

Effect of Kenyan Sign Language on Academic Performance of Learners with Hearing Impairment; A Case of Kedowa Special School, Kericho County, Kenya

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Abstract: The purpose of the study was to establish the effect of Kenyan Sign Language (KSL) on academic performance of learners with hearing impairment in Kedowa Special School, Kericho County, Kenya. The government has done all it could to make KSL an acceptable mode of communication to the deaf and the hearing. This includes its recognition in the new Constitution and its inclusion as an examinable subject in the National examinations. Despite all these efforts, it has been noted that learners with hearing impairments continue to lag behind their hearing peers in the national examinations like Kenya Certificate of Primary Education (K.C.P.E) and Kenya Certificate of Secondary Education (K.C.S.E). The study employed a case study as its research design and used interviews, archival records, questionnaires and observation as its instruments. The reliability of the instruments was determined using the test-retest method while its validity was determined by the help of KSL experts and the researcher's lecturers and supervisors. A purposive sampling technique was used to arrive at the sample size of 181 respondents. Data was analyzed using the SPSS version 21 by first categorizing the responses from the different respondents, editing them and then computing them in respect to the objectives and research questions of the study. The findings of the study, showed that KSL was not used in the schools due to lack of teaching materials and resources like books hence the Ministry of Education should provide adequate teaching and learning resources for special schools for the deaf for successful implementation of KSL.

Key Terms; Deaf, Hearing Impairment (HI), Lip reading, Oral communication, Kenya Sign language, Academic Performance

I. BACKGROUND TO THE STUDY

Kenyan Sign Language (KSL) is a complete language with all properties of human languages and people with hearing impairments in Kenya, need to be educated through this natural language, which they prefer to use and understand with ease. The use of KSL not only enable them master the curriculum content but also to become bilingual, capable of participating in complex discourse in both KSL and written English as these will later be important in their career and social life. This is only possible through the guidance of a teacher who has Kenyan Sign Language competence (Hope et al, 2010).

Kenya became party to the Salamanca Statement and Framework for Action of 1994 that urged all schools to accommodate all children irrespective of their physical, mental, and emotional or any other condition that might hinder them from acquiring the much needed education (United Nations Educational, Scientific and Cultural Organization (UNESCO) 1994). Kenya joined party to this international call for the right of the child by emphasizing on quality Education For All (EFA) by 2015. Many special schools have been started all over the country to cater for these children.

Since then, the Language has undergone many changes and developments to become what it is today. It has been accepted as a mode of communication to the deaf society and as a medium of instruction in schools for learners with hearing impairment. The United State of America National Research Council 2001 was mandated to identify the practice of educational assessment to determine how well students are learning and as an integral part of the quest for improved education. It was intended to bring feedback to students, educators, parents, policy makers and public about the effectiveness of educational services especially relevant to assessing the academic achievements of deaf students (Ross 2008).

1.1 Statement of the problem

In Kenya, despite the high allocation of government funds to special schools, special training of teachers, provision of learning resources, all these are not fully effective as special schools continue posting poor results. Schools of hearing impaired learners are faced with many challenges affecting their academic performance namely communication, curriculum, social and economic just to name but a few. In order to improve the academic performance there is need to look at the use of Kenya sign language in teaching and learning in Kedowa Special School.

Most of the researches done on hearing impaired pupils have mainly focused on social interaction and family perception of the deaf. A review of related literature indicates that although

a number of studies have been carried out on issues of special education, few studies have dealt with factors influencing the hearing impaired academic performance more so at Kedowa Special School. For example, Opondo (2001) investigated general factors contributing to low academic performance in hearing impaired schools in Nyanza Province. This study focused mainly on social, economic and cultural factors influencing academic performance at St. Martin school for the hearing impaired. Hence the current study sought to establish the effect of Kenya Sign Language on academic performance of hearing impaired pupils in Kedowa Special School and in order to improve the academic performance of these pupils, there is need for data on the various factors that influence their performance.

1.2 Theoretical Framework

The study was guided by Piaget's (1964) theory of cognitive Development. Jean Piaget's theory of intellectual development is considered a leading theory on cognitive development (Flavell, 1963). Piaget's theory asserts that intellectual development is a direct continuation of inborn biological development. Piaget maintains that intelligence is rooted in two biological attributes found in all living creatures: organization and adaptation. According to Piaget's theory each stage in the learning of KSL provides the foundation for the next stage permitting progressively complex and effective adaptations to the skill. Piaget stresses that as children mature mentally, they pass sequentially through four major stages of cognitive development which are; Sensory motor stage - 0 - 2 years; Preoperational or intuitive stage - 2 - 7 years; Concrete operations stage - 7 - 11 years and Formal operations stage - 11 - 15 years and that each stage having several sub stages. Each stage is a system of learning that is quantitatively different from the preceding stage in this case learners at grade 1 are acquainted with basic skills of Kenya sign language while pupils at class 8 is perceived to have mastered the Kenya sign language. Each stage is a major transformation in thought processes compared to the preceding stage. The stages are sequential and follow an invariant sequence. This means that the child cannot skip or miss a stage or by - pass a stage. He must go through each stage of Kenya sign language in a regular sequence.

Piaget's theory of cognitive development has far reaching implications for curriculum development, planning, implementation, evaluation and instructional of Kenya Sign Language in schools. Curriculum planning for KSL should revolve around the subject matter, the society and the learner. When the orientation has the learner as a basis, then we must consider his interests, felt needs, basic urges or drives and concerns as he move through the various classes. The teaching methodology and teaching materials, and the learning activities for Kenya Sign Language should be those that are appropriate to each of the cognitive developmental stages of the learners. Since the theory says that there is a mutual interaction between the learner and the environment, teaching materials should come from the learner's environment.

Teachers as instructional managers should use the hierarchy to: understand why children think and reason as they do; and to help the children master intellectual processes at the appropriate age. Children at various ages have different capacities for attention and comprehension. This means for instance that a standard one pupil may not endure a seventy minute double period as would a standard seven (Anita 2004).

For successful academic performance to be realized by learners with hearing impairment, they have to know how to use Kenya Sign Language in their learning. This is possible if the learners have positive and good attitude towards Kenya Sign Language; they must frequently use KSL in their class so that they master the skill and that they need to have support from their family who will ensure that they motivate these learners to learn Kenya Sign Language by ensuring that the learner has revision resources while at home or an expert who will guide them.

II. USE OF KENYAN SIGN LANGUAGE IN SPECIAL SCHOOLS

Okombo (1992) noted that most teachers in schools for the deaf have for a long time, been handicapped especially in imparting knowledge. These teachers are normally individuals who have gone through university in the case of secondary school teachers or through college for primary school teachers. These are brilliant individuals who are handicapped by lack of preparation for teaching in a non-speech environment. For fresh college or university graduates posted to schools for the deaf for the first time, they are handicapped by many factors, among them; negative attitudes towards deaf children perpetrated by the older generation teachers; their speech-based training throughout their life (some may be seeing deaf children for the first time); and lack of KSL communication skills.

These handicapping factors were alluded to by Okombo (1992) but there doesn't seem to have been any meaningful change to date. Commenting on the state of deaf education in Kenya, he said,

"For more than thirty years, our teachers have tried to speak to deaf children but they have failed. And because of this failure, our teachers have come to the conclusion that the Deaf are not meant for college and University education".

The teachers feel successful if a deaf child is able to mumble some few words and can do some elementary job as a craftsman, say in a carpentry shop. The teachers therefore need to be equipped with KSL skills for them to be effective in their job. Language teachers specifically need to be competent signers to be able to lay the foundation that other teachers can build on in terms of teaching academic subjects in school to do what Anderson (1994:6) calls "conducting complicated mental operations" and thus prepare deaf children for the real world. This challenge does not seem to be an entirely Kenyan one. Even in countries where SL has been adopted as a language of teaching, there are still issues

concerning the quality of teachers. According to the proceedings of the deaf Australia national conference (2013), although the Australian Sign Language is included in the national curriculum as a language of teaching, there is concern surrounding the linguistic understanding of some teachers delivering the courses.

According to Okombo *et al* (2006), the teacher can play this important role if and only if he or she has the following capacities: a) Fluency in KSL as a language of communication across the curriculum and particularly as a medium of instruction. b) Skills and knowledge of teaching KSL as a language i.e. (i) basic linguistics of KSL including KSL language skills; and (ii) methods of teaching and assessing a non-spoken language.

Mulonda (2013) in his study on *a situational analysis on the use of sign language in the education of the deaf in Zambia*, wanted to provide a baseline information on the current practices in the education for the deaf which are used to guide policy on language and education for the deaf. The study was carried out in two schools located in the Eastern Province and the Copper Belt Province of Zambia and the target population included, deaf pupils, teachers in deaf schools and units in Zambia, lecturers from Zambia Institute of Special Education (ZAMISE) and University of Zambia (UNZA), standard officers, curriculum specialists in special education, NGOs working with the deaf and parents of deaf children. He used a case study design and the findings of the study, showed that many teachers had not received adequate training in sign language.

The study found that sign language was the main medium of communication to both the teachers and the pupils and that it seems that there is no policy on the teaching of sign language to guide the teachers as was seen from the responses. The teachers’ views were supported by the curriculum specialist for the hearing impaired, who stated that there was need to introduce sign language as an examinable subject (Mulonda, 2013).

III. RESEARCH DESIGN

Case study research design was used in this study. A case study is an in-depth study and detailed description of a single entity, situation or phenomenon (Kenya Institute of Management Hand Book, 2009). The research study was carried out in Kedowa Special School for the Deaf which located in Kipkelion East Sub-County of Kericho County. The population under study was 24 teachers and 306 learners giving a total target population of 332 respondents where a sample size of 181 respondents was sampled using Yamane (1973) sample size formula. The researchers’ accessible population was drawn from upper primary which was class 4, 5, 6, 7, 8, Form 1 and 2.

In order to obtain the correct information about the study, the researcher employed interviews, questionnaires, archival records and observation as the main tools of the study. Pilot

study was carried out at St Kizito Special School for the Deaf in Bureti Sub-county, Kericho County. This procedure was repeated twice after a lapse of one week to test the validity and the reliability of the research instruments. The school had the same characteristic as the study school since all the learners were hearing impaired and that the school has both primary and secondary school sections.

The instruments that were employed in the study were; interview schedule, questionnaires, archival records and observation, were validated with the help of KSL experts and the researcher’s supervisors whose comments were reviewed and the complex items reworded or discarded. The content validity of the instruments was enhanced at the initial stage and therefore its invalidity was checked. The reliability of the instruments in the research study was determined during the piloting stage through a test-re-test method. This was done through a repeated trial until the desired results were determined which was a Cronbach Alpha value of 0.785 hence the instruments were reliable.

Data was analyzed using descriptive statistics. After collecting data using the various instrumentations, the researcher grouped the results according to the responses obtained from the different instrumentations used. The responses from the head teachers, teachers and the learners, were categorized, edited, coded and computed. The Statistical Package for Social Science (SPSS Version 21) was used to analyze the responses in respect to the objectives of the study. Each raw data was categorized based on the research questions.

Qualitative data was tabulated and analyzed using the attribution and assertions analysis which are techniques of content analysis. Attribution analysis examines the frequency with which certain descriptive phrases and qualifiers are used. Assertion analysis takes the form of a matrix with objects as columns and descriptors as rows. The analyzed data was then presented in inform of tables and figures.

IV. USE OF KENYA SIGN LANGUAGE ON ACADEMIC PERFORMANCE

Researcher asked the respondents who were teachers and head teachers in both primary and secondary school how the use of Kenya Sign Language affected their academic performance. The responses were as per Table 1

Table 1 Use of Kenya Sign Language on Academic Performance

Response	Frequency	Percent
Yes	15	65.2
No	8	34.8
Total	23	100.0

Source: Research Data (2019)

From Table 1, majority of the respondents 15 (65.3%) agreed that the use Kenyan Sign Language in school enables learners to perform well in their academic performance while 8 (34.8%) disagreed that the use of Kenyan Sign Language in

school does not improve the academic performance of learners. This means that for good results to be posted in Kenyan Sign Language, primary and secondary management need to emphasize on daily basis the need for learners to frequently use KSL in school.

Interviews with head teachers revealed that all of them noted that teachers preferred to use Total Communication in teaching with emphasis on Communication. Reasons provided by the teachers on use of Total Communication in teaching was it is teacher centered hence favored the teacher especially because of limitations in sign language and hence easy to explain concepts. Teachers didn't know the format of K.S.L and were comfortable with the use of Sign Exact English. Total communication helped the post- lingual deaf students especially by lip reading and use of residual hearing and all textbooks were written in English hence the use of Sign Exact English to enable students to read.

Research findings on medium of instruction by the teachers through head teachers and teacher's interview schedule were contrary to the researcher's observation indicating that, the teachers admitted to be using Kenyan Sign Language for instruction while in real sense they used Total Communication. This could be because they feared victimization due to the policy in place on Kenya Sign Language use (MOE 2004, 2009) or for ease of communication.

Further findings revealed that Kenyan Sign language was rarely used by most teachers to clarify concepts in all subjects yet KSL was learner centered and enhanced understanding. These findings agreed with Kamonya (2008) who found out that teachers preferred Total Communication for teaching learners with hearing impairments. Muiti (2010) showed that learners with hearing impairments learn and understand better through KSL hence suggested that teachers need to be proficient in using Kenyan Sign Language in order to pass the expected knowledge and skills to the learners with hearing impairments. This concurs with Adoyo (2015) study which revealed that many teachers in schools for the deaf used simultaneous communication and had difficulties in communicating ideas to deaf students through it. This was observed during one of the lessons where majority of the learners were not happy with one of the teachers who spoke rather than sign.

According to Ochwal (2008), total communication strategy is characterized by omissions and mismatches which have great impact on what is communicated to the learners leading to communication difficulties such as distortion of the message, unintelligibility and no message.

The academic performance of the learners in the national examination is presented in a Table 2.

Table 2 KCPE Results Analysis

Subject	2012	2013	2014	2015	2016	2017	2018
English	25.31	28.27	21.00	25.92	25.36	33.36	30.00
KSL	41.19	42.43	46.00	48.00	48.73	49.73	48.78
Math	25.19	29.00	26.06	28.15	32.00	26.64	32.00
Science	22.06	18.43	24.78	23.46	19.82	24.09	25.89
S/S	14.75	17.00	17.00	15.54	15.64	19.91	19.89
MSS	128.5	135.14	131.22	141.08	141.55	153.73	156.56

Source: Kedowa Special Primary School Exams Results Analysis (2019)

From the research study, it was established that the form 1 entry mark had been raised because of the improved academic performance after the introduction of KSL as an examinable subject. The principal of Kedowa secondary school confirmed that before the introduction of KSL as an examinable subject the form one admission mark was as low as 100 but after the introduction of KSL the admission mark was raised to above 100.

The researcher observed several behaviors which assisted in answering the research questions through the observation schedule. Such behaviors included learners' participation in the lesson, learners' attentiveness in class, learners' understanding of the concepts and teacher's mastery of the lesson, teacher's use of the teaching learning materials, teacher's mastery of KSL and the teacher's mastery of the teaching skills.

Kenya Sign Language on the Learner's Academic Performance.

The effect of Kenya Sign language on learner's academic performance in special school for the deaf was inquired by the researcher through the head teachers' interview and the archival records. The response on use of Kenya Sign Language to enhance academic performance of learners was achieved through the use of the interview schedule and the responses were as per Table 4.3.

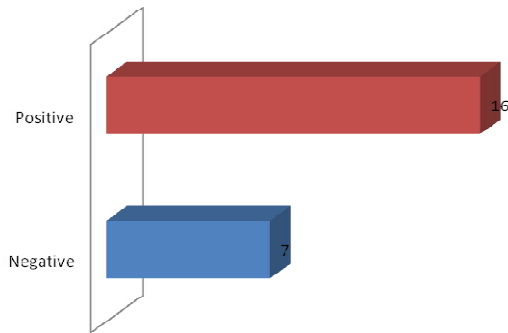
Table 4.3 Use of KSL to Enhance Learner's Academic Performance

Response	Frequency	Percent
Yes	21	91.3
No	2	8.7
Total	23	100.0

Source: Research Data (2019)

Majority of respondents 21 (91.3%) agreed that the use of Kenyan Sign Language enhance learners academic performance while 2 (8.7%) disagreed to KSL enhancing academic performance of learners. The responses on how the Kenyan Sign Language influenced the learners academic performance is as shown in Figure 1 where majority of respondents 16 (69.6%) reported that it had a positive influence and 7 (30.4%) said that it had a negative influence.

Figure 1 Kenya Sign Language on Academic Performance



Source: Research Data (2019)

The study sought to determine if the use of Kenya Sign Language has an effect on the performance of other subjects and the findings from the teachers and head teachers interview schedule was as per Table 4

Table 4 Effect of KSL on learner’s academic performance on other subject

Response	Frequency	Percent
Improved	19	82.6
Not Improved	4	17.4
Total	23	100.0

Source: Research Data (2019)

The effect of Kenya Sign language on learners academic performance on other subjects as noted in Table 4.12 showed that other subjects have since improved where majority of the respondents 19 (82.6%) agreed to it while 4 (17.4%) disagreed. The responses on the interview schedule for the head teachers and the teachers on the effect of Kenya Sign Language on learner’s academic performance revealed that it enhanced the academic performance of learners positively. It also enhanced the performance in other subject because from the response of the head teachers and teachers they noted that other subjects had improved. Other subjects though improving was through a small percentage. The results support Okombo (2004) who revealed that learners with hearing impairments found it easy to interact and understand information when Kenyan Sign Language was used because it served as a mother tongue.

V. CONCLUSION

There’s need to organize for in- service or workshops or seminars where teachers can gain more skills on appropriate teaching methodologies using Kenya Sign Language. The teaching materials and resources for teaching Kenya Sign language which was lacking in the special school for the deaf need to be provided so that learners have enough reference materials. Thus there is need for the provision of learning and teaching resources required to teach Kenya Sign language in both primary and secondary schools for students with hearing impairment.

There is need for use of Kenyan Sign Language in school so as to enable learners to perform well in their academic. Teachers need to learn the format of Kenya Sign Language to enable them feel comfortable while teaching or talking with the students and clarifying concepts in all subject areas. There is need to encourage teachers and make them motivated and be willing to teach Kenya Sign language by facilitating them to go for training on KSL so as to have good understanding of subject and be well trained on it.

There is need to have adequate teaching and learning materials for used in the teaching of Kenya Sign language so as to enable teachers perform their teaching functions adequately. There is need for free interaction between the teachers and the learners who will in turn share their problems regarding their academic performance. Parents need to be encouraged to often come and check on the progress of their children because it will enhance their academic performance.

VI. RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made;

Teachers need to be trained on Kenya Sign Language through in- service or workshops or seminars so that they gain more skills on appropriate teaching methodologies of Kenya Sign Language. Special school need to have adequate teaching materials and resources for use in teaching Kenya Sign language.

The use of Kenyan Sign Language in school need to be encouraged since it enables learners to perform well in their academics. Teachers need to learn the format of Kenya Sign Language so as to be able to teach or talk with the students well. Teachers need to be encouraged and be motivated to teach Kenya Sign language. There is need for adequate teaching and learning materials for teaching of Kenya Sign language so as to enable teachers perform their teaching functions adequately. There is need for free interaction between the teachers and the learners who will in turn share their problems regarding their academic performance. Parents need to be encouraged to often come and check on the progress of their children because it will enhance their academic performance.

Further studies can be done on Teachers’ attitude towards the use of Kenya Sign Language as a language of instruction to learners with hearing impairment and on utilization of teaching and learning resources in special schools for the deaf on the academic performance of Kenya Sign Language.

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