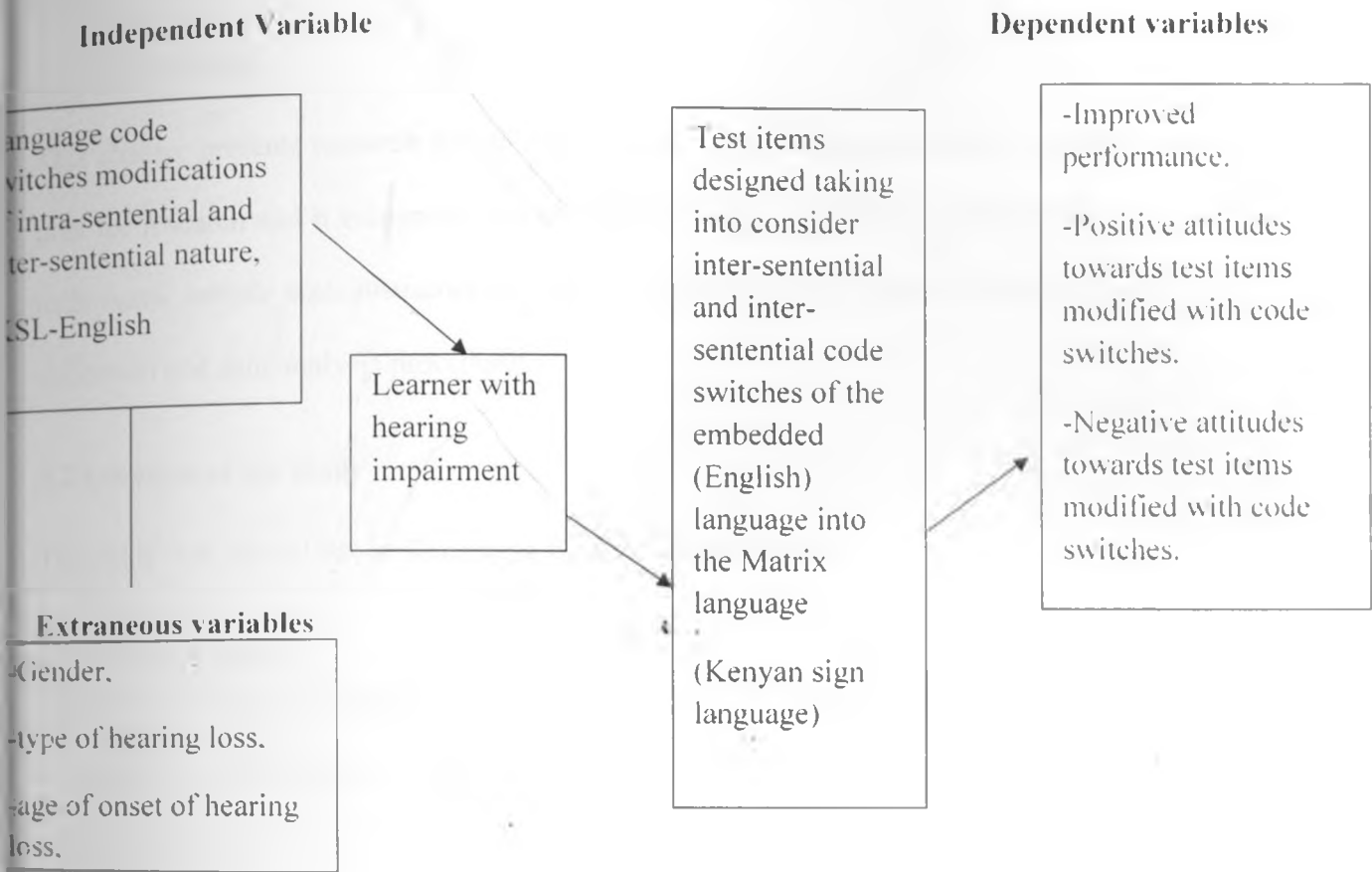
For example, while Kimani's (2012) study looked at the test items of the social studies examination and reported the views of the teachers (both deaf and hearing) and the deaf learners, it did not give an test items to the learners so as to report on their performance when the language and phrasing of the test items is considered. There was need to investigate on the effect language code switching could have on the cognitive performance of learners with hearing impairment in social studies. Based on all these, When designing of test items takes into consider inter-sentential and inter-sentential code switches of the embedded language (English) into the Matrix language (Kenyan sign language) the performance of learners with hearing impairment in social studies would improve. The learners with hearing impairment would be positive towards test items modified with code switches.

2.6 Conceptual Framework

The conceptual framework below was developed to show the interaction of variables. The language code switches in the test items are the independent variables which have an effect on

the dependent variable (the cognitive performance of learners with hearing impairment in the test items). The extraneous variables may confound the effect of the independent variable on the dependent variable magnifying the effect.

Chart 1: Effect of language code switch on cognitive performance of learners with hearing impairment.



Source: Author, 2012

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents research design methodology used. Research design is defined as a work-plan for research and it comprises research design, target population, sampling frame, sampling techniques, sample size, instruments of data collection, types of data, procedures used for data collection and data analysis procedures.

3.2 Location of the study

The study was carried out in Kakamega County Western Kenya.

3.3 Research Design

This was a comparative case study designed to determine the relationship between language code switching and the academic achievements among learners with hearing impairment in social studies subject.

The performance of learners with hearing impairment on two tests sets of 20 items each was administered using independent measures and the learning gains compared. Comparative case studies are only feasible when some units are exposed and others are not (Abadie, Diamond, and Hainmuller, 2007.) The comparative case study research design thus enabled the researcher to find out why performance is different: to reveal the general underlying structure which generates or allows for such a variation. In this study, the independent variable that was manipulated was the language in which the test items were designed. This was done in a bid to demonstrate any effects this may have on the academic performance of deaf pupils.

When using this method the underlying assumptions were that the unit targeted will not be affected by any other alternative intervention for that period of intervention. Secondly, that the intervention has no influence on the outcome prior to the commencement of the implementation intervention program. But if the anticipation of the intervention impacts the outcome before the intervention is implemented then there is need for one to redefine the commencement time for recording of the results of intervention to be the first period in which the outcome of when the participants may possibly react to the (anticipated) intervention is recorded (Abadie, Diamond, and Hainmuller, 2007).

For this to be effective there is need for a record of the baseline data by way of pretests or any other recorded behavior of the participants prior to intervention, then the collection of data of the impact of the intervention by way of immediate post-tests to quantify the impact followed by a delayed post-test to evaluate the permanence of impact (Abadie, Diamond, and Hainmuller, 2007).

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In this study the recorded performance of learners with hearing impairment on formative assessment of social studies tests acted as the baseline prior to the intervention. The other variables of the test taking such as time, number of test items and examination administration procedures were kept or remained constant.

When the data from two intervention groups is comparable at different levels of interventions, this method tends to be effective at facilitating a comparative evaluation of learning gains between the two groups (Abu-Lughod, 2007). However, there is typically some degree of ambiguity about how comparison units are chosen and this necessitated the use of random sampling of the respondents. The danger of experimenter's bias affecting the outcome by the

selection of comparison groups on the basis of subjective measures of affinity between affected and unaffected units (Abadie, Diamond, and Hainmuller, 2007) was thus avoided in this study.

The use of coded questionnaires and tests aided in the data analysis which enabled the use of aggregate data. traditional inferential techniques, was very helpful in the discussion of the findings of this study.

3.4. Target Population

Variations in etiology, onset degree and type of hearing loss as well as family and educational situations results in a widely diverse hearing impaired population. However, children with hearing disabilities characteristically experience significant issues with regard to social and intellectual development, speech, language and educational achievement. The special educational needs (SEN) calls for the learners with hearing impairment mainly able to access education in special schools for the deaf which have trained teachers who can best facilitate their learning considering the hearing loss. The average age on the learners at the time of sitting for the KCPE examinations in Kenya is 15 years. There are 44 Special primary schools for the deaf in Kenya presently. In this research the target population included learners with hearing impairments based in mixed gender special primary schools for the deaf in Kakamega County. Kakamega County was selected because it has the highest number of schools for the deaf currently (7 special schools for the deaf and Units). Since this was a small population a proposal of 30% the target population (7) would be 2 schools. Logistically it was not possible to sample all schools in the Western region therefore two (2) primary schools were sampled.

3.4.1 Schools for the Deaf.

Using random sampling 2 mixed primary special schools for the deaf were select. The choice of the schools was based on the fact that they are the only schools of the deaf in Kakamega County

with the highest number of learners with hearing impairments and that they poses unique characteristics as special schools that keep in mind the strategies of teaching learners with hearing impairments.

3.4.2 Sampling of learners with hearing impairment.

The recommended class size in special schools for the deaf is 25 pupils per class due to their special educational needs. This study targeted only the current class 8 pupils who had a high chance of having covered sufficient curriculum content of the social studies subject. This was essential so as not to have any learner disadvantaged at the tests for not having learnt the subject content. The timing of the data collection was therefore strictly done in the month of October, one month before they were due to sit for the National examinations. Using simple random sampling 50 pupils were selected from sampled schools. The researcher asked the pupils to sit in two groups. The total sample size for the pupils who participated in the study therefore was 50 pupils with hearing impairment. The school register was used to randomly select the two groups that sat for the two tests.

3.4 Sample and Sampling Procedures.

Learners with hearing impairments of varying hearing loss degrees are considered to have special educational needs that require them to be placed in special schools in Kenya. Using purposeful sampling the study only selected class 8 pupils with hearing impairment to participate in this study. However the groups that sat for the two different tests using independent measures were randomly selected.

The summary of the sampling of the study respondents is as displayed in Table below:

Table 1: Sampling of the Study Respondents

Category	Sampling technique	Target population	Sample size
Schools	Purposeful sampling	7	2
For The Deaf Pupils	Purposive sampling	165	42

Source: Author, 2012

3.5 Data Collection Instruments

3.5.1 Tests

The study used tests to measure learning gains of the learners with hearing impairment. Test items were designed taking into consider inter-sentential and inter-sentential code switches of the embedded (English) language into the Matrix language (Kenyan sign language) Thus, this study will manipulate one variable – the language in which the test items are designed - in a bid to demonstrate any causal effects this may have on the academic performance of learners with HI. The other variables of the test such as time, number of test items, examination administration procedures and the test takers were kept or remained constant.

3.5.2 Questionnaires

A largely pre-coded questionnaire was used to gather both quantitative and qualitative information from the learners with HI. This questionnaire drew on survey tools used in other

studies conducted internationally on challenges facing learners with HI. The questionnaire was adapted to reflect the cultural and environmental context in the sampled area and very simplified English statements used in framing the questions so as to enable the learners with HI to respond. The questionnaire was given to all sampled respondents that had sat for the tests. This helped the researcher to explore the perceptions, feelings, and general experiences, as well as knowledge and general challenges facing learners with HI on the preferred language in the school setting with peers and teachers especially in the learning and teaching of social studies. This was very instrumental in informing the assessment of the social studies subject.

3.6 Data Collection Procedures

Permission to carry out the research and authorization letter was received from the University and also the Ministry of Education. This helped in explaining the reason for the research to the respondent and enhance the confidentiality of the data collected from them.

3.6.1 Instrumentation and coding

The tests used for data collection were adapted from a nationally sanctioned examining body that examines learners at the end of the primary school cycle. The use of these test items was to ensure that standardized test items are used right from the onset of the study improving on the reliability of the test items. The full 60 test items of the year 2011 social studies test paper will be given to a deaf learner that has already sat for the same paper only recently and is now in form one to underline all the words he found hard to understand. Twenty (20) test items were selected with the help of the teachers teaching social studies at primary level to ensure they cover various aspects of the curriculum and with a varying range of vocabulary.

The 20 test items were compiled into a test. One set of the 20 test items had the test items as designed by the National examination body – Kenya National Examination Council with no changes whatsoever to the English language used (see appendix iii). This set was referred to as test one and was administered to one group of learners with hearing impairment. All the learners who sat for test one were coded as 1a to 1r.

The second test of the same 20 test items but modified with language code switches at words, phrases and word order levels of inter-sentential and intra-sentential in nature was administered to a separate second group of learners. This is referred to as test two or KSL version (see appendix iv) and all learners who sat for test two were coded as 2a to 2r.

The test item modification exercise was done in consultation with Two Deaf adults from the Kenya sign language Research project based at the University of Nairobi. The Deaf adults have a great experience as research assistants from the inception of the Kenya sign language research project in 2007 and have been with the institution for 19 years. One of the deaf adults has been employed by KNEC on item writing giving him a good understanding of psychometric issues. These factors contributed to considering him to be involved in the item modification exercise.

The test was administered for 30 minutes in line with the expectation at national examination administration that a student can take on average 1.5 minutes to answer a single question in the social studies paper.

For the students, the researcher liaised with the teacher on duty and the class teachers who introduced her to the learners with HI and acted as a sign language interpreter. The researcher used the class register to sample the subjects to participate in the experiment. Thereafter, the researcher liaised with the class teacher and the school administration on the best time to

administer the short test. This was done during break time to avoid interfering with the regular school program.

The codes used in the questionnaire to represent the likert scale were all the time, Some times and Not at all to represent Strongly agree, Agree and Strongly disagree respectively so as to enable respondents to understand the questionnaire.

3.7 Data Analysis

The data collected was organized using both descriptive and inferential statistics to answer the research questions. The data collected was analyzed twice. Distribution of frequencies using tables and graphs was done. Location analysis and data on demographic information was done using means and median. The performance of learners with hearing impairment will be analyzed using means, standard deviations and T-tests, since 2 groups sat for the two tests for establishing the effect language code switching would have on performance.

The questionnaires for learners with HI had Likert Scales that were analyzed using chi-Square to enable looking at the degree of confidence and significance of the language preferences and perceptions of learners with hearing impairment. This was essential in determining the degree to which they use or like the use of various languages and language code switching in various settings and to various groups.

By and large the data was analyzed using various statistical methods available on the current SPSS software.

3.8 Reliability

Mugenda and Mugenda (1999) define reliability as a measure of the degree which a research results yield consistent results after repeated trials. It must have the ability to consistently field the same results when repeated measurements are taken under the same conditions. To test reliability of the instruments, the researcher used Cronbach's Alpha (Fraenkel and Wallen, 2000).

3.9 Ethical Considerations

The ethical guidelines for research were adhered to. Permission to carry out the study at the schools was obtained from the County Education's office, and the head teachers of the schools. The learners with HI were treated with respect and they were giving information voluntarily. Any information acquired from learners with HI or their educational files was treated with confidentiality.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF RESULTS

Introduction

The purpose of this chapter was to broadly discuss and present the analysis of data collected from the various data collection modes. Analysis therefore was to make it easy for the readers to understand each study variable and consequently draw any relationship between them.

The study was done with the view of identifying the effects of language code switching on the performance of learners with hearing impairment in social studies in Kakamega county. The results contained on two tests given and in the questionnaires were interpreted for analysis in line with the fundamental assumptions underlined in each question.

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Analysis of Response Rate

Questionnaires were administered to all sampled population and they were given ample time to respond to the questionnaires independently.

Socio-Demographic Information

A total of 45 respondents were interviewed and their socio-demographic characteristics were summarized as indicated below.

Gender

Attention was sought to establish the gender of the respondents. The respondents were asked to state their gender. The results were presented in the tables and figures below.

Table 2: Gender

Gender	No	%
Male	22	59.5
Female	15	40.5
Total	37	100.0

Source: Author, 2012

From the information on the table, 22 were male: while 15 were female and 15 respondents never indicated their gender status. The information confirmed that the population dynamics is gender sensitive.

Chart 2: Gender distribution



Source: Author, 2012

4.2.2 Age

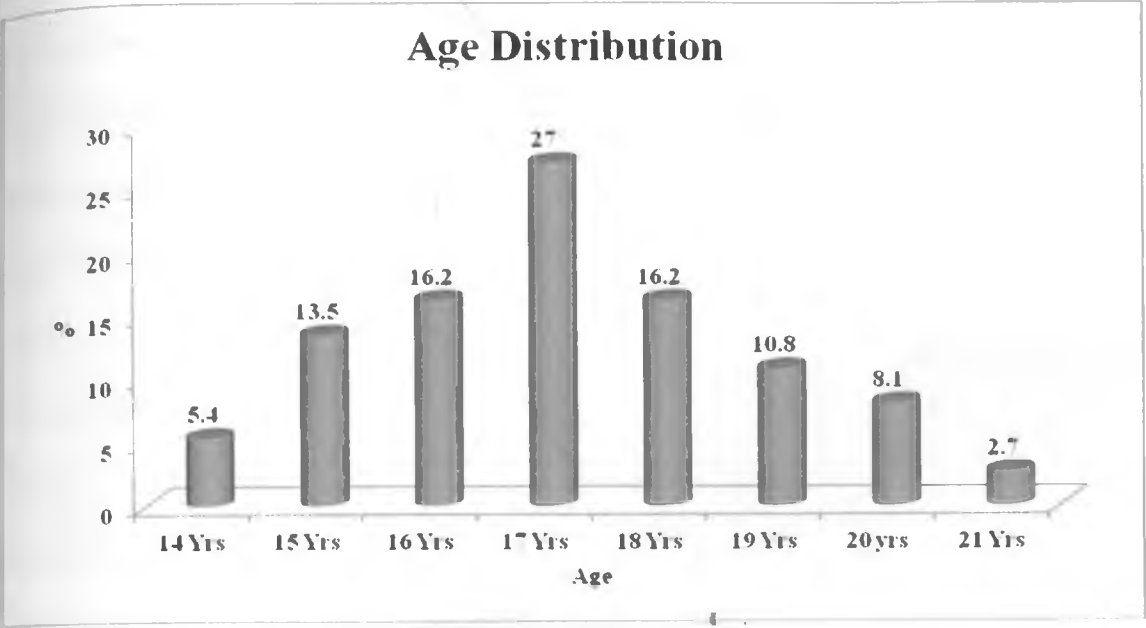
This section sought to establish the age of the respondents. The respondents were asked to indicate their age. The results were presented in the tables and figures below. The response on age was as follows:

Table 3: Age

Age	Frequency	%
14	2	5.4
15	5	13.5
16	6	16.2
17	10	27.0
18	6	16.2
19	4	10.8
20	3	8.1
21	1	2.7
Total	37	100.0

Source: Author, 2012

Graph 1: Age of HI Learners



Source: Author, 2012

From the figure above majority of the respondents were 17 years of age. The average age of the hearing pupils in class eight in Kenya is 8 years. This was indicative of most respondents being over-age for the level/class an aspect that could be due to frequent repetitions or delayed enrolment to primary school.

4.2.3 Level of Hearing Loss

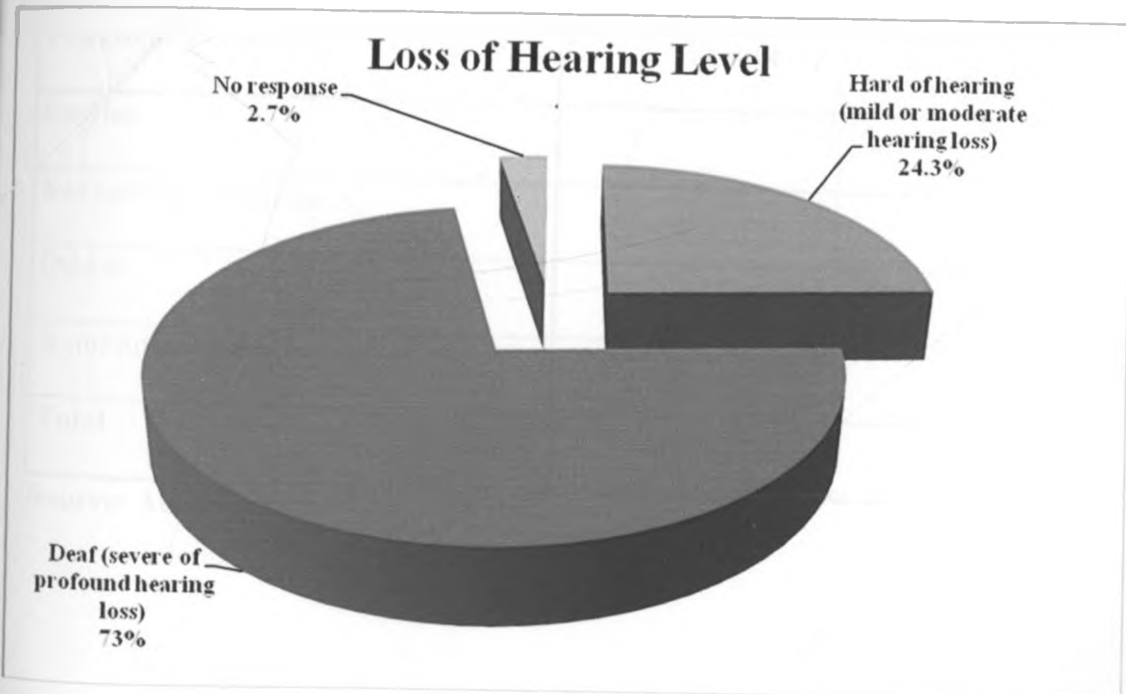
This part sought to establish the level of hearing loss of the respondents. The respondents were asked to indicate their hearing loss level. The results were presented in the tables and figures below.

Table 3: level of hearing loss

Level of hearing loss	Frequency	%
Hard of hearing (mild or moderate hearing loss)	9	24.3
Deaf (severe or profound hearing loss)	27	73.0
No response	1	2.7
Total	37	100.0

Source: Author, 2012

Chart 3: Summary analysis of Loss of Hearing Level



Source: Author, 2012

Majority of the respondent represented by 73% reported that they were of severe or profound hearing loss, compared to 24.3% who had mild hearing loss while 2.7% never responded to the question.

4.3 Research question 1: What are the perceptions of learners with hearing impairment on the use of code switching in the assessment of their learning achievements in social studies?

4.3.1 HI Learners' Language Preference for Communicating to Friends at School

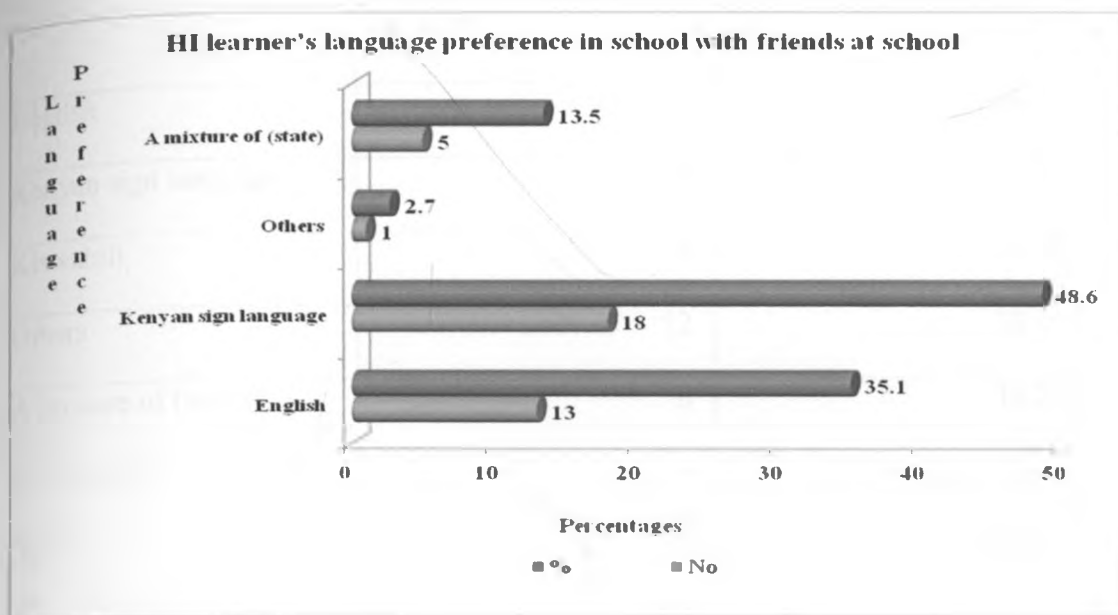
This section sought to establish whether the learners with HI were comfortable in communicating to friends at school using English, KSL or mixed code language. The respondents were asked to indicate their preferred language of communication. The results were presented in the tables and figures below.

Table 4: HI learner's language preference in school with friends at school

Language Preference	Frequency	%
English	13	35.1
Kenyan sign language	18	48.6
Others	1	2.7
A mixture of (state)	5	13.5
Total	37	100.0

Source: Author, 2012

Graph 2: HI learner's language preference in school with friends at school



Source: Author, 2012

From the table and graph above 48.6% of the respondents indicated that they can communicate comfortably with their friends at school in Kenyan sign language followed by 35.1% of the respondents who are able to effectively communicate in English, 13.5% can in mixture of English and KSL, 2.7%.

4.3.2 HI Learners' Language Preference for Communicating to Friends at Home

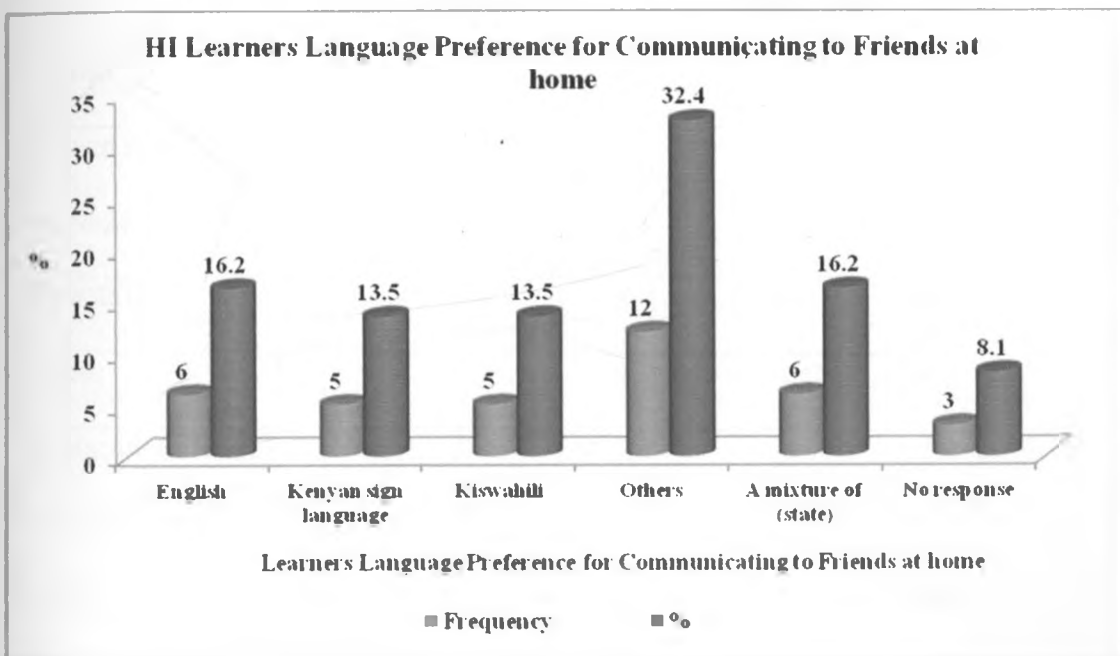
This section sought to establish the respondents were comfortable in communicating to friends at home using English, KSL or mixed language. The respondents were asked to indicate their preferred language to do the same. The results were presented in the tables and figures below.

Table 5: HI Learners Language Preference for Communicating to Friends at home

	Frequency	%
English	6	16.2
Kenyan sign language	5	13.5
Kiswahili	5	13.5
Others	12	32.4
A mixture of (state)	6	16.2
No response	3	8.1
Total	37	100.0

Source: Author, 2012

Graph 3: HI Learners Language Preference for Communicating to Friends at home



Source: Author, 2012

From the table and figure above 13.5% of the learners with hearing impairment indicated that they can communicate comfortably with their friends at home in sign language. 16.2% of the respondents who are able to effectively communicate in English. 16.2% can communicate in mixture of English and KSL, 32.4% in others and 13.5% in Kiswahili while 8.1% were undecided.

4.3.4 HI learners Ability to Communicate to Teachers at school using English, KSL or Mixed language

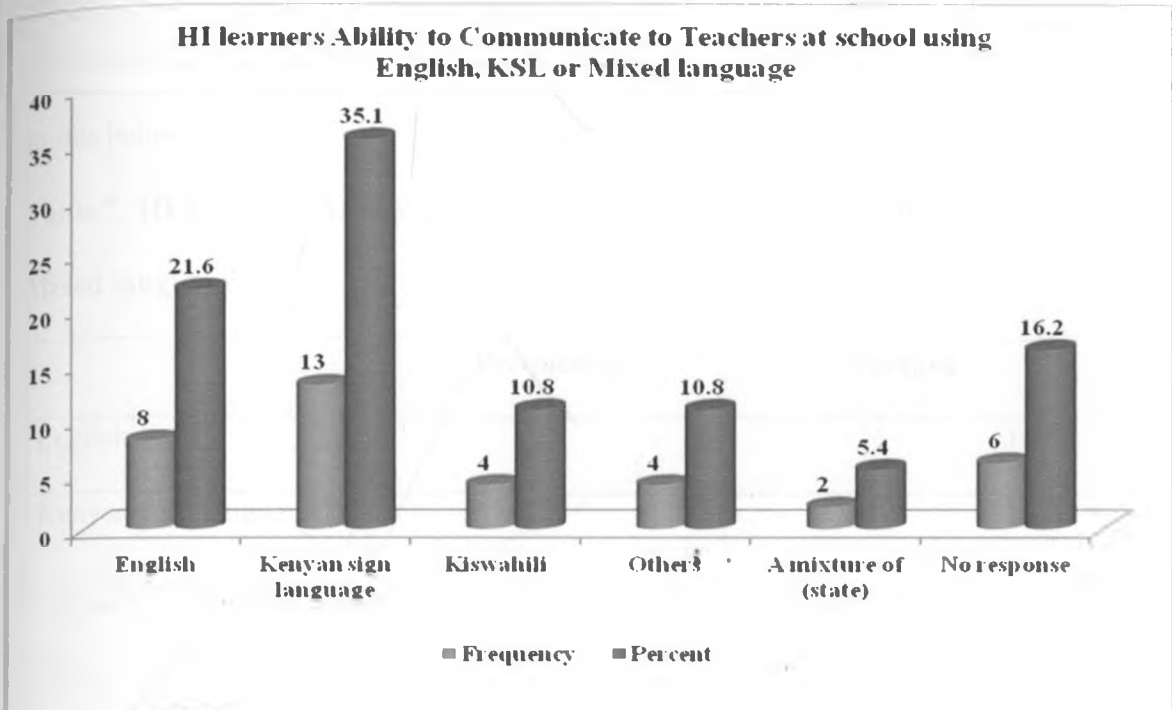
This section sought to establish the respondents were comfortable with communicating to teachers at school using English, KSL or mixed language. The respondents were asked to indicate their ability to do the same. The results were presented in the tables and figures below.

Table 6: HI learners Ability to Communicate to Teachers at school using English, KSL or Mixed language

	Frequency	Percent
English	8	21.6
Kenyan sign language	13	35.1
Kiswahili	4	10.8
Others	4	10.8
A mixture of (state)	2	5.4
No response	6	16.2
Total	37	100.0

Source: Author, 2012

Graph 4: HI learners Ability to Communicate to Teachers at school using English, KSL or Mixed language



Source: Author, 2012

From the table and figure above 35.1% of the respondents indicated that they can communicate comfortably with their teachers in Kenyan sign language, 21.6% of the respondents who are able to effectively communicate in English, 5.4% can in mixture of English and KSL, 10.8% in others and 10.8% in Kiswahili while 16.2% were undecided.

4.3.5 HI learners' Ability to Communicate to Parents at Home using English, KSL or Mixed language

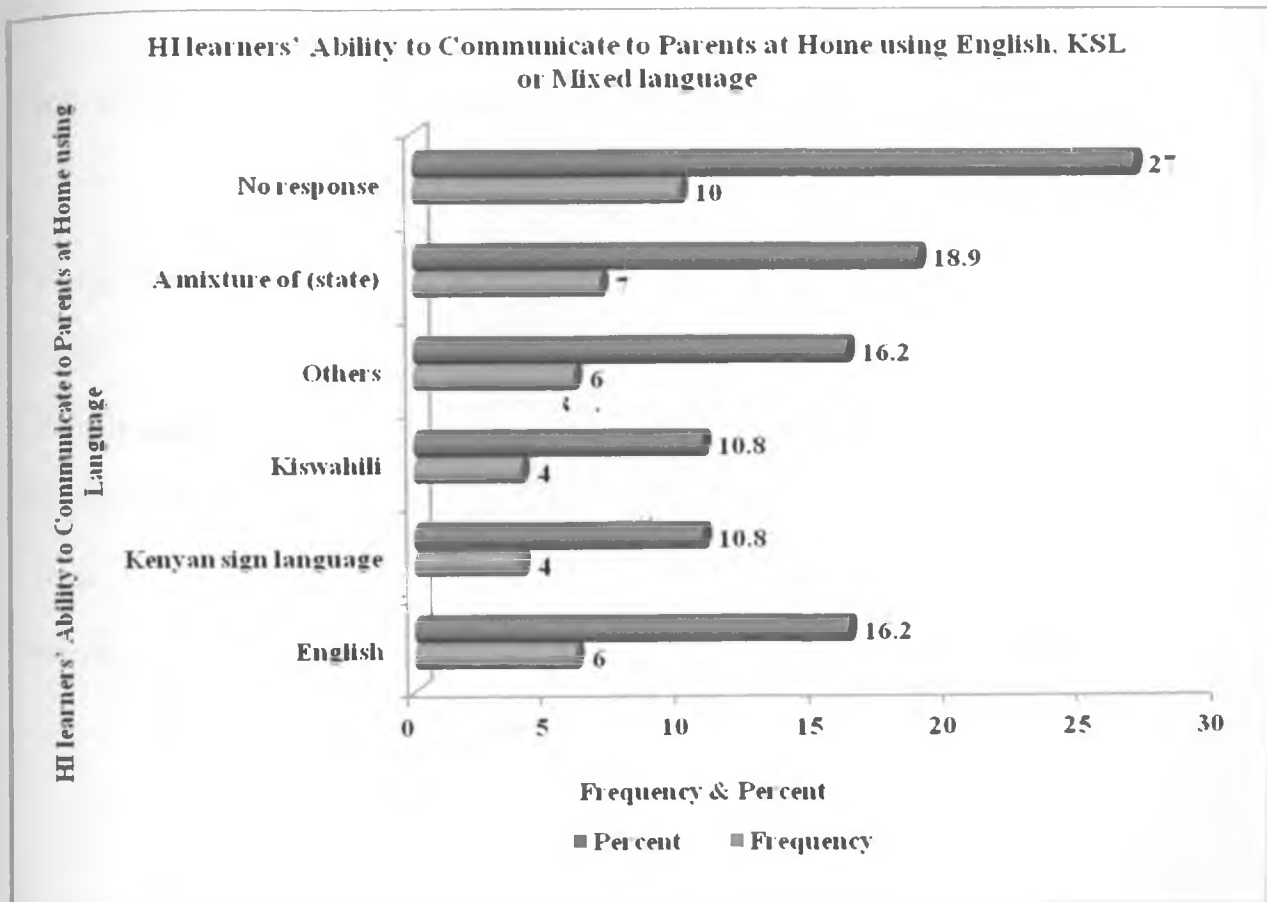
This part sought to establish the learners with HI prefer and are were comfortable communicating to parents at home at using English, KSL or mixed language. The learners with hearing impairment were asked to indicate their ability to do the same. The results were presented in the tables and figures below.

Table 7: HI learners' Ability to Communicate to Parents at Home using English, KSL or Mixed language

	Frequency	Percent
English	6	16.2
Kenyan sign language	4	10.8
Kiswahili	4	10.8
Others	6	16.2
A mixture of (state)	7	18.9
No response	10	27.0
Total	37	100.0

Source: Author, 2012

Graph 5: HI learners' Ability to Communicate to Parents at Home using English, KSL or Mixed language



Source: Author, 2012

From the table and figure above 10.8% of the learners with HI indicated that they can communicate comfortably with their friends at home in sign language, 16.2% of the respondents who are able to effectively communicate in English, 18.9% can in mixture of English and KSL, 10.8% in others and 16.2% in Kiswahili while 16.2% were undecided.

4.3.6 HI Learners' Preference for Information when Presented in Sentences written in Kenyan Sign Language Word Order

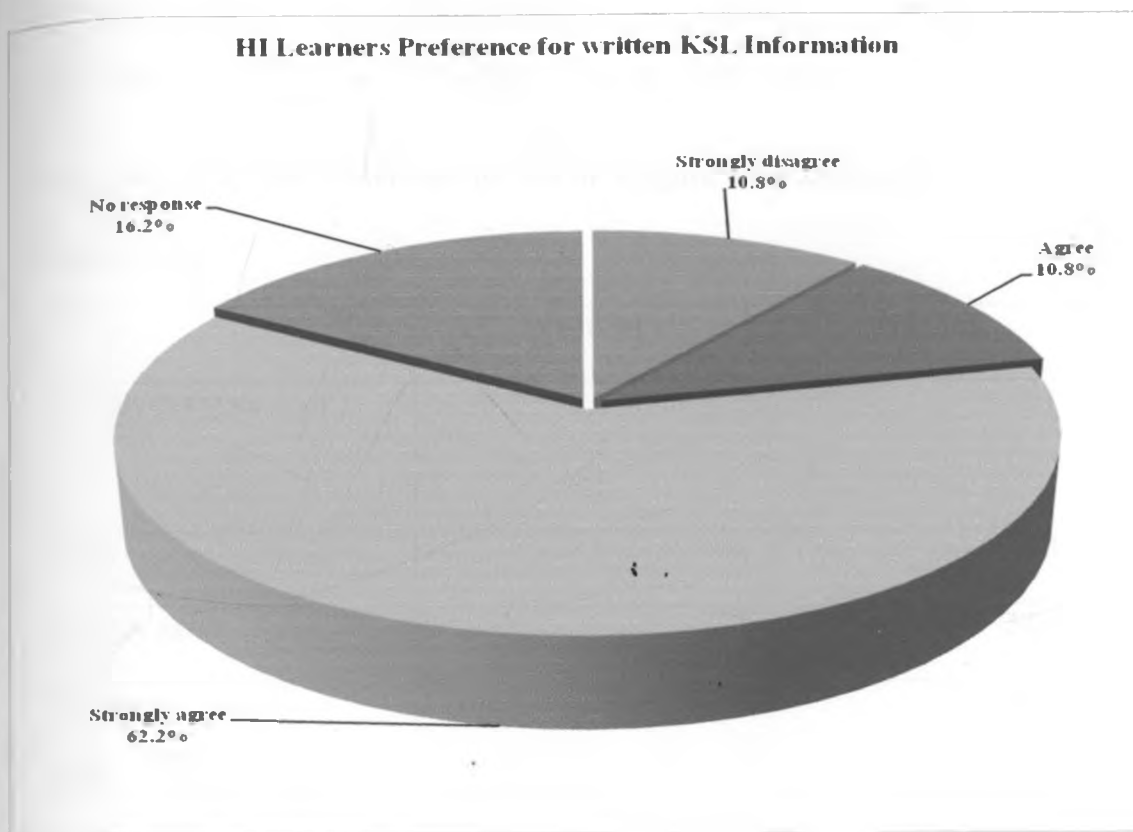
This section sought to establish the HI learners' own perceptions on their ability to understand better when sentences are written in Kenyan sign language word order. They were asked to indicate their preferred level of understanding. The results were presented in the tables and figures below.

Table 8: HI Learners Preference for written KSL Information

	Frequency	Percent
Strongly disagree	4	10.8
Agree	4	10.8
Strongly agree	23	62.2
No response	6	16.2
Total	37	100.0

Source: Author, 2012

Chart 4: HI Learners Preference for written KSL Information



Source: Author, 2012

From the responses, in the pie chart above, majority of the respondents represented by 62.2% preferred sentences written in KSL word order. Those who did not respond were 16.2% which we could interpret was because the questionnaire was in English word order.

4.3.7 HI Learners' Preference for Information when Presented in Sentences written in English Language Word Order

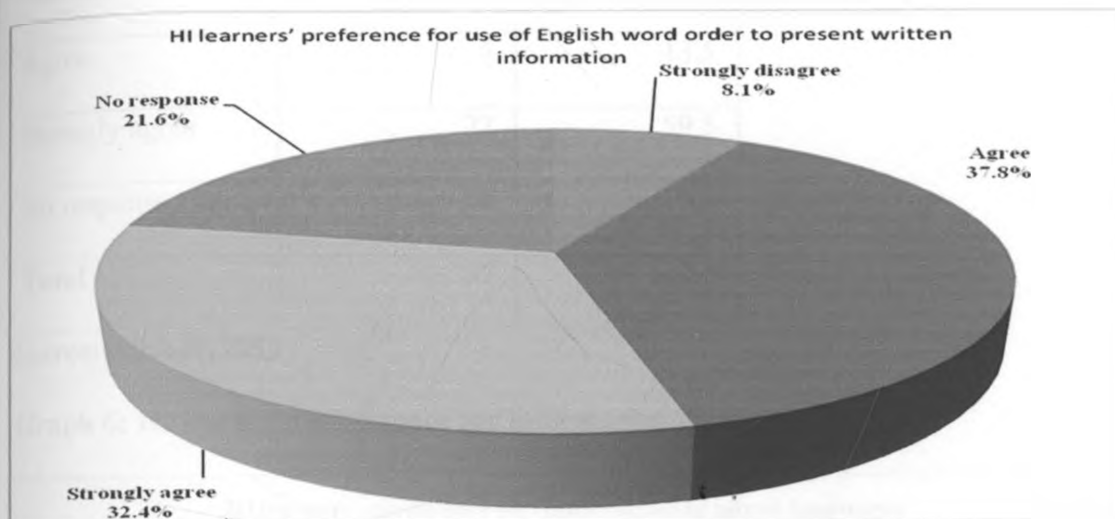
This section sought to establish the respondent's perceptions of their own ability to understand written information when presented to them in sentences written in the English language word order. The results were presented in the tables and figures below.

Table 9: HI learners preference for use of English word order to present written information

	Frequency	Percent
Strongly disagree	3	8.1
Agree	14	37.8
Strongly agree	12	32.4
No response	8	21.6
Total	37	100.0

Source: Author, 2012

Chart 5: HI learners' preference for use of English word order to present written information



Source: Author, 2012

From the table and fig above 8.1% of the respondents indicated that they strongly disagree that they understand information better when presented in sentences written in English language word order, 37.8% of the respondents indicated that they agree on the understanding level when sentences are written in English language, 32.4% strongly agree while 21.6% had no response on the question, they could neither agree or disagree.

4.3.8 HI Learners' Preference for Information when Presented in Sentences written in a mixture of English and KSL Word Order

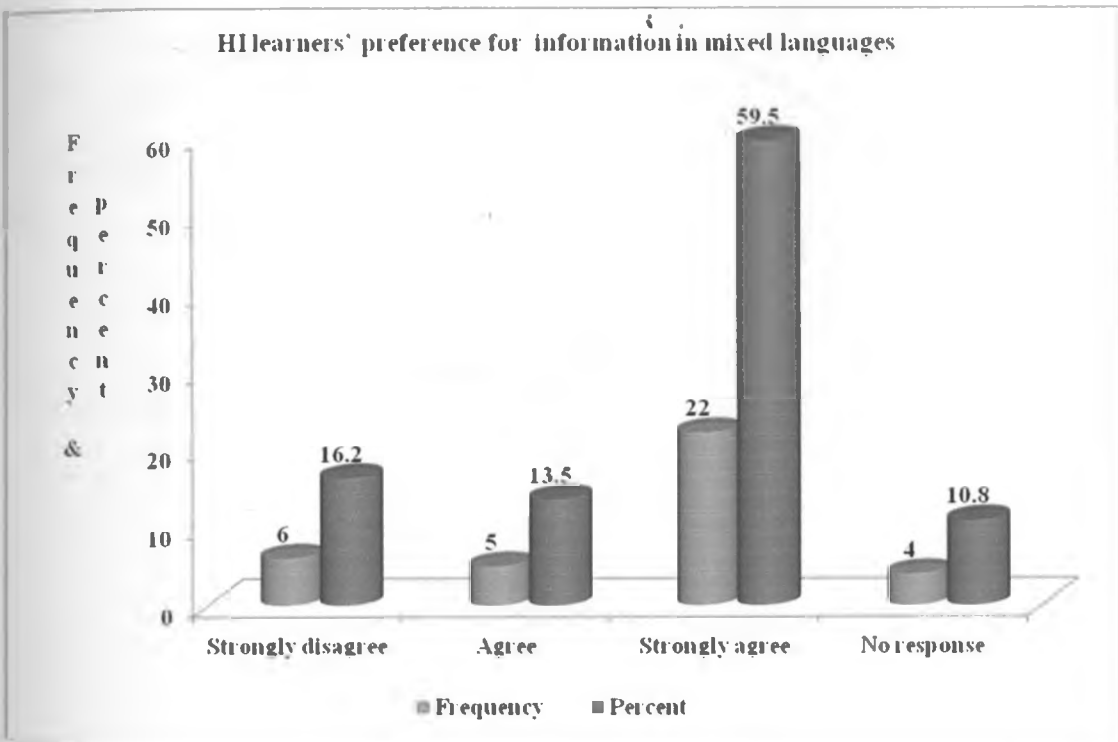
This section sought to establish the respondent's self-perceived ability to understand information when sentences are written in mixture of English and KSL word order. The respondents were asked to indicate their level of understanding. The results were presented in the tables and figures below.

Table 10: HI learners' preference for information in mixed language

	Frequency	Percent
Strongly disagree	6	16.2
Agree	5	13.5
Strongly agree	22	59.5
No response	4	10.8
Total	37	100.0

Source: Author, 2012

Graph 6: HI learners' preference for information in mixed languages



Source: Author, 2012

From the table and graph above 59.5% of the respondents indicated that they strongly disagree when sentences are written in mixture of English and KSL word order. 13.5% of the respondents

indicated that they agree on the understanding level when sentences are written in mixture of English and KSL word order, 16.2% strongly agree while 10.8% had no response on the question, they could neither agree nor disagree.

4.3.9 HI Learners' preference of KSL as a Medium of Self Expression When Writing.

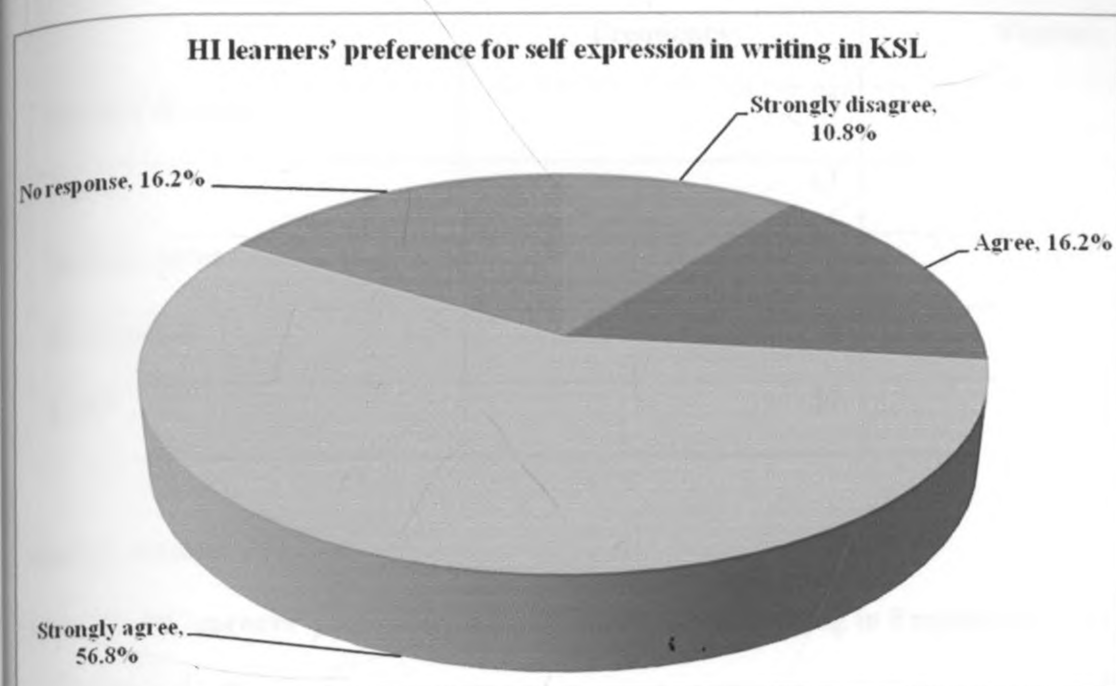
This section sought to establish the respondent's preference levels when expressing self in writing in the KSL word order. The results were presented in the tables and figures below.

Table 11: HI learners' preference for self expression in writing in KSL.

	Frequency	Percent
Strongly disagree	4	10.8
Agree	6	16.2
Strongly agree	21	56.8
No response	6	16.2
Total	37	100.0

Source: Author, 2012

Chart 6: HI learners' preference for self expression in writing in KSL



Source: Author, 2012

From the table and figure above 10.8% of the respondents indicated that they strongly disagree on the ability of expressing themselves when writing in KSL word order, 16.2% of the respondents agree on the ability of expressing themselves when writing in KSL word order, 56.8% strongly agree on this while 16.2% have no response on this.

4.3.10 HI learners' preference for self expression in writing in English language word order

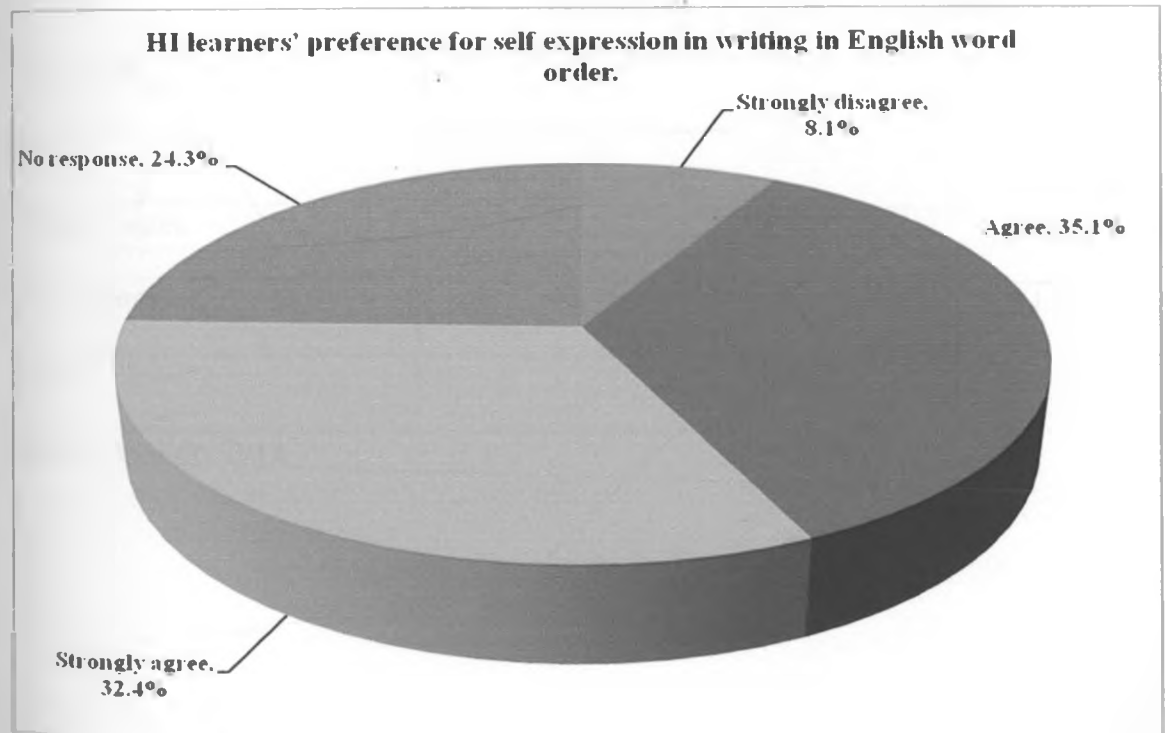
This section sought to establish the respondent's preference of the English language as a medium of expression when in writing in English language word order. The results were presented in the tables and figures below.

Table 12: HI learners' preference for self expression in writing in English word order

	Frequency	Percent
Strongly disagree	3	8.1
Agree	13	35.1
Strongly agree	12	32.4
No response	9	24.3
Total	37	100.0

Source: Author, 2012

Chart 7: HI learners' preference for self expression in writing in English word order.



Source: Author, 2012

From the table and figure above 8.1% of the respondents indicated that they strongly disagree that they express themselves better when writing in English language word order. 35.1% of the respondents agree on their ability of expressing themselves when writing in English language word order. 32.4% strongly agree on this while 24.3% have no response on this.

4.3.11 HI learners' preference for self expression in writing in a mixture of English and KSL word order

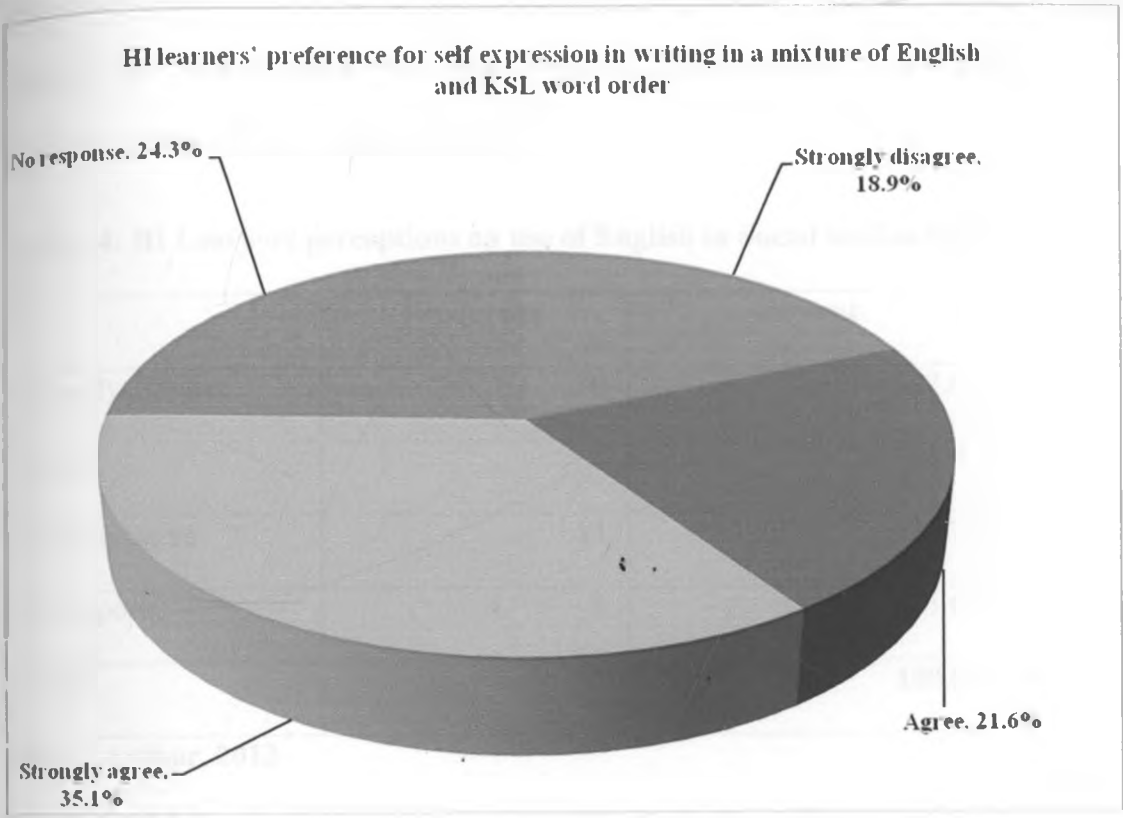
This section sought to establish whether the learners with HI preferred expressing themselves in a mixture of English and KSL word order when writing. The results were presented in the table and figure below.

Table 13: HI learners' preference for self expression in writing in a mixture of English and KSL word order

	Frequency	Percent
Strongly disagree	7	18.9
Agree	8	21.6
Strongly agree	13	35.1
No response	9	24.3
Total	37	100.0

Source: Author, 2012

Chart 8: HI learners' preference for self expression in writing in a mixture of English and KSL word order



Source: Author, 2012

From the table and figure above 18.9% of the respondents indicated that they strongly disagree on expressing themselves better when writing in a mixture of English and KSL word order, 21.6% of the respondents agree on the ability of expressing themselves when writing in a mixture of English and KSL word order 35.1% strongly agree on this while 24.3% have no response on this. This is indicative of the majority of the respondents' represented by 35.1% preference of using language code switches when writing in a bid to express themselves better.

4.3.12 The Teacher's use of English during Social Studies Lesson

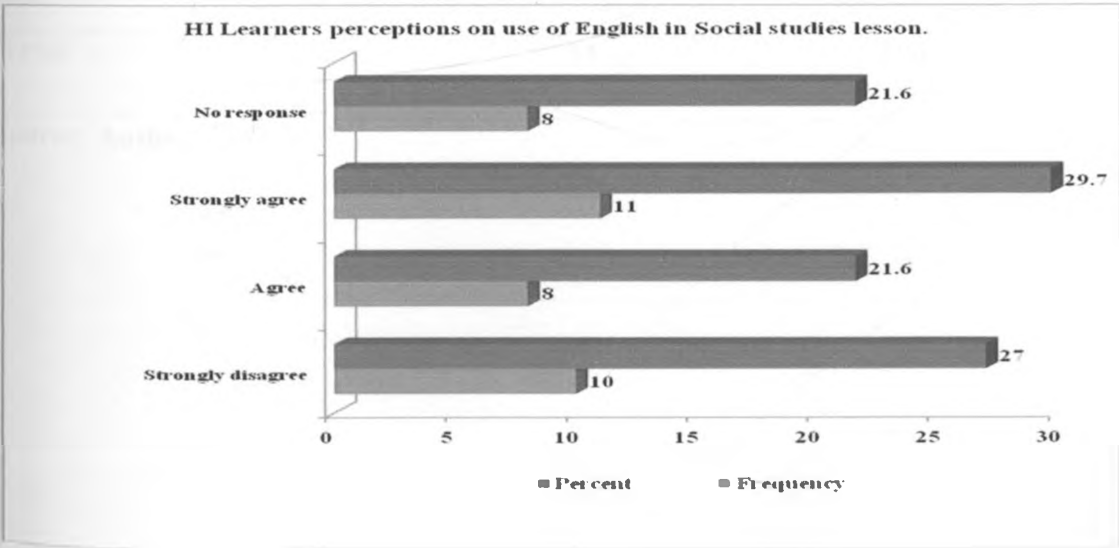
This section sought to establish whether the teacher uses English language during the social study lesson. The respondents were asked to indicate their opinion. The results were presented in the tables and figures below.

Table 14: HI Learners perceptions on use of English in Social studies lesson.

	Frequency	Percent
Strongly disagree	10	27.0
Agree	8	21.6
Strongly agree	11	29.7
No response	8	21.6
Total	37	100.0

Source: Author, 2012

Graph 7: HI Learners perceptions on use of English in Social studies lesson.



Source: Author, 2012

From the figure indicated above 29.7% of the respondents indicated that the teacher never uses English when teaching Social Studies, 21.6% indicated the teacher uses English sometimes, 27.0% strongly agree while 21.6% had no response.

4.3.13 Teacher's use KSL during Social Studies Lesson

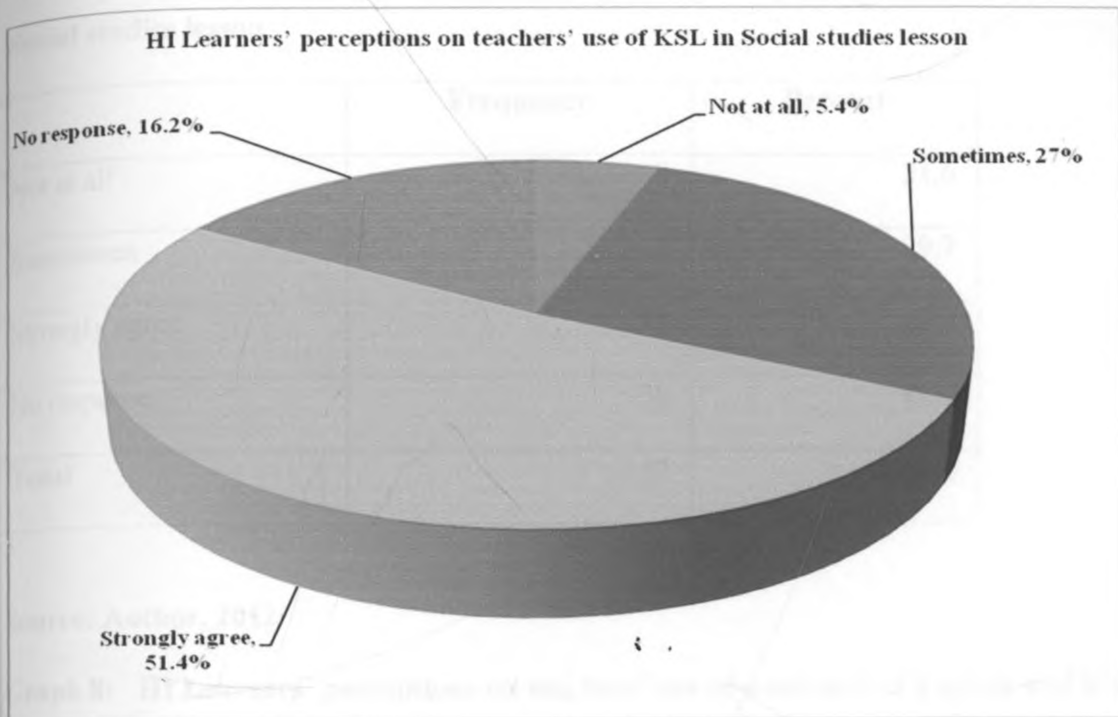
This part sought to establish whether the teacher uses Kenyan sign language during the social study lesson. The respondents were asked to indicate their opinion. The results were presented in the table and figure below.

Table 15: HI Learners perceptions on teachers' use of KSL in Social studies lesson

	Frequency	Percent
Not at all	2	5.4
Sometimes	10	27.0
Strongly agree	19	51.4
No response	6	16.2
Total	37	100.0

Source: Author, 2012

Chart 9: HI Learners' perceptions on teachers' use of KSL in Social studies lesson



Source: Author, 2012

From the table and the chart above indicated 5.4% of the respondents indicated that the teacher never uses KSL during Social Studies, 27.0% indicated that the teacher sometimes uses KSL, 51.4% strongly agree while 16.2% had no response.

4.3.14 Whether Teacher uses a mixture of English and KSL during Social Studies Lesson

This section sought to establish whether the teacher uses a mixture of English and Kenyan sign language during the social study lesson. The respondents were asked to indicate their opinion.

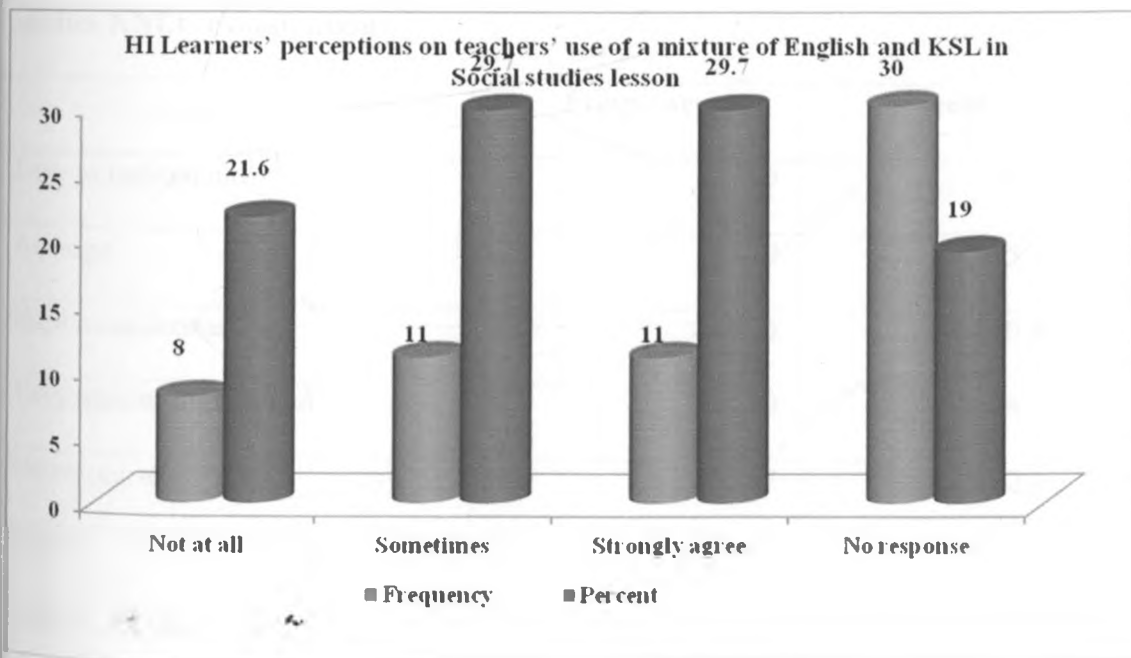
The results were presented in the tables and figures below.

Table 16: HI Learners' perceptions on teachers' use of a mixture of English and KSL in Social studies lesson

	Frequency	Percent
Not at all	8	21.6
Sometimes	11	29.7
Strongly agree	11	29.7
No response	30	81.1
Total	37	100.0

Source: Author, 2012

Graph 8: HI Learners' perceptions on teachers' use of a mixture of English and KSL in Social studies lesson



Source: Author, 2012

From the figure indicated above 21.6% of the learners with HI indicated that the teacher never uses a mixture of English and KSL during Social Studies, 29.7% indicated that the teacher sometimes uses a mixture of English and KSL, 29.7% indicated that the teacher uses it all the time. while 19.0% had no response. This is indicative of the use of code switching by the teachers during the social studies lessons.

4.3.15 HI learners' perceptions on the level of English language as used in social studies KNEC examination

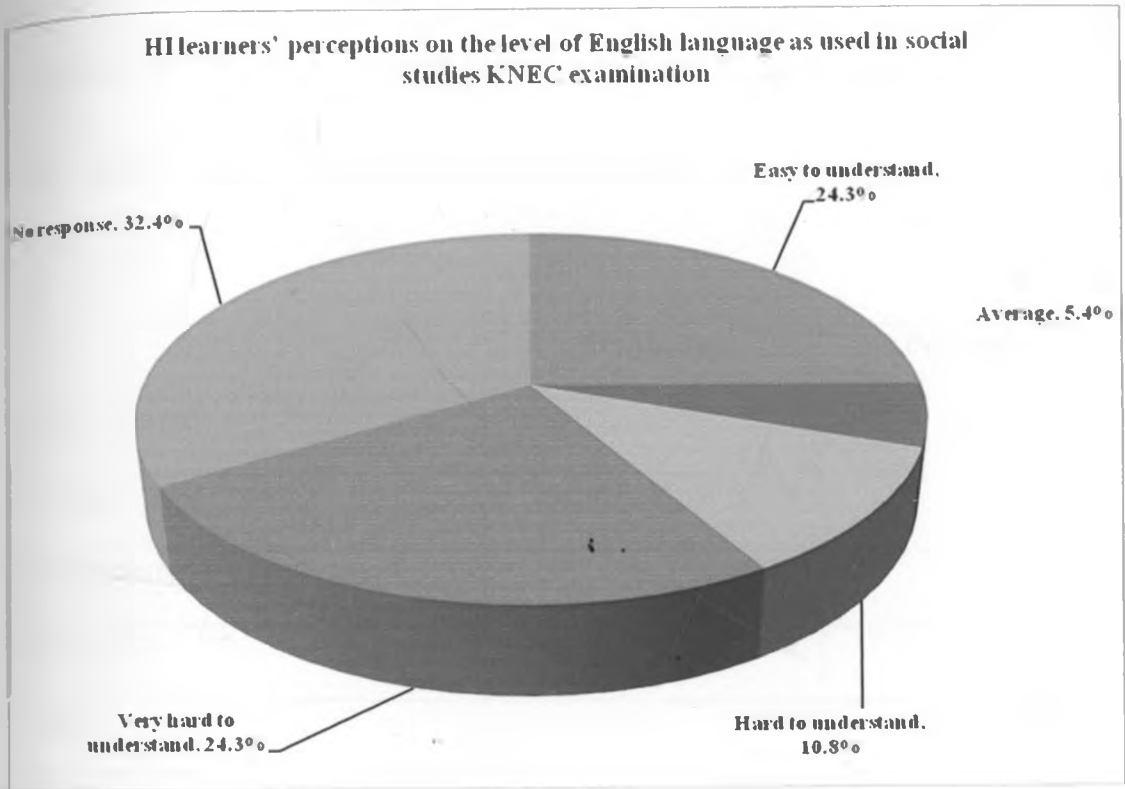
This part sought to establish the perceptions of the learners with HI on the level of the English language phrases and sentences used in social studies KNEC examination. The respondents were asked to indicate their opinion. The results were presented in the table and figure below.

Table 17: HI learners' perceptions on the level of English language as used in social studies KNEC examination

	Frequency	Percent
Easy to understand	9	24.3
Average	2	5.4
Hard to understand	4	10.8
Very hard to understand	9	24.3
No response	12	32.4
Total	37	100.0

Source: Author, 2012

Chart.10: HI learners' perceptions on the level of English language as used in social studies KNEC examination



Source: Author, 2012

From the figure and table above 4.3% of the respondents indicated that that it is easier to understand English language used in Social studies KNEC Examination, 5.4% indicated that is on an average basis, 10.8% of the respondents indicated that that it is hard to understand, 24.3% indicated that it is very hard and that there is nothing they can understand while 32.4% have no response. This can be interpreted that cumulatively, most respondents find the level of the English language used in KNEC social studies examinations hard to understand.

4.3.16 HI Learners' perceptions on KSL as a preferred language to be used by KNEC in the social studies Examination

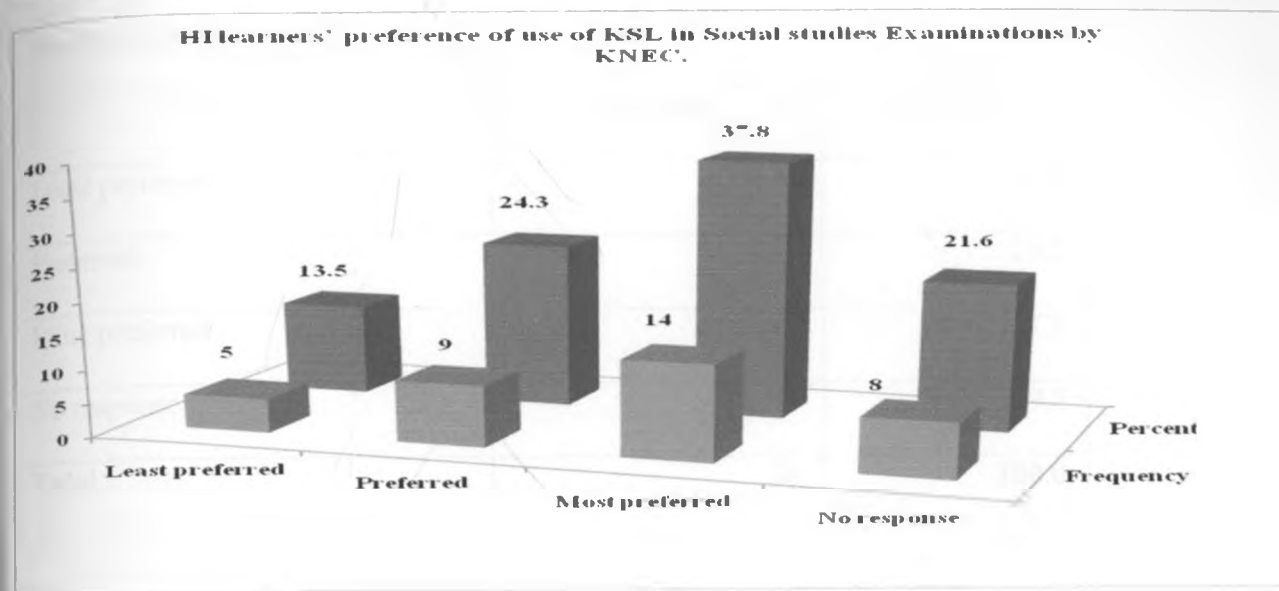
This section sought to establish whether the learners with HI preferred the use of Kenyan sign language in setting social studies Examination by KNEC. The respondents were asked to indicate their preference. The results were presented in the table and figure below.

Table 18: HI learners' preference of use of KSL in Social studies Examinations by KNEC.

	Frequency	Percent
Least preferred	5	13.5
Preferred	9	24.3
Most preferred	14	37.8
No response	8	21.6
Total	36	100.0

Source: Author, 2012

Graph 9: HI learners' preference of use of KSL in Social studies Examinations by KNEC.



Source: Author, 2012

From the above figure and table 13.5% of the respondents do not prefer sign language to be used by KNEC in the social studies examination, 24.3% of the respondents preferred, 37.8% liked the idea of using sign language by KNEC in the social studies Examination while 21.6% had no response.

4.3.17 Perceptions on the use of English language word order by KNEC in the social studies Examination

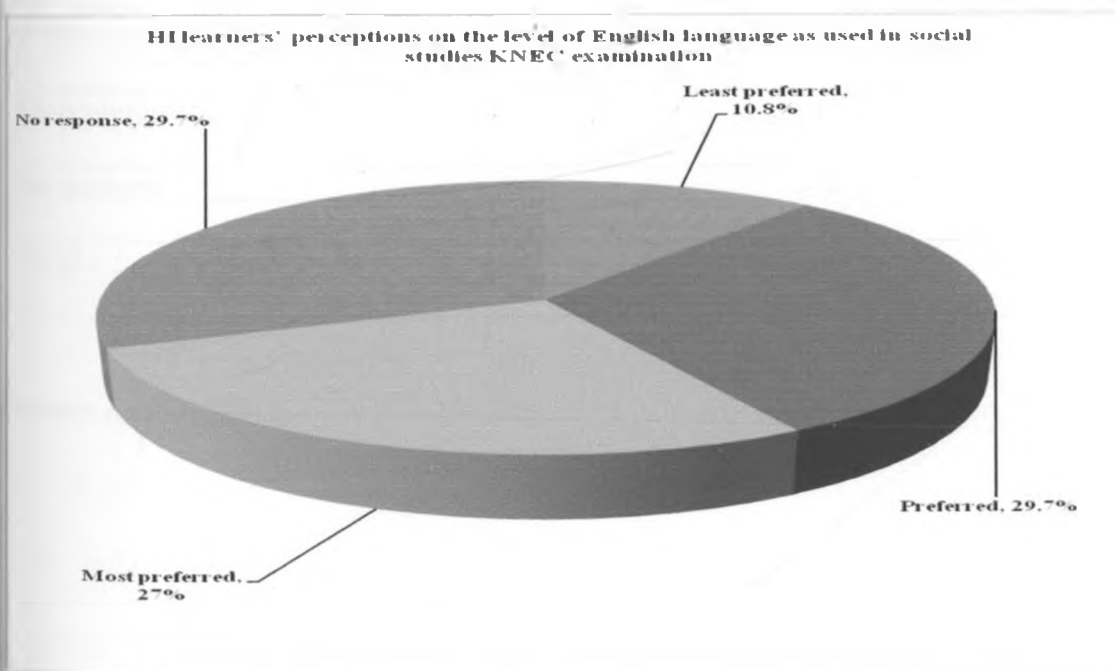
This section sought to establish if English language is a preferred language in setting social studies Examination by KNEC. The respondents were asked to indicate their preference. The results were presented in the tables and figures below.

Table 19: HI learners' preference of use of English language in Social studies Examinations by KNEC.

	Frequency	Percent
Least preferred	4	10.8
Preferred	11	29.7
Most preferred	10	27.0
No response	11	29.7
Total	36	100.0

Source: Author, 2012

Chart 11: HI learners' perceptions on the level of English language as used in social studies KNEC examination



Source: Author, 2012

From the figure and table above 10.8% of the respondents indicated that that English language word order is least preferred by KNEC to be used in social studies Examination. 29.7% preferred, 10.8% were into the idea while 29.7% had no response.

4.3.18 HI Learners perceptions on the use of a mixture of English and KSL word order by KNEC in the social studies Examination

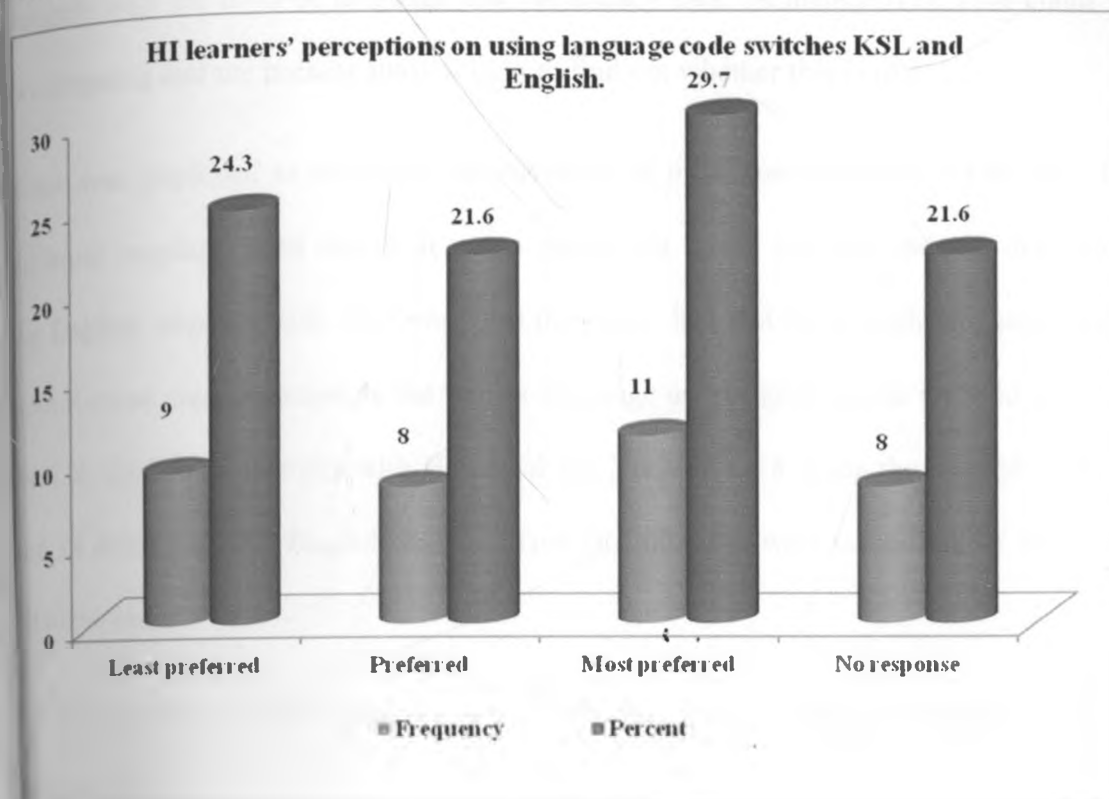
This section sought to establish if Kenyan sign language is a preferred language in setting social studies Examination by KNEC. The respondents were asked to indicate their preference. The results were presented in the tables and figures below.

Table 20: HI learners' perceptions on using language code switches KSL and English.

	Frequency	Percent
Least preferred	9	24.3
Preferred	8	21.6
Most preferred	11	29.7
No response	8	21.6
Total	36	100.0

Source: Author, 2012

Graph 10: HI learners' perceptions on using language code switches KSL and English.



Source: Author, 2012

From the graph and table above 24.3% of the respondents indicated that that a mixture of English and KSL word order is least preferred by KNEC to be used in social studies Examination, 21.6% preferred, 29.7% were into the idea while 21.6% had no response.

Research question 2: How do learners with hearing impairment perform on social studies tests items that are purely in English compared to those that have been modified to reflect the use of code switching in design?

In line with the second research objective, this part sought establish if there was any difference in pupils performance subjected to a social study test in two different languages. There was a claim

that using purely the English language in designing test items contributes to the poor performance of learners with hearing impairment in the social studies examination as they struggle with the level of language and vocabulary used (Kimani 2012). This claim was worth investigating and the present study sought to find out whether this is true.

T-test was employed to determine the deviation of pupils performance in two tests designed in differing language word orders. It was a paired test where one test had test items presented in the English language only (test one) and the other had test items with language code switches with Kenyan sign language as the Matrix language and English as the embedded language (test two). A total of 36 learners with HI sat for the 2 test with 18 doing the English version (Test 1) and 18 doing the KSL/English version (Test 2). Both tests were scored out of 20 since they had 20 items each.

4.4.1 Comparison of Performance in Social studies Tests written in English only and KSL word order

The results on the two tests are as presented in the table below:

Table 22: The comparison in means of the two tests

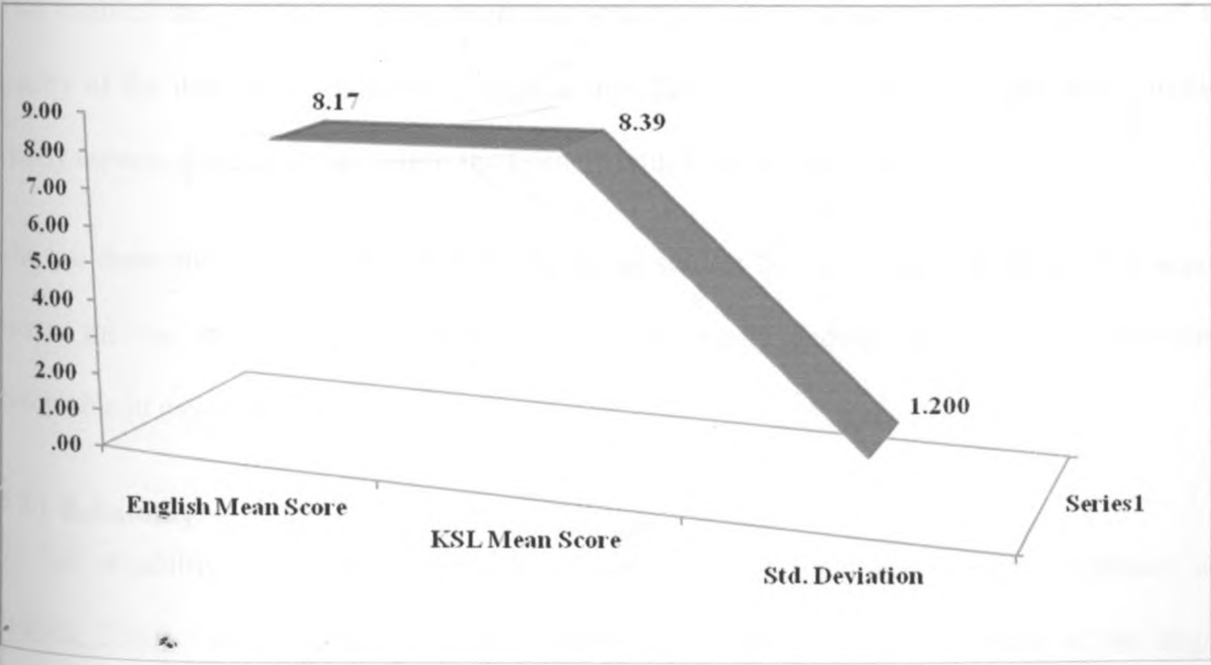
	N	Mean	Std. Deviation	Std. Error Mean
English Mean Score (Test one)	18	8.17	1.200	.283
KSL/Eng Mean Score (Test two)	18	8.39	1.290	.304

Source: Author, 2012

The mean score of the Social Studies tests administered varied as shown in the table above, pupils had a better mean score of seven (8.39) in the same examination designed in KSL compared to a mean score of six (8.17) in the test written in English. Learners with HI performed better in the test designed in sign language word order than those who did test designed in English word order. It can be interpreted that pupils the respondents can perform better if test items are presented in Kenyan sign language as the matrix language and English code switches is used and especially if that is the way the learn the curriculum content.

As can be seen from the chart below a t-test was done to compare the means of the tests and t-value was 28.86 and $p=0.000$. This was significant indicating the better performance of learners with HI on test two. The ratios of the two mean scores was 1:1.03.

Graph 11: t-test comparison of the means of the two tests



Source: Author, 2012

CHAPTER FIVE

PRESENTATION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The chapter gives summary of conclusions and recommendations of the study. The study established various findings that were discussed in the previous chapter which have evolved pertinent conclusions and recommendations that are articulated in this chapter.

5.1 Aim of the study

The study investigated the effect of language code switching on the performance of learners with hearing impairment in Social studies in Kakamega County.

5.2 Internal validity.

The questionnaire used to collect the data was constructed with simplified English sentences and phrases to enable learners with hearing impairment at class eight level to fill it by themselves. This enabled the researcher to communicate clearly to the respondents. To improve on the quality of the data, it is advisable to have a sign language proficient researcher who can help clarify aspects that can be unclear to the learners with hearing impairment.

The test items that were used were from the social studies 2011 examination paper. This was to ensure the use of standard test items that have rigorously undergone test design procedures acceptable in psychometric.

5.2.1 Reliability

To test reliability of the instruments, the researcher used Cronbach's Alpha (Fraenkel and Wallen, 2000). Mugenda and Mugenda (1999) define reliability as a measure of the degree

which a research results yield consistent results after repeated trials. It must have the ability to consistently field the same results when repeated measurements are taken under the same conditions.

Doing the reliability analysis allows you to study the properties of measurement scales and the items that compose the scales. The Reliability Analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the scale. Intra-class correlation coefficients can be used to compute inter-rater reliability estimates.

For this study, the reliability of the questionnaire was conducted using Cronbach's Alpha. This model is a model of checking internal consistency, based on the average inter-item correlation.

The finding was the reliability analysis identified key underlying factors. A combined set of items was found to be reliable ($\alpha = 0.82$), with weighted kappa for items. The questions were brief, easy to administer that had evidence of reliability and validity. The questions used on learners with hearing impairment in social studies could serve as a means of identifying learners with hearing impairment in need of intervention, directed towards effect of language code switching on academic achievements.

5.3 Findings

The following were the major findings:

5.3.1 Demographics

From the analysis of the demographics it was evident that most of the learners interviewed were over -age or had delayed in starting school. Judging from the social demographic data, most learners with hearing impairment were between 17 to 21 years. At such age of 17, learners are

supposed to be completing secondary and be at higher institutions of learning at the age of 20.

Language could be the reason for their delayed progress in academic work.

The demographics on gender of the learners with HI was generally in favour of boys than girls.

Gender sensitivity improves the information that has been obtained from deaf pupils as it has not brought out sharp gender disparities that would lead to bias of the study findings out of a highly gender imbalanced population. Mixed-gender respondents that were sampled are crucial in decision making for both gender.

5.3.2 Research Question 1:

The data collected aimed at finding out the perceptions of learners with hearing impairment on the use of language code switching in the assessment of their learning achievements in social studies. Prior research had indicated that learners had reported having negative attitude towards code switching Arthur (2001) for fear of the negative effect it could have on the performance of hearing learners who mainly learn using code switching as an informal learning strategy.

The study established that learners with hearing impairment were able to comfortably communicate to their peers, teachers and parents effectively using language code switches depending on the setting they are in. The high preference of KSL and English code switches was reported as indicated in Graph 10. Graph 10 illustrates the preference of the learners with HI to have their social studies test items in a mixture of KSL and English word orders in writing. This to them was vital so as to effectively communicate the item tasks.

Prior research had indicated the existence of negative attitudes of learners towards code switching in classroom learning. For instance, this aspect was addressed in a study Malaysia on Code-switching and Code-mixing of English and Bahasa Malaysia in Content-Based Classrooms

Ariffin & Husin (2011). Contrary to these views, the study findings indicated a positive attitude among hearing impaired learners towards the use of language code -switching in a classroom setting.

5.3.3 Research question 2:

The second research question aimed at finding out how learners with hearing impairment perform on social studies tests items that are purely in English compared to those that have been modified to reflect the use of KSL and English code switches in design.

It was established that given test items that are modified with language code switched, where KSL is the matrix language and English the embedded language, learners with hearing impairment perform better (mean 8.39 and standard deviation of 1.29) than when given a test with test items designed only in the English language (mean 8.17 and standard deviation of 1.20). Table 22 and Chart 11 illustrate these results.

It can be interpreted that the current national social studies examinations given in English only to learners with HI do not effectively help in reporting on the learning achievements of learners with hearing impairment. It is evident that these learners can perform better if test items are presented in Kenyan sign language as the matrix language and English code switches are used (see appendix iv).

5.4 Findings in line with theoretical framework

On the onset we could not ascertain if the merits use of tests and demerits of code switching as experienced in the teaching and learning process are also in the assessment process. The findings of this study do highlight the merits of code switching in assessment. This was established by the administering 20 test items modified with language code switches at words, phrases and word order levels of inter-sentential and intra-sentential in nature was to group of learners with

hearing impairment. This was done in line with the Matrix language principle Kamwangamalu (1994) The Matrix Language (ML) is the main language that plays the dominant role in CS and also known as the 'host language' The Matrix Language is often the speaker's first language thus the main language in this case KSL. The Embedded language (also known as the 'guest language') takes on the morphological and phonological structure of the Matrix Language. More often the grammar of the embedded language is 'violated' so to say to conform to that of the matrix language. It is viewed by Kamwangamalu (The Matrix Language that licenses how the Embedded Language will be employed in Code Switching. This highly informed the designing of the test items as seen in Appendix (iv). Example from siSwati by Kamwangamalu (1994) were helpful.

Thus, this research explored the value of code switching for effective assessment of learning outcomes. To this category of learners the use of CS was effective for understanding the concept and tasks in test items used in assessment as it enhances the students' performance in the social studies examinations and the learners with HI do have positive attitudes towards the use of language code switching .

5 Suggestions for Further Research

This study has opened up the following important avenues for future research and discussions.

- a. The scope of this study was on one county in Kenya. Hence, there is a need to extend the area of scope within the county and to cover all the 47 counties in Kenyan.
- b. A larger data sample to generate generalisable results should be explored. The researcher believes that such data can be stored on the internet so as to enable their reuse.

- c. Research is further needed in schools on the effect of code switching and also involving other Kenyan indigenous languages. This will allow for comparison of results and assist researchers' access to more code switching reports.
- d. This study could extend to all institutions in all counties and involve all the learning institutions in the country rather than only in specific education settings.

5.6 Recommendations

The findings of the study enabled the drawing of the following recommendations:

The National examining body should consider modifying test items with language code switches so as to best measure the learning outcomes of this category of learners in social studies. It is imperative for the examination bodies like KNEC design special or adapted exams for learners with hearing impairment so that they are not disadvantaged by sitting same examinations given to hearing learners who have no language challenges.

There is need for the classroom learning contexts such as how learners learn to guide the measurement as evaluation of learning outcomes.

It is necessary for the curriculum developers to involve all key stakeholders designing curriculum for learners with hearing impairment so as to address any likely adaptations required.

There is need to empower the teachers to enforce policy and use the official language of instruction for this category of learners (KSL) to ensure active learning and teaching.

Language preference is a meaningful factor in the educational development and transformation in Kenya. School Governing Bodies should implement the Language in Education Policy (1997), which supports language preference to the benefit of every student. Hence, code switching

should be recognized as a resource that facilitates effective communication and learning social studies examinations in schools.

School teachers should be encouraged to make adequate use of a model of education like code switching in classrooms in explaining concepts to students so that the students will be able to actively apply them socially and in social studies examinations. Enhanced student participation in classroom activities will closely relate to the new national curriculum framework for Kenya, which seeks to move teachers and students away from a teacher-centred, transmission style of teaching and rote learning to an emphasis on student-centred learning approaches and interactive teaching and learning styles.

Students should be allowed to code switch in classrooms between the KSL and English and their home language as they interact with one another, especially when one student code switched to explain certain terms to his/her colleagues or in social studies examinations. Students may also code switch to assist in conveying the teacher's instructions, or to summarise the lesson in a structured manner to fellow students. This will help the students to develop their communicative and linguistics abilities.

Code switching should be included in the planning of school syllabi, textbooks and other teaching/learning materials in multilingual settings of Kenyan schools, which cater for bilingual and multilingual students so that they can perform better in their social studies examinations.

5.7 Significations

The findings of this study are crucial for the future development of test items for social studies for learners with hearing impairment by the national examining bodies and the education planners. The assessment of learners with HI can also be improved at formative assessment through the findings of this study.

5.8 Conclusion

In conclusion, it is important to note that anyone taking part in formal education is a candidate for assessment. The majority who are hearing should not dictate what language the assessment of learning outcomes should be done. The ideal situation would be the language of instruction is used as the language of assessment of the learning outcomes or gains. This will give equal level playing field to all candidates as often assessment results are used for certification and the possession of a certificate serves as a social indicator of the abilities and potential of the holder. Further, over time concerns that have emerged over the performance in national school leaving examinations of learners who are instructed by teachers who code switch while delivering the curriculum content

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APPENDICES

Appendix I

Letter to the School Principals

The Principal,

Dear Sir/Madam,

RE: Permission Request To Collect Data

I am a student of the University of Nairobi pursuing a Masters in Education- Measurement and Evaluation degree. In partial fulfillment of the course I am undertaking a research on **“The Effect of Language Code Switching on academic achievement of Learners With Hearing Impairment in Social Studies in Kakamega County.** The study is being carried out in sampled primary schools for the deaf

Consequently, I wish to ask for assistance from some of your members of the teaching staff and learners in class 8 who will sit for 2 tests of 20 questions each for 30 minutes. Further the learners will answer some questions in a questionnaire.

In case there are any questions regarding the research in general, kindly contact me on Cell phone: 0733b70392 or email: ephangota@yahoo.com

Yours Sincerely,

Epha Ngota

University of Nairobi

Appendix II

LEARNER'S QUESTIONNAIRE

Questionnaire No.

This questionnaire is for collecting information for research only and will not be used for any other purpose. Kindly answer all questions by putting a tick in the box next

PART ONE: Learners Demographic Details

1. School code _____ Pupil's index Number _____

2. Gender

1.M	1. F
-----	------

3. Age _____ 4. Class _____

5. How would you classify your Level of hearing loss?

a). Hard of hearing (mild or Moderate hearing loss)	
b). Deaf (Severe or profound hearing loss)	

6. I feel comfortable using the following language when talking to the following people:

(tick for each category as appropriate)

	1.English	2.Kenyan sign language	3.Kiswahili	4.Other (state)	5.A mixture of (State the languages)
--	-----------	------------------------	-------------	-----------------	--------------------------------------

a). Friends in School					
b). Friends at Home					
c). Teachers					
d). Parents					

7. Tick for each option below what you feel

	Strongly disagree (NO. NO.)	Agree (YES)	Strongly agree (YES .YES)
a) I understand better when sentences are written in Kenyan sign language word order			
b) I understand better when sentences are written in English language word order			
c) I understand better when sentences are written in a mixture of English and KSL word order			

8. Tick as appropriate for each option.

	Strongly disagree (NO. NO.)	Agree (YES)	Strongly agree (YES .YES)
a). I express myself better when I write in.... Kenyan sign language word order			
b). I express myself better when I write in.... English language word order			
c). I express myself better when I write in.... a mixture of English and KSL word order			

9. Tick as appropriate

	Not at all	Some times	all the time
a) . During the social studies lesson the teacher uses English			
b) During the social studies lesson the teacher uses			

Kenyan sign language			
c) During the social studies lesson the teacher uses a mixture of English and KSL			

10. The English language used in social studies examinations from KNEC is.....: (*Tick below your answer*)

a). Easy to understand	b). average	c). hard to understand	d). Very hard to understand
------------------------	-------------	------------------------	-----------------------------

11. (*Tick as appropriate*)

	Least preferred	preferred	Most preferred
a) The language I would like KNEC to use in the social studies Examination is Kenyan sign language			
b). The language I would like KNEC to use in the social studies Examination is English language			
c). The language I would like KNEC to use in the social studies Examination is A mixture of English and KSL word order			

Appendix III

**SOCIAL STUDIES STANDARD EIGHT
REVISION TEST ONE**

Time: 30 minutes

Name of candidate _____ School _____ Index No: _____

Instructions to candidates:

Write your name, name of your school and index number in the spaces provided above.

This test has 20 questions.

Answer all questions in this test.

Show your answers on this paper by putting a Circle on it.

QUESTIONS

1. Which one of the following was a way of educating the youth in traditional African societies?
 - a) Using a fixed timetable.
 - b) Attaching the learners to an expert.
 - c) Teaching boys and girls similar skills.
 - d) Asking learners to write down points.

2. The migration of people into a country is called?

A. immigration

B. emmigration

C. rural-urban migration

D. urban-rural migration

3. Which one of the following is true about the interaction of Kenyan communities during the pre-colonial period?

A. having a common standing army

B. organizing common initiation ceremonies

C. carrying out trading activities

D. worshipping the same gods

4. Who among the following explorers carried out activities along the river Zambezi?

A. Dr. David Livingstone

B. Dr. Ludgwig Kraft.

C. Johann Rebmann.

D. Vasco da Gama.

5. Which one of the following was the reason the Portuguese came to the East African coast?

A. They wanted to build Fort Jesus.

- B. They were looking for the source of river Nile.
- C. They wanted to trade with people in the region.
- D. They wanted to establish maize plantations in the region

6. The revolution of the earth causes

A. changes in the direction of wind

B. day and night

C. formation of clouds

D. the four seasons

7. Which of the following Kenyan communities belong to the same language group?

A. Nandi, Borana and Kipsigis

B. Rendile, Galla and Nandi

C. Kipsigis, Rendile and Orma

D. Galla, Orma and Borana

8. One of the causes of soil erosion is

A. terracing

B. contour ploughing

C. crop rotation

D. monocropping

9. The reason why children should help parents in carrying out family responsibilities is to

A. enable them earn some money

B. improve their performance in school

C. enable them grow faster

D. promote harmony in the family

10. Which of the following was the reason why European nations scrambled for colonies in Africa ?

A. to acquire raw material for their industries in Europe .

B. to promote the African culture

C. to create job opportunities for the Africans

D. to promote peace in the continent

11. Three of the following are characteristics of the Mediterranean type of climate. which one is NOT?

A. The annual range of temperature is high

B. rain occurs throughout the year

C. summers are hot and dry

D. dust storms are common

12. Which of the following methods is used to catch fish in the deep sea?
- A. line fishing
 - B. Trawling
 - C. basket fishing
 - D. spearing
13. Which one of the following is the main effect of HIV and AIDS on population growth
- A. It lowers the life expectancy.
 - B. It reduces the fertility rates.
 - C. It leads to increased deaths.
 - D. It lowers the birth rates.
14. The main reason for establishing settlement schemes in Kenya after independence was to
- A. Improve the standards of living in the rural areas.
 - B. To provide farms to people who had no land.
 - C. reduce pressure on land in densely populated areas
 - D. increase crop and livestock production
15. Which one of the following groups of factors has favoured the growth of Nakuru town?
- A.

- Presence of Volcanic soils
- Availability of Water
- Existence of a Rich hinterland

B.

- Presence of Minerals
- Early settlement by Asians
- Presence of an international Airport

C.

- Establishment of cultural Centres
- Existence of headquarters of U.N. agencies
- Development of a lake port

D.

- Presence of white settlers
- Establishment of an administrative centre
- Well developed transport network.

16. Three of the following are problems facing poultry farming in Kenya. Which one is **not**?

A. Diseases that kill the birds

B. shortage of Worker

C. expensive poultry feeds.

D. changes in prices of poultry products.

17. John, a standard six pupil, notices an elderly person lying along the pathway. The **best** action for John to take to assist the person is to

A. try to talk to the person.

B. call for help

C. let the person rest.

D. Try to move the person.

18. The main factor favouring the large scale dairy farming in the kenya highlands is

A. existence of Cool climate

B. availability of veterinary services

C. availability of labour

D. existence of milk storage facilities

19. Which one of the following Statements describes litigation as a way of resolving conflict in the society?

A. taking the matter to court

B. asking for forgiveness

C. discussing with one another

D. involving a third party

20. The work of the police force in Kenya is to

A. Make laws

B. arrest law breakers

C. punish law breakers

D. protect the boarders

Appendix IV

SOCIAL STUDIES STANDARD EIGHT
REVISION TEST TWO

Time: 30 minutes

Name of candidate _____ School _____ Index No: _____

Instructions to candidates:

Write your name, name of your school and index number in the spaces provided above.

This test has 20 questions.

Answer all questions in this test.

Show your answers on this paper by putting a Circle on it.

QUESTIONS

1. YOUTH AGO, *in traditional African society*. LEARN HOW?

A) TIMETABLE SAME CLASS USE

B) LEARNER EACH PROFESSIONAL PERSON HAVE TEACH TEACH THEM

C) BOY, GIRL TOGETHER SKILL LEARN SAME SAME

D) *The learner would write notes in book*

2. TIME PEOPLE *from* COUNTRY DIFFERENT DIFFERENT ENTER ANOTHER

COUNTRY, THIS CALLED WHAT?

A. *immigration*

B. *emigration*

C. *rural-urban migration*

D. *urban-rural migration*

3. STATEMENT WHICH BELOW TRUE ABOUT HOW COMMUNITY MANY *in* KENYA INTERACT BEFORE WHITE PEOPLE COME KENYA RULE?

A. COMMUNITY ALL TOGETHER HAVE COMMON ONE ARMY.

B. COMMUNITY ALL TOGETHER PLAN HAVE *common initiation ceremonies*.

C. COMMUNITY ALL HAVE EACH *trading activities*.

D. COMMUNITY ALL WORSHIP **the SAME** gods.

4. PERSON WHICH BELOW TRAVEL SAME HAVE ACTIVITY MANY *along* RIVER Z-

A-M-B-E-Z-I

A. DR. DAVID LIVINGSTONE

B. DR. LUDGWIG KRAFT.

C. JOHANN REBMANN.

D. VASCO DA GAMA. *2*

5. PORTUGUESE EAST AFRICAN COAST COME /WHY/
- A. THEY WANT FORT JESUS BUILD
 - B. THEY LOOK *search* RIVER NILE START FROM WHERE
 - C. THEY WANT *trade with* PEOPLE *in* AREA EAST African COAST
 - D. THEY WANT MAIZE FARM BIG MANY START HERE
6. TIME EARTH MOVE ROTATE HAPPEN WHAT?
- A. WIND DIRECTION CHANGE CHANGE
 - B. DAY *and* NIGHT HAPPEN
 - C. CLOUD CLOUD CREATE
 - D. *the four seasons* HAPPEN
7. *Kenyan communities* WHICH BELOW HAVE LANGUAGE GROUP SAME?
- A. NANDI, BORANA *and* KIPSIGIS
 - B. RENDILE, GALLA *and* NANDI
 - C. KIPSIGIS, RENDILE *and* ORMA
 - D. GALLA, ORMA *and* BORANA
8. *Soil erosion* POSSIBLE START WHICH BELOW
- A. *terracing*

B. *contour ploughing*

C. *crop rotation*

D. *monocropping*

9. **REASON WHY CHILDREN MUST HELP PARENT(S) at HOME with WORK**

DIFFERENT DIFFERENT THERE *is because*

A. CHILDREN POSSIBLE CATCH SALARY FROM WORK THIS

B. CHILDREN POSSIBLE IMPROVE TIME LEARN *IN CLASS AT SCHOOL*

C. CHILDREN POSSIBLE GROW FAST FAST

D. THIS WORK TOGETHER HELP PROMOTE FAMILY LIVE UNITY.

10. EUROPEAN NATION DIFFERENT DIFFERENT *scrambled for countries in AFRICA*

WHY/ THEMSELF WANT

A. *raw material for INDUSTRY THEIR in* EUROPE CATCH

B. CULTURE AFRICA PROMOTE

C. MAKE PEOPLE AFRICA JOB MANY CATCH

D. PEACE CONTINENT-AFRICA PROMOTE.

11. BELOW POINT THREE TRUE ABOUT MEDITERRANEAN CLIMATE. POINT WHICH

TRUE NOTHING

A. *the annual range of temperature is high*

B. RAIN THERE ALWAYS YEAR WHOLE

C. TIME SUMMER PLACE THIS HOT SAME DRY

D. DUST MOVE SAME STORM COMMON THERE

12. WAY WHICH POSSIBLE USE CATCH-FISH *in SEA DEEP DEEP?*

A. LINE USE

B. *trawling*

C. BASKET USE

D. SPEAR USE

13. HIV AND AIDS *HAS EFFECTS ON POPULATION GROWTH*, SOME WAY WAY

WRITE BELOW; WAY WHICH EFFECT BIG OR MORE ?

A. PEOPLE DIE BEFORE BECOME VERY -OLD

B. PEOPLE BECOME FERTILE MORE NOTHING

C. PEOPLE MANY DIE.

D. PEOPLE BORN BORN FEW.

14. REASON WHICH MAIN LAND GIVE-BACK to **Kenyans** SAME **settlement scheme**

AFTER TIME INDEPENDENCE CATCH?

A. MAKE *life better for* PEOPLE LIVE VILLAGE AREA.

B. **give land to** PEOPLE LAND HAVE NOTHING.

C. AREA SOME HAVE PEOPLE MANY, **better** MOVE SOME to OTHER LAND.

D. INCREASE SPACE PLANT CROP SAME **livestock** KEEP.

15. REASON WHICH THREE BELOW MAKE TOWN NAKURU GROW FAST FAST

A.

- *VOLCANIC SOIL* THERE A LOT
- WATER AVAILABLE
- *RICH HINTERLAND* THERE

B.

- *MINERALS* THERE A LOT
- *ASIANS* LIVE THERE FROM TIME AGO
- AIRPORT INTERNATIONAL THERE

C.

- CENTRE CULTURAL MANY START THERE
- OFFICE MAIN *UNITED NATIONS AGENCY* THERE
- LAKE PORT BUILD THERE

- WHITE PEOPLE LIVE SAME FARM THERE
- OFFICE GOVERNMENT BUILD THERE
- ROAD SAME RAILWAY PASS THROUGH THERE.

16. PROBLEM BELOW FACE CHICKEN FARMING NOTHING WHICH?

- A. DISEASE MANY POSSIBLE KILL CHICKEN
- B. worker FEW FEW
- C. FOOD *for* CHICKEN EXPENSIVE
- D. PRICE CHANGE CHANGE TIME WANT SELL CHICKEN

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17. JOHN NOW CLASS SIX, TIME JOHN WALK ROAD, HIMSELF SEE WOMAN OLD SLEEP THERE. YOU THINK THING JOHN DO IMPORTANT WHICH HELP WOMAN OLD THIS?

- A. TRY TALK TO WOMAN OLD
- B. CALL PEOPLE OTHER HELP SEE PROBLEM WHAT
- C. LEAVE WOMAN OLD REST CONTINUE
- D. TRY CARRY SAME MOVE WOMAN OLD

18. REASON MAIN WHICH MAKE POSSIBLE BIG *DAIRY FARMING SUCCEED* in the *Kenyan highlands*?

- A. *cool climate* THERE
- B. DOCTOR SAME MEDICINE FOR CATTLE *available*
- C. PEOPLE MANY THERE WORK IN **dairy farming**
- D. PLACE STORE MILK MUCH THERE **for farmers**

19. STATEMENT WHICH BELOW *explains the word litigation* MEAN WHAT?

- A. *go to court for* SOLVE CASE YOU HAVE
- B. ASK PERSON FORGIVE YOU.
- C. DISCUSS **with** PERSON WRONG YOU
- D. INVOLVE PEOPLE OTHER ADVICE PROBLEM SOLVE HOW

20. KENYA HERE WORK **MAIN** **for** POLICE WHAT?

- A. MAKE LAW MANY
- B. PEOPLE ARREST **who** LAW BREAK
- C. PUNISH PEOPLE *who* LAW BREAK
- D. BOARDER PROTECT COUNTRY KENYA