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Assessment of the Contribution of FPE on Teaching and Learning Materials, and Academic Performance of Learners with Hearing Impairment in Nyakach Sub County

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Abstract:

The Free Primary Education (FPE) funding was expected to enhance quality of education in all primary schools including those with inclusive settings by ensuring that adequate teaching and learning (T&L) materials are acquired. However, academic performance of learners with Hearing Impairment (HI) remains low compared to normal learners, thus questioning the availability of T&L materials for the benefit of these learners. The purpose of this study was to establish the contribution of free primary education on T&L and academic performance of learners with HI among inclusive primary schools in Nyakach Sub County, Kenya. The specific objectives were to determine the contribution of FPE on teaching and learning materials, and the contribution of FPE challenges on academic achievement. The study was guided by the social learning theory espoused by Albert Bandura. This study used cross sectional survey design on a target population of seven head teachers; 56 teachers; 191 learners from the seven inclusive public primary schools with learners with HI; and four Educational Assessment and Resource Center (EARC) officers, making up 258 respondents. The study used questionnaires, interview guides and observation check lists for data collection. Reliability was tested through split half after a pilot study, while validity was enhanced through consultation of experts from the department of education of Kenya Methodist University. Thematic analysis was used to analyse qualitative data, while descriptive statistics was used to analyse quantitative data. The study found that FPE funds have not aided sufficiency of teaching and learning resources for learners with HI, hence both are inadequate in inclusive schools. Challenges faced in managing FPE include inadequate in-service training programmes for teachers; and low motivation of learners with HI among others. It was recommended that more learning resources should be provided to inclusive schools to cater for the needs of learners with HI. Further research is recommended on the contribution of FPE on the acquisition of learning materials specific to learners with HI in inclusive public primary schools.

Keywords: Teaching and learning materials, HI, academic performance, inclusive schools, FPE challenges

1. Introduction

Despite concerted global campaigns on Education for All (EFA), only a fraction of learners with HI are in school due to cultural apathy and negative parental attitudes. Hearing loss often impacts negatively on academic outcome for children due to speech and language difficulties as a result of distorted or poor quality input through degraded auditory system (Hayes, 2014). Such delay is normally seen in the expressive and receptive language domains with a great degree. Children with minimal hearing loss (16-25 dB HL) often have difficulty with reading, language, attention, communication, social and emotional function, and fatigue. Indeed, an annual report to Congress (US Department of Education, 2014) on the implementation of the Individuals with Disabilities Education Act (IDEA) indicated that nearly 87% of students with hearing loss spend part of the day in a mainstream classroom. As children with hearing loss spend much of their day in the inclusive classroom, it was important to consider their listening needs compared to their normal hearing peers while in a typical school listening environment.

The contemporary arrangement where learners with disabilities receive educational instructions and support appropriate to their individual needs was adopted by representatives from 92 governments in Salamanca, Spain. The move was meant to enable schools serve all children particularly those with special needs (UNESCO, 2008). Inclusion refers to the diversity of needs of all learners through increased curriculum content, approaches, structures and strategies, with a common

vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children. It is a process of reforming schools and attitudes, which ensures that every child receives quality and appropriate education within the regular schools (Adoyo, 2007). Indeed, the physical environment if not disability friendly and with inadequate specialized resources may make the inclusion process unworkable (World Bank, 2009). This implies that school based factors such as funding, physical resources; and human resources may impose limitations in the inclusion process of learners with disabilities including those with HI if not carefully addressed.

Kenya, being one of the countries that have adopted inclusive education has moved away from the traditional view of inclusive education as only providing education for all children but including those with special needs (MOEST, 2008). Although Kenya has achieved much in inclusion of learners with disabilities, academic achievement of learners within this category has remained pathetic. Morondo (2013) contends that learning outcome at the primary level of education in Kenya is determined by performance in KCPE at the end of primary education cycle after eight years through successive classes. However, a comparative analysis of performance between normal learners and those with HI reveal a disparity in favour of normal learners (learners who do not suffer from hearing impairment) in KCPE. Table 1 illustrates the disparity between learners with HI and regular learners from selected schools in Nyakach Sub County between 2013 and 2015.

Category	Year	Subjects	2013	2014	2015
HI Learners		English	54.64	48.92	53.38
		Kiswahili	52.1	51.42	54.15
		Math	42.9	35.71	41.69
		Science	46.4	40.00	44.23
		SST/R	54.9	45.54	47.77
		Mean Score	250.94	222.59	241.22
Normal Learners		English	58.23	51.42	58.35
		Kiswahili	59.53	51.76	62.8
		Math	43.53	42.00	49.6
		Science	49.70	41.19	48.1
		SST/R	63.35	49.26	52.2
		Mean Score	274.16	235.63	271.05

*Table 1: KCPE Performance of Learners in Inclusive Schools in Nyakach Sub County
Source: Sub County Director of Education, Nyakach (2016)*

It can be noted from Table 1 that the average mean performance of learners with HI remains below 250 marks, while the performance of normal learners remains above 250 marks. To this end, limited information is available with regard to low performance of learners with HI in disregard to availability of FPE funds provided to each pupil by the state.

In addition, the above performance indicators also seem to be in disregard to the fact that teachers who deliver instruction in primary schools (for both regular and hearing impaired) have undergone teacher training in government Teachers' Training Colleges (TTCs) and have been approved to be capable of matching the tasks. Besides, learners with HI and those without HI often cover the same curricular and academic syllabus which is supervised by education officials from the Ministry of Education. Further, the amount of resources provided by the Government in terms of FPE and the Constituency Development Fund (CDF) among others has been distributed to all learners in same proportions without any discrimination. It was therefore critical for the contribution of FPE on academic achievement of learners with HI to be established, so that suitable interventions could be put in place.

1.1. Statement of the Problem

The hearing impaired learners are expected to perform well in national examination, with the use of assistive technology or devices, although availability of the same has not been empirically proved. However this is not the case, since the poor performance still persists in the Kenya Certificate of Primary Education (KCPE) in comparison to learners role of Assistive technology is to help learners with HI to enhance their functioning capability and participate more effectively in the learning process. To achieve this there was need to identify barriers to their participation in learning and provide solutions through assistive technology to counter the same. An analysis of results over a three-year period in KCPE (2013-2015) in 7 inclusive primary schools in Nyakach Sub County indicated low performance in the subject mean scores as compared to the performance of the normal learners. Although it is expected that the learners with HI are provided with adequate funding for the purchase of appropriate devices which are expected to boost their academic performance, the academic achievements of this category of learners remain low. There was therefore need to establish the effectiveness of this funding toward academic achievement of learners with HI in inclusive schools in Nyakach Sub County.

1.2. Purpose of the Study

The purpose of the study was to assess the contribution of FPE on teaching and learning materials, and academic performance of learners with hearing impairment in Nyakach Sub County.

1.3. Research Objectives

The research objectives were to:

- Determine the contribution of FPE on teaching and learning materials, and academic achievement of learners with hearing impairment in Nyakach Sub County, Kenya.
- Establish the contribution of FPE management challenges on academic achievement of learners with hearing impairment in Nyakach Sub County, Kenya.

2. Theoretical and Literature Review

2.1. Theoretical Underpinning

This study adopted social learning theory by Albert Bandura which states that learning, and behaviours, takes place through observation, modeling and imitation of others. The main characteristic of social learning theory is centrality of observational teaching. The theory proposes that academic and behavior modeling takes place through verbal instruction, live modeling by a person and symbolic modeling through four steps: attention, retention, reproduction and motivation. This theory is applicable in inclusion classes as disabled peers can observe their non disabled peers, their teachers and imitate them in order to achieve in the activity areas and acquire skills related to the aspects of growth and development. Social learning theory coupled with Freudian learning principles focus on teaching children important real life social behaviours. Learners with special needs when included in the regular classroom, they get the opportunity to see their peers working habits and are able to model those habits and behaviours to reflect their own. This insight ties into the Freudian theory of identification through observation of learned behavior from the peers around them.

2.2. Literature Review

2.2.1. Contribution of FPE on Teaching and Learning Materials and Academic Achievement of HI Learners

Literature focusing on teaching and learning materials and their influence on academic achievement of learners remains rich. However, how interventions like FPE have contributed towards provision of teaching and learning resources for the betterment of academic achievement of learners with HI has suffered a dearth of literature. Safder, Akhtar, Fatima, and Malik (2012) conducted a qualitative study to identify the problems faced by students with hearing impairment studying in inclusive education at the university level in Pakistan. It was found that students with hearing impairment were facing many difficulties regarding mode of instruction used by the teachers in class room; lack of sign language interpreters, and teachers' (inability to use) sign language during instruction. A study by Efu (2014) investigated accessibility to inclusive education for children with disabilities in two selected districts in Ghana (Ga East and New Juabeng respectively) using a total of two hundred and eighteen respondents were involved and the study employed mixed methods. Evidence showed teacher's competence and attitudes, parental involvement, unavailability of resources and inadequate policies affected accessibility of inclusion to a great extent. Studies by Safder, et al (2012) and Efu (2014) did not focus on the contribution of an intervention towards provision of teaching and learning materials.

Mwanyuma (2016) investigated the factors influencing academic achievement of deaf learners in Kilifi County in Kenya using a target population from the Sahajan and School for the Deaf. The study found that negative community and societal attitudes towards the Deaf influence their achievement in Education, and that most of the schools offering special education to children lack adequate teaching and learning resources. Okutoyi, Kochung, Kabuka, Were & Oracha (2013) sought to establish support services and resources for inclusion of learners with HI in regular primary schools using a population of 121 learners with HI, 1584 hearing learners, 36 teachers and 18 head teachers. The findings revealed that support services and resources used were; SNE teachers (mean of 4.1), and in-service teacher training in SNE (65.6%). Another study by Pakata (2015) investigated factors influencing use of Sign Language in teaching and learning in public primary schools in Kiambu County, Kenya, with a population of 1 head teacher, 25 teachers and 265 learners. The researcher established that the teacher factor, the school environment, the curriculum, teaching / learning resources, influenced the use of Sign Language in teaching and learning in public primary schools. Still, the aforementioned studies are silent on the contribution of an intervention such as FPE towards provision of teaching and learning resources for HI learners.

Although there is literature covering challenges faced in inclusion of HI learners, particularly with regard to provision of teaching and learning resources, such challenges have not been focused upon under the lenses of interventions like FPE. Dagnew (2013) sought to identify the factors that affect the implementation of inclusive education in Bahir Dar town administration of Ethiopia with a sample of 4 principals, 60 classroom teachers, 4 special need education teachers, 31 students with learning barriers and 269 peers in the four schools. The study revealed that there were different factors that impede the implementation of inclusive education. Amalemba (2013) investigated the challenges facing implementation of inclusive education in public primary schools in Matete District, Lugari Sub County; Kenya. Inadequate training, lack of teaching

materials, inappropriate curriculum to a large extent decelerated implementation of inclusive education. Ngugi, Mumiukha, Fedha and Ndiga (2015) explored the advancement and challenges that have been met by FPE, an intervention employed by the Kenyan Government in 2003 to ensure that universal primary education is attained. Using documentary evidence, it was found that though access to primary education has been made cheaper, in terms of costs of other inputs incurred by households such as uniforms and other expenses, it is still costly for some parents from the poor families to access primary education. Equally, enrolments for some groups remain an issue and for certain groups among those who have access to primary education, attendance is irregular. Kalunda and Otanga (2015) investigated the challenges of free primary education in public primary schools since its inception in 2003 in Kenya in 9 public primary schools in Mombasa County, Coast province (Kenya). The main challenges the school administration faced were high pupil enrolment, inadequate teachers and instructional materials.

3. Research Methodology

3.1. Study Area

The study was conducted in Nyakach Sub County, one of the 8 Sub Counties making up Kisumu County. It is bound to the North by Nyando division in Nyando Sub County, to the South and West by Rachuonyo North Sub-County of Homa Bay County; Lake Victoria to the North West, and Kericho County to the East. It lies between latitude 0°, 22°S and 0°, 54°S of Equator and longitude 35°,21° E and 36°, 22° E. The divisions forming the Nyakach Sub County are Lower Nyakach, Upper Nyakach and West Nyakach divisions. Nyakach Sub County was chosen for this study because, while there was no special school for learners with HI, a number of primary schools have included these learners in their institutions. Yet academic performances of these learners in the inclusive primary schools where they learn remain low.

3.2. Research Design

The study adopted a cross-sectional survey design. This design was essential for collecting data needed for this study as it explores the status of a phenomenon at one point in time and helps in getting information from the sampled population which represented all relevant subgroups in the population in the study area (Gall, Gall and Borg, 2007). As a survey type of design, it facilitates the description of population characteristics and exploration of relationships, differences and comparisons between different categories of the population. Surveys are also important for studying populations under natural conditions (Trochim, 2004). This design was preferred for the present study since it enabled quantitative analysis to be corroborated by qualitative data obtained through the use of questionnaires and interview schedules

3.3. Target Population and Sample Size

3.3.1. Target Population

This study targeted eight inclusive primary schools in the area, comprising of 7 head teachers, 56 teachers, 191 learners and 4 Educational Assessment and Resource Centers (EARC) from the public primary inclusive schools for learners with hearing impairment in Nyakach Sub County. One inclusive school was however excluded from the study for the purposes of piloting. This makes it 258 as the accessible population.

3.3.2. Sample Size

This study adopted census method of sampling. As espoused by Oso and Onen (2011) and Israel (2013), for a small population, all the subjects targeted can be used as a sample for the study. The sample size of the study will therefore be 253 respondents, one inclusive school (1 head teacher and 4 teachers) being excluded for the purpose of pilot study. The sample distribution is as shown in Table 2.

Category	Target Population	Sample Size	Percent
Head Teachers	7	6	2.37
Teachers	56	52	20.55
EARC officers	4	4	1.58
Learners	191	191	75.49
Total	258	253	100

Table 2: Distribution of Population and Sample Size

3.4. Instrumentation

Three instruments were used in the study: questionnaires, interview guides and observation checklist to gather information and views of the respondents. The questionnaires presented items which relate to the study objectives (physical resources, teaching and learning materials, teachers, challenges, and strategies for addressing challenges). The respondents were requested to respond to the ratings (ranging from strongly agree to undecided). Observation checklist was used to obtain information regarding the actual happenings between learners and the school environment, so as to enable validation of

information obtained from the respondents. The researcher keenly observed how physical resources and learning materials are used to enhance academic performance of learners with HI. The interview guide was used to obtain information from EARC officers. This comprised of open ended questions to enable detailed response from the EARC officers. Mugenda and Mugenda (2010) notes that interview guides are suitable in guiding the interviewer to be responsive to individual differences and situational characteristics, are flexible and can yield higher responses.

3.4.1. Reliability and Validity

To ensure instrument reliability, the researcher selected one inclusive School in Nyakach Sub County, which was eliminated from the main study, for a pilot study. The head teacher and four (4) teachers were purposively selected for the pre test as espoused by Kombo & Tromp, (2006). Split-Half method was used on each objective to test instrument reliability. The study obtained coefficients of 0.83 for the first half and 0.78 for the second, thus accepting the instrument as reliable as suggested by Nunnally (1978).

To ensure instrument validity, the data collection questionnaire was appraised by the two experts in the field of social research, and one expert in the field of special needs education from Kenya Methodist University. The ratings of the experts were then compared in a session involving the three experts together with the researcher, one week before data collection commenced, and the necessary adjustments made.

3.5. Data Analysis

Quantitative data from structured questionnaires were coded and entered into the computer for computation of frequencies and percentages. The Statistical Package for Social Sciences version 21 (SPSS v 21) was used to produce frequency distribution and percentages. The qualitative data was analyzed using Thematic Analysis, according to Braun and Clarke, (2006). This involved categorizing generated interview data into themes in accordance with research objectives and reported in narrative form along with quantitative presentation.

4. Results and Interpretation

4.1. Contribution of Teaching and Learning Materials and Academic Performance OFHI Learners

The first objective of the study sought to establish the contribution of FPE on teaching and learning materials and how the same lead to academic performance of HI learners. The sampled respondents were asked to provide their opinions with regard to statements depicting elements of teaching and learning resources for learners with HI as: 1=Strongly Agree (SA); 2=Agree (A); 3=Disagree (D); 4=Strongly Disagree (SD); 5=Undecided (U). Table 3 presents distribution of respondents according to teaching and learning resources and academic performance of HI learners.

No	Item	1	2	3	4	5
1	Teaching and learning aids are sufficient for learners	1.8	22.8	50.9	22.8	00
2	Teaching and learning aids are not adequate for learners	21.1	38.6	19.3	19.3	00
3	There are enough funds to buy instructional materials for learners with HI	00	15.8	29.8	52.6	00

Table 3: Responses of Teaching and Learning Resources for Learners with HI

Table 3 illustrates that majority (73.7%) of the sampled teachers disagreed that FPE has aided sufficiency of teaching and learning resources for learners, while 24.6% of them agreed. Similarly, majority (59.7%) agreed that teaching and learning aids are not adequate for learners with HI. On the other hand, 38.6% of the sampled teachers disagreed that teaching and learning aids are not adequate for learners with HI.

In the same vein, as to whether there are enough funds to buy instructional materials for learners with HI, majority (82.4%) of the sampled teachers disagreed. At the same time, 15.8% of the respondents agreed that there are enough funds to buy instructional materials for learners with HI.

Interviews held with EARC officers revealed that funds provided through FPE are meant to support the education of all learners enrolled in public primary schools and not specific to any special need of any learner, like those with HI. One interviewee stated that:

Inclusive schools are not adequately funded to attain sufficiency in teaching and learning resources as required by learners with impairment especially the hard of hearing category (EARC 2).

This finding suggests that inclusivity in FPE in as far as teaching and learning resources are concerned has not been successful, with many obstacles hindering its implementation.

4.2. Challenges Facing Management of FPE and Academic Performance of HI Learners

The second objective of the study assessed the challenges facing management of FPE and how these lead to academic performance of HI learners. The sampled respondents were asked to provide their opinions with regard to statements

depicting challenges for managing FPE as: 1=Strongly Agree (SA); 2=Agree (A); 3=Disagree (D); 4=Strongly Disagree (SD); 5=Undecided (U). Table 4 presents distribution of respondents according to challenges faced in managing FPE.

No	Item	1	2	3	4	5
1	Teachers have been trained to handle learners with disabilities	17.5	52.6	21.1	7	00
2	In-service training programmes have been initiated by government to equip teachers with skills to handle learners with disabilities	5.3	43.9	28.1	19.3	1.8
3	Motivation of learners with HI has increased due to improved resources obtained by FPE	5.3	21.1	56.1	14	1.8
4	Academic performance of learners with HI has improved due to proper use of FPE in school	8.8	33.3	31.6	24.6	1.8
5	Enrolment of learners with HI has increased tremendously	7	26.3	31.6	33.3	1.8

Table 4: Distribution of Respondents According to Challenges in Managing FPE

The challenges that the study assessed were categorised as teacher level challenges; learner level challenges; academic performance challenges, and enrolment challenges. Table 4 illustrates that majority (70.1%) of the sampled respondents agreed that teachers have been trained to handle learners with disabilities, while 28.1% disagreed. This implies that teachers in the sampled inclusive primary schools have obtained adequate skills to handle learners with HI.

Table 4 also illustrates that the sampled teachers were almost divided (49.2% agreed; 47.4% disagreed) with regard to whether in-service training programmes have been initiated by government to equip teachers with skills to handle learners with disabilities. This tends to suggest that such training could be in place although majority of teachers who handle learners with HI might not have accessed it. The table (Table 4) also indicates that majority (70.1%) of the sampled teachers disagreed that motivation of learners with HI has increased due to improved resources obtained by FPE, while 26.4% agreed; some 1.8% of the respondents were, however, undecided. This seems to imply that FPE do not stimulate satisfaction upon learners with HI. Field visits among the sampled inclusive primary schools also revealed that some of these learners have to consult their desk mates so as to keep abreast with class work.

As to whether academic performance of learners with HI has improved due to proper use of FPE funds in school, Table 4 illustrates that majority (56.2%) of the sampled respondents disagreed while 42.1% agreed. At the same time, some 1.8% of the sampled teachers were undecided. This tends to suggest that performance of learners with HI has not been improved by the provision of FPE. Another challenge that was assessed regards to whether FPE has enhanced enrolment of learners with HI. Table 4 illustrates that majority (56.9%) of the sampled respondents disagreed that enrolment of learners with HI has increased tremendously while 33.3% agreed. Another 1.8% of the sampled teachers were undecided. This implies that, according to the teachers from the sampled inclusive schools, FPE has not catalysed enrolment of learners with HI in such schools much.

Interviews held with the sampled EARC officers also highlighted the fact that implementation of inclusive education under FPE has faced numerous challenges. Some of these challenges include adequate trained teachers, teaching resources, and physical facilities. One officer stated that:

Special teachers as well support resources like notes-takers and interpreters, among others are inadequate. In most cases one teacher attends to more than 20 learners who are hearing impaired (EARC 2).

This particular finding highlights the fact that FPE was rolled out without considering the availability of adequately trained special teachers and other support staff for SNE learners.

5. Discussions and Conclusion

5.1. Discussions

Table 3 shows findings that suggest that FPE has not aided sufficiency of teaching and learning resources for learners with HI; teaching and learning aids are not adequate for learners with HI; and there are not enough funds to buy instructional materials for learners with HI. These findings tend to imply that teaching and learning materials for learners with HI in inclusive primary schools under FPE are not adequate and cannot enhance academic achievement among learners with HI. This makes it difficult for learners with HI to coordinate teacher instruction with information provided in the text book. This therefore questions whether, under FPE programme, the teaching and learning materials in these inclusive set ups support modeling and imitation as espoused by Bandura (1986). Moreover, these findings conform to what Pakata (2015) established: that the school environment, the curriculum, and teaching / learning resources influenced the use of sign language in teaching and learning in public primary schools. In addition, Safder, et al (2012) established in a study in Pakistan that lack of sign language interpreters, and teachers' inability to use sign language during instruction seriously affected academic performance of learners with HI. It therefore emerges that FPE has not contributed much towards acquisition of teaching and learning materials for learners with HI.

In addition, findings in Table 4 suggest that teachers in inclusive public primary schools have obtained adequate skills to handle learners with HI. This concurs with a study by Mbaluka (2012), it was found that the teachers were more conversant

with various speech and language strategies of teaching the learners with hearing impairments. Despite of this, insufficiency of trained teachers with skills to handle learners with HI is also indicated in Table 4. This finding has caused motivation of the teachers handling learners with HI to decline, as found out by Efua (2014) in a study that investigated accessibility to inclusive education for children with disabilities in two selected districts in Ghana. Findings in Table 4 also suggest that performance of learners with HI has not been improved by the provision of FPE. This concurs with Mwanyuma (2016) who investigated the factors influencing academic achievement of deaf learners in Kilifi County: this was explained as due to lack of adequate Sign Language teachers, and teaching and learning resources.

5.2. Conclusion

Following the data analysis for the study, it is concluded that FPE has not contributed much towards acquisition of teaching and learning materials for learners with HI. The study also concludes that performance of learners with HI has not been improved by the provision of FPE. However, teachers handling learners with HI have adequate skills although they are few hence teacher to learners ratio is high. It is further concludes that, according to the teachers from the sampled inclusive schools, FPE has not catalysed enrolment of learners with HI in such schools much.

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