EVALUATION ON IMPLEMENTATION OF KENYAN SIGN LANGUAGE AS AN EXAMINABLE SUBJECT IN SCHOOLS FOR LEARNERS WITH HEARING IMPAIRMENT IN KENYA

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Abstract
The teaching of Kenyan Sign Language (KSL) as a subject in schools for learners with hearing impairment started in 2007 and was examined in 2010 after consistent poor performance in Kiswahili subject among these learners was realized. This research study, therefore, was carried out to evaluate the implementation of Kenya Sign Language as an examinable subject in primary schools for learners with hearing impairment in Kenya and how it had influenced their academic performance. The study adopted the descriptive survey design. The population comprised five schools and three hundred and sixty nine respondents from which a sample of five head teachers, fifty seven teachers and fifty learners was chosen. The study used purposive and simple sampling procedures; purposive sampling was used to select the five schools for learners with hearing impairment and the five head teachers while simple random sampling was utilized to select the fifty seven teachers in schools. Information was gathered through questionnaires administered to the teachers while head teachers and learners with hearing impairment were interviewed using face to face interviews. Observations and document reviews were also employed to crosscheck information. Quantitative data was analyzed using descriptive statistics while qualitative data was done by coming up with categories of responses, themes and sub themes. The study revealed that KSL performed above average and was the best subject as compared to the other subjects taught in schools for learners with hearing impairment. While KSL subject was found to be the best performed, the scores in certain subjects, such as Social Studies/CRE were dismal and performance of learners with hearing impairment was still below average as compared to their hearing counterparts. The study also revealed that the major challenges which teachers and learners faced were lack of knowledge of KSL, limited vocabulary and inadequate learning and teaching materials for KSL. The study also revealed that teachers try to overcome these challenges by learning from the learners, consulting from more experienced teachers, and creating new signs for words which are new to both the teachers and the learners. The study recommends that more signs be developed to keep abreast with the trends and emerging issues in education of learners with hearing impairment. Further, the study recommends that the curriculum be reviewed to meet the needs of

learners with hearing impairment. The research findings may guide teaching and learning in schools for learners who are hearing impaired as well as improve their academic performance in Kenya.

Keywords: Academic Performance, Examinable, Hearing Impairment, Kenyan Sign Language, Learners, Subject

1.1 Introduction

Kenya Sign Language is the language that Deaf people in Kenya use to communicate. It is a fully fledged language with its own vocabulary, syntax and grammar and it is currently taught as a subject in schools for learners with hearing impairment in Kenya. Previously, it was mainly used as a medium of instruction for these learners once they joined school (Ministry of Education (MoE), 2009). According to KCPE results analysis of 2005 (Ministry of Education, Science and Technology (MOEST), 2005b), learners with hearing impairment performed better in mathematics and English but worse in Kiswahili thus resulting in a drastic drop in their overall performance in national examinations depriving them of chances in secondary schools. As a result, there was an outcry from teachers, parents and deaf community on poor performance in Kiswahili by learners with hearing impairment (Kimani, 2012). To address this, the Government of Kenya introduced KSL to be taught as an optional subject in schools for learners with hearing impairment. The question then to ask is; has KSL caused a paradigm shift in academic performance of these learners? This study, therefore, was carried out to evaluate the implementation of KSL as a subject and its influence on academic performance of learners with hearing impairment in special primary schools in Kenya.

2.1 Implementation of Kenyan Sign Language as a Subject

In 2003, a Task Force was formed to look into the educational needs of learners with special needs (Republic of Kenya (RoK), 2003). The task force recommended among other things that KSL be examined at both Kenya Certificate of Primary Education (KCPE) and Kenya Certificate of Secondary Education (KCSE) once the curriculum was developed and approved. The curriculum was then gradually developed and teaching of KSL as a subject started in 2007 and was examined by the Kenya National Examinations Council (KNEC) at KCPE and KCSE levels (Kimani, 2012). The teaching of KSL as a subject in schools for learners with hearing impairment started in 2007 and was examined in 2010 by the Kenya National Examinations Council (KNEC) at Primary and Secondary level (Kimani, 2012).

Wasanga (2010) in Kimani (2012) states that, “the decision to examine KSL for learners with hearing impairment was taken after consultations with relevant stakeholders and critical review of the circumstances for the affected pupils. This was meant to mitigate the language challenges they had been facing……..” The move was aimed at improving the examination results with the hope that it would increase the chances of learners who are hearing impaired to join secondary schools (Omutsani, 2012). Despite this change, it is important to note that learners who are hearing impaired

still perform poorly in school especially when it comes to reading and writing as compared to their hearing peers (Omutsani, 2012).

Warnke (2007) adds that Kenya has turned a quick corner with the addition of KSL to examinable subjects in primary and secondary deaf education. While this is on one level a step forward, its implementation has been hastily and wrongheaded. Successful implementation requires thorough research in KSL and a precise understanding of role of KSL in the classroom. As it stands, there are teachers who have poor to modest fluency in KSL teaching from textbooks that treat KSL as a written language heavily tied to English, he concludes that the worst problem facing deaf people around the world is lack of proficiency in the writing of a hearing language.

2.2 Structure of Kenyan Sign Language

Kenyan Sign Language is independent of any spoken language. It has its own sentence structure and set of grammatical rules. In spoken language, the verbs are always preceding the object whereas in KSL, the verb is always succeeding the object. Information in KSL is written by glossing in any language that is understood and is acceptable to a given deaf community. In most cases KSL is glossed in English, this is simply because English is the official medium of instruction from upper primary to higher level of education system in Kenya. Kenyan Sign Language is not random. According to (KNAD, 2001), there are certain orders that can be used while others cannot. The most used being: SVO, SOV and OSV (S= SUBJECT, V= VERB O=OBJECT). The SOV sign order seem to be the most preferred in KSL. A glossed sentence has its meaning enhanced by using non-manual features and facial expressions. These are critical aspects in sentence formation because they give more meaning by showing mood of the speaker.

Lozanova and Savtcher (2009), however, state that sign languages have a grammar and syntax that is quite different from that of spoken languages, which can confuse learners with hearing impairment. Roald (2002) notes that schools would be better placed in creating signs that suit the concepts that teachers encounter in curriculum and, gradually, the same signs would be adopted for future. Teachers, therefore, need to clearly explain content vocabularies and work with their students in deciding which sign to use for content words that have no equivalent (Easterbrooks & Stephenson, 2006). Additionally, teacher mastery of the signed content vocabulary assists the learners in the comprehension of the material as well as the assessment and evaluation of the material (Roald, 2002).

Like English language, KSL has tenses which show the time of an action or an event in a sentence. In KSL, tenses are indicated either at the beginning or at the end of a sentence (Ndegwa, 2008). Tenses can be marked in KSL in two ways. Using an imaginary timeline, the signer can shows the tense either before or after the sentence. The imaginary timeline starts in front of the signer and continue to the back of the signer. The position determines the tense to be used. Signs in front indicate present and future tense, while signs that continue to the back indicate past tense.

Examples:

• FUTURE ME UNIVERSITY FINISH/ DOCTOR BECOME//

• PAST HOSPITAL ME VISIT NOTHING//

Teaching and learning KSL as an examinable subject dictates that a lot more is needed to be taught and learned beyond mastering the vocabulary (signs). The learner who is hearing impaired is expected to be able to write sentences and essays using KSL sentence structure with English vocabulary (Kimani, 2012). Kenyan Sign Language is signed together with the mouthing of English words and the same English words are used in written form of KSL. This study, therefore, further sought to find out how KSL had influenced the performance of other subjects in schools for learners with hearing impairment.

3.1 Methodology

3.1.1 Research Design and Sampling

The study employed descriptive survey design to evaluate the implementation of KSL as an examinable subject and how it had influenced the academic performance of learners with hearing impairment in special primary schools in Kenya. The study was carried out in five selected schools; St. Martins Mumias in Kakamega, Nyangoma in Siaya, Machakos in Machakos, Ngala in Nakuru and St.Kizito in Kericho. The study targeted all head teachers, teachers and learners in standard 7 and 8 from the five schools. The population comprised 5 head teachers, 111 teachers and 253 learners making a total of 369 respondents with a sample size of 112 respondents; 5 head teachers, 57 teachers and 50 learners.

Purposive and simple random sampling techniques were utilized in this study. Purposive sampling was used to select the five counties, the five schools, five head teachers and the fifty learners that were included in the study. Ten learners were purposively selected from classes seven and eight from every schools. From each class, five learners; three boys and two girls, were selected based on their academic performance criteria as given by the class teachers. KCPE results analysis from 2001-2017, was also analyzed and included in the study. Simple random sampling was utilized to select the fifty-seven teachers included in the study.

3.1.2 Instrumentation and Data Collection

For purpose of this study, questionnaires, interview guides and document analysis guides were used. The questionnaire was administered to the teachers of learners with hearing impairment. Open and closed ended questions were designed based on the objectives of the study. Interviews were administered to the head teachers and learners. Two sets of structured and semi-structured interview schedules were designed: one set to collect data from head teachers and another one to collect data from the learners. Document analysis guide was interrogated get KCPE results from 2001 to 2017, for each subject across the five schools. This was done to ascertain the performance in each subject and the general performance of learners with hearing impairment before and after the introduction of KSL as an examinable subject.

3.1.3 Data Analysis

Data obtained from closed-ended items in the questionnaires and the document guide were analyzed quantitatively, while qualitative data generated from open-ended questions in the questionnaires were grouped according to the themes, coded and quantified. Findings were then presented in tables

and graphs using descriptive and inferential statistics using independent sample T-Test to compare means for before and after introduction of KSL subject. Data collected by use of interview were transcribed, organized according to themes, quantified and analyzed using descriptions and thematic text.

4.1 Findings and Discussion

4.1.1 Academic Performance of Learners with Hearing Impairment before and after Implementation of KSL

The researcher sought to find out the academic performance of learners with hearing impairment before and after implementation of KSL subject. For all the five schools, KCPE results from 2001 to 2017 were analyzed for each subject. The findings are shown in Figure 1.1.

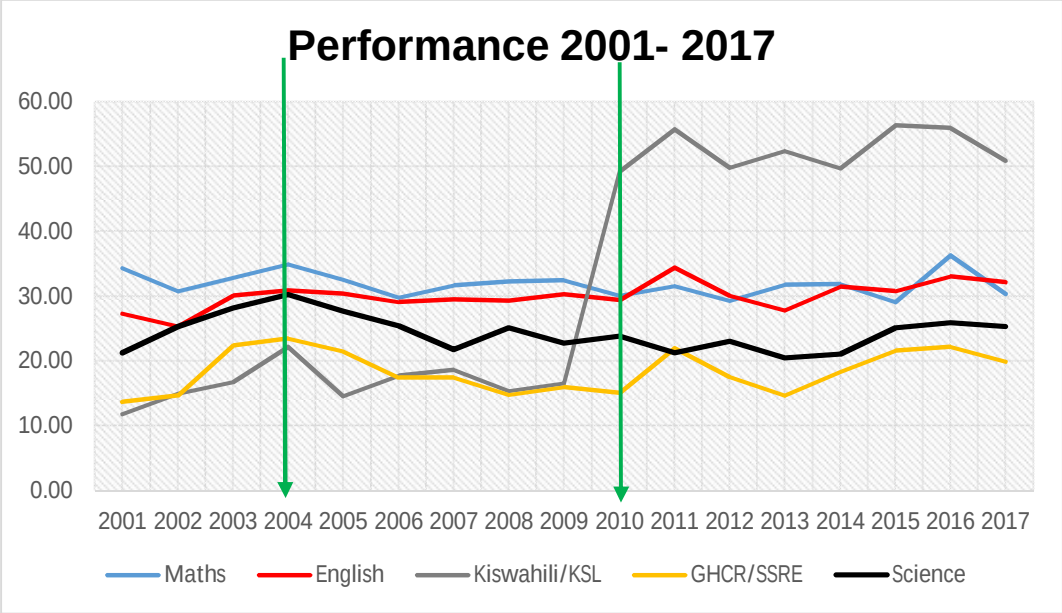

Figure 1.1: KCPE Subjects' Performance Analysis (2001-2017)

Source: Sampled Schools, 2017

Figure 1.1 shows the performance change represented by trend lines for the five subjects. The green dropline represents the partition of the before (recognition of KSL as a medium of instruction) and after group whereby there is an apparent growth in the KSL upon its introduction as an examinable subject in 2010. Comparatively, KSL outperforms other subjects in terms of improvement and has consistently improved over the period of consideration. The findings reveal that academic performance in all the subjects had an upward trend between 2001-2003 before official recognition of KSL in 2004 and slightly dropped from 2004-2009 with English subject remaining almost constant in performance. Generally, the findings reveal fluctuation of performance in all the subjects with GHCRE/SSRE poorly performed. Head teachers and learners interviewed revealed that social studies curriculum was too wide and its concepts were too abstract to be understood.

4.1.2 Individual Subject Performance

An analysis average scores of the individual subjects (for all schools) provides more detail on the extent of these improvements that occurred between before and after introduction of KSL. The results are shown in the Figure 1.2 below and indicate that the biggest improvements across all schools (on average) was in Kiswahili/KSL, which increased by 35 points; this difference is statistically significant ($p<0.001$). There was a decrease in average science score by 3 points, but all other subjects did not record any significant differences.

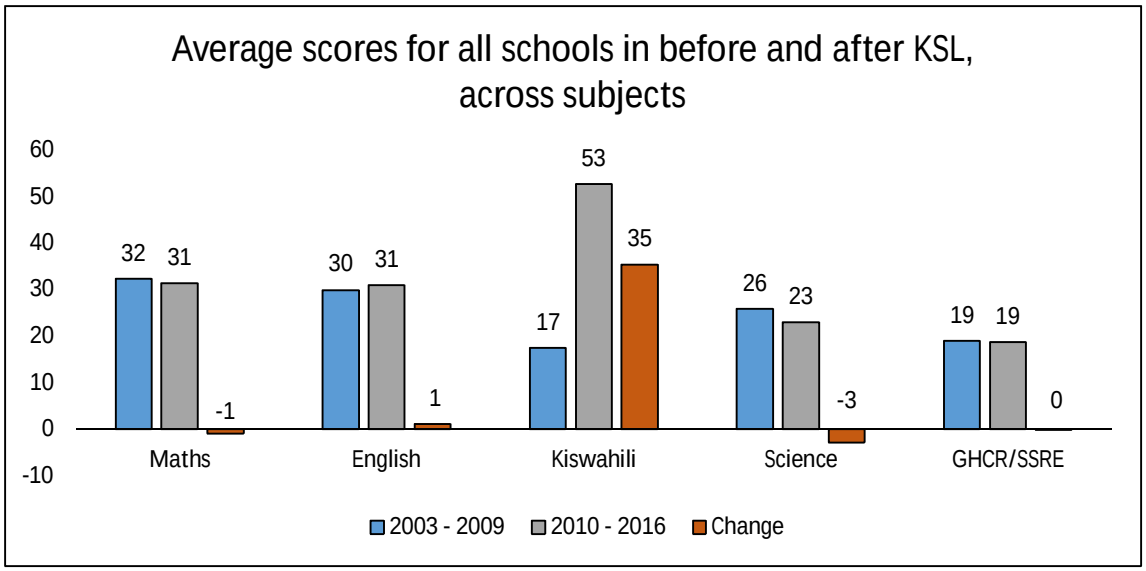

Figure 1.2: Average Scores of Subjects before and after KSL

From the above Figures 1.1 and 1.2, it is interesting to note that since the introduction of KSL as a subject in 2010, learners have generally performed better in that subject than in other subjects for the years under consideration. This could be an indication of success of the subject; it can be speculated that the students who are deaf would be interested in learning the subject more than other subjects. For this reason, KSL being a primary language seems to be consistently performing better for all the years under consideration.

Additionally, results from interviews with the head teachers and learners revealed that academic performance of learners with hearing impaired in their schools had improved, with the best performed subject being KSL while Social Studies was the lowest performed. Head teachers claimed that the academic performance in their schools was good and many learners transited to secondary level of education. The head teachers attested this to KSL being made examinable in 2010 as a way to improve their academic performance. Omutsani (2012), however, pointed out that learners who are hearing impaired still trailed behind their hearing counterparts in academic performance.

4.1.3 T-Test analysis and results

Quantitative data from document analysis (KCPE results) was conducted to corroborate the findings evidenced by the descriptive statistics. The general view had been that KSL introduction in the curriculum had significantly led to improvement in the performance. T-Test was conducted

whereby the results from 2001 to 2009 were considered as the before group and the results for 2009 to 2017 as the results for the after group (introduction of KSL) as given in Figure 1.1 above as earlier shown.

For the comparison of the means for the groups, the descriptive statistics were obtained from the t-test results. The findings are shown in Table 1.1 below.

Table 1.1: Samples Statistics for Subjects

Group		N	Mean	Std. Deviation	Std. Error Mean
Maths	Before	3	32.66	1.760	1.016
	After	14	31.69	2.047	.547
English	Before	3	27.54	2.369	1.368
	After	14	30.61	1.720	.460
Kiswahili/KSL	**Before**	**3**	**14.50**	**2.488**	**1.436**
	After	**14**	**37.51**	**18.186**	**4.860**
GHCR/SSRE	Before	3	16.93	4.761	2.749
	After	14	18.69	3.045	.814
Science	Before	3	24.93	3.455	1.995
	After	14	24.22	2.747	.734

The findings in Table 1.1 show that English, Kiswahili/KSL and GHCR/SSRE recorded negative mean change (Before-After) meaning improvement after the introduction of KSL, though KSL had the highest absolute mean difference. On the other hand, Math and Science seems to record positive mean difference which indicates decline in performance on average, though the difference was seemingly slight. The t-test inference for the difference in means were observed to identify the mean differences that were statistically significant. Table 1.2 below shows summary of the test.

Table 1.2: Independent Samples Test for Subjects

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Maths	Equal variances assumed	.06	.80	.76	15.00	.46	.97	1.28	-1.76	3.70
	Equal variances not assumed			.84	3.28	.46	.97	1.15	-2.53	4.47
English	Equal variances assumed	.26	.62	-2.65	15.00	.02	-3.07	1.16	-5.54	-.60
	Equal variances not assumed			-2.13	2.47	.14	-3.07	1.44	-8.27	2.13
Kiswahili/KSL	Equal variances assumed	45.67	.00	-2.13	15.00	.05	-23.01	10.79	-46.00	-.02
	Equal variances not assumed			-4.54	14.64	.00	-23.01	5.07	-33.84	-12.19
GHCR/SSRE	Equal variances assumed	1.30	.27	-.83	15.00	.42	-1.76	2.12	-6.26	2.75
	Equal variances not assumed			-.61	2.36	.59	-1.76	2.87	-12.44	8.93
Science	Equal variances assumed	.05	.82	.39	15.00	.70	.71	1.81	-3.16	4.57
	Equal variances not assumed			.33	2.57	.77	.71	2.13	-6.74	8.16

The findings in Table 1.2 of the t-test indicate that the only mean difference that was statistically significant was that of Kiswahili/ KSL group. Specifically, the statistics for equal variances not assumed were found to be: t (14.64) = -4.54, $p < 0.00$. Since the means of Kiswahili - introduction of KSL and the direction of the *t*-value, it can be concluded that there was a statistically significant improvement in subject performance following the introduction of KSL to replace Kiswahili from 14.50 to 37.51. This means that the general inference from descriptive statistics that KSL introduction has led to improved academic performance was especially for the particular subject, KSL. However, since other subjects led to a conclusion of insignificant change, therefore the effect may not be statistically significant, except for the KSL subject. This could be interpreted that both the teachers and learners were more enthusiastic about the new subject and focus on KSL, compared to other subjects. The findings agree with Wasanga (2010) in Kimani (2012) study that, implementation of KSL subject and facing out Kiswahili improves the overall academic performance of learners with hearing impairment.

5.1 Conclusion and Recommendations

The study found that, between 2001 -2017, results from the national examinations (KCPE analysis) showed varying results over the years, that is, before and after introduction of KSL as a medium of instruction. Generally, the findings reveal fluctuation of performance in all the subjects with GHCRE/SSRE poorly performed. From 2010, however, when KSL was introduced as a subject and Kiswahili was faced out, great improvement on performance of KSL subject was realized. As a subject, KSL was the best performed, compared to other subjects such as mathematics and science. This may have boosted the overall marks of the learners leading teachers to generalize that the academic performance of learners with hearing impairment had improved. This study, therefore, recommends that the curriculum be reviewed to address the challenges learners with hearing impairment face in subjects that they perform below average. Additionally, signs for abstract concepts need to be developed and sign language be harmonized across the board to curb signs variations in schools. With that great improvement in academic performance may be realized hence increased transition among learners who are hearing impaired.

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