

Support Services And Resources In Regular Primary Schools With Hearing Impaired Learners In Kenya: A Case Study Of Kakamega County

Okutoyi Joel, Edwards Kochung, Eric K. Kabuka, Were Michael Charles & Adoyo Peter Oracha

ABSTRACT: - Information from Educational Assessment and Resource Centers (2010) in Kakamega County indicates that the number of learners with Hearing Impairment in regular primary schools increased since the inception of Free Primary Education (FPE). For example in 2003 there were 51 learners with HI, 2004 (65), 2005 (73), 2006 (90), 2007 (102), 2008 (133), 2009 (161), and in 2010 there were 206 learners with hearing impairment. There were 121 learners with HI in class three and four. The schools face a number of challenges; among them; communication barrier, negative attitude, inadequate teaching-learning materials and equipment, and inadequate personnel. The purpose of this study was to establish Support services and resources for inclusion of learners with HI in regular primary schools. Objectives of the study were to: establish support services and resources available in regular primary schools to help learners with hearing impairment cope. The study adopted descriptive survey design. The population consisted of 121 learners with HI, 1584 hearing learners, 36 teachers and 18 head teachers. Simple random sampling was used to select 480 hearing learners while saturated sampling was used to select 109 learners with HI, 32 teachers and 16 head teachers. Questionnaires and interview schedules were used for data collection. A pilot study was conducted on ten percent of population to determine reliability of instruments using test-retest method, where 12 learners with HI, 144 hearing learners, 4 class teachers and 2 head teachers were selected. The reliability coefficient for hearing learners questionnaire was 0.72, learners with HI questionnaire was 0.81, teachers questionnaire was 0.74. Content validity of the instruments was ascertained by experts from both Special Needs Education and Educational Psychology departments of Maseno University. Descriptive statistics such as frequency counts, percentages and mean were used to analyze quantitative data. Qualitative data was organized, put into various categories and reported in an ongoing process as themes and sub-themes emerged. 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%). It was recommended that schools to employ personnel to teach learners with Hearing Impairment, and put up resource centers. The study is significant because its findings may help teachers, learners with HI, hearing learners, school administration and other education stakeholders to understand support services and resources needed by learners with HI.

Key words: - support services, resources, hearing learners, learners with Hearing Impairment (HI), regular primary schools, inclusion, resource personnel and teaching-learning materials and equipment.

Background to the Study

Education of learners with Hearing Impairment (HI) in regular primary schools has its origin in international documents, which support inclusion of all learners in regular schools. Such documents include the United Nations Human Rights to Education (1948), the United Nations Convention on the Rights of the Child (1989), the UN Standard Rules on Equalization of Opportunities for Persons with Disabilities (UNESCO) (1993), the Salamanca Statement and Framework for Action on Special Needs Education (1994) and the World Education Forum (Education For All, EFA) (2000) in Dakar, Senegal (Save the Children, 2002). Kyle (2009) observes that regular primary schools with learners who are HI in the United States of America (USA) face a number of challenges, among them: communication barrier between learners with HI and hearing teachers and learners both in class and co-curricular activities; negative attitude towards learners with HI; and inadequate teaching-learning materials and equipment. Hearing teachers struggle, and sometimes get frustrated trying to communicate with learners with HI who have limited communication abilities in spoken language (Kyle, 2009; Vignare, 2007). Sharma (2005), also points out regular primary schools face challenges such as inadequately trained and inexperienced teachers to teach learners with HI. In addition, inadequate teaching-learning equipment and materials for learners with HI such as hearing aids, and negative attitude towards learners with HI. In Tanzania, several schools which are involved in inclusive education programs for learners with HI experience a number of challenges. Such as inadequate teaching-learning materials and equipment, inadequate personnel to handle learners with HI and communication

barrier between hearing learners and learners with HI in class and co-curricular activities (Krohn, 2008).

1.1 Resource Personnel

Vignare (2007) suggests that the use of note-takers, voice-to-print captions and/or interpreters has made learners with HI be educated in inclusive schools in the USA. Schneider (2002), suggests that the inclusion of learners with HI needs support personnel such as interpreters, note-takers, teacher aids, deaf education teachers, and /or consultants. According to Save the Children (2006), provision of additional support in the form of teacher aides, audiologists and sign-language interpreters in regular classes are important so as to ensure that inclusive schools accept their whole – school responsibility for all children in their care. It further suggests that promotion of multi-sectoral collaboration was important. Co-operation between relevant personnel from other sectors such as educational audiologists, paramedics, social-workers, psychologists and psychiatrists helped to get rich source of expertise in educating learners with HI, where inadequate staff needs for learners with HI was addressed. In a similar study, Russel-Fox (2001) observes that for an effective inclusion process, a professional relationship was to be developed among audiologists, hearing specialists, sign language interpreters, and speech and language therapists. In addition, communication lines were to be kept open between the professionals. Further, deaf adults, who were deaf role models, be involved as sign language instructors in inclusive settings as they were often the best teachers in sign language. Learners with HI and hearing learners are encouraged to use sign language for social interaction and for academic purposes. A study carried out by Itinerant

Connection (2010), on the use of note-takers in inclusive classes with learners who are HI, it was found that classes with learners who are HI had to have note-takers to assist them copy notes as the teacher dictated. The role of a note-taker involves taking notes from the board, during group-discussion, and during sessions of video shows. When there were no notes to copy, a note-taker helped learners with HI to edit notes, make copies of the notes, organize folders, read assignment for learners with HI, and to prepare for the next class. A study carried out in Vietnam on deaf role-models revealed that deaf role models were used to teach their deaf colleagues. They consisted of local deaf people, who are masters of Vietnamese Sign Language (VSL), were invited to help deaf children; teachers and parents learn sign language. Local Deaf people who sign perfectly are engaged as mentors to help young deaf children learn VSL through play and interaction (Reilly and Nguyen, 2004). In Hong Kong, the Otic Foundation (2007) indicated that while educating learners with HI in inclusive schools, the Hospital Authority provided 20 Ear, Nose and Throat specialist clinics for the community and learners with HI in neighborhood schools. The medical practitioners helped in carrying out routine audiological assessments for placement of learners with HI. Such medical practitioners included physicians, audiologists, nurses and other professionals who provided support services for learners with HI in regular schools. In Canada, a study by Sharilyn (2011) indicated that there was need to provide personal support through note-takers, and interpreters to assist in note-taking and sign-language interpretation respectively. Nevertheless, provision of itinerant staff in schools without SNE teachers was also important, where specialized teachers in sign language move from one school to another to assist learners with HI learn in regular schools. In Nigeria, Fuandai (2009) noted the following strategies to be used for effective learning of learners with HI; multi-disciplinary, collaborative effort and team-work between parents and the school in identifying and catering for the needs of learners with HI. There was need to train more teachers of special needs education in order to work with learners who were HI in regular primary schools. In Kenya, UNESCO (2006) observed that the government agreement with the Kenya Institute of Special Education (KISE) had led to in-service training of regular teachers in handling learners with special needs through the distance learning programme. In-service teacher education in special/inclusive education was a key support service in making inclusive education of learners with HI a reality. In Western province (Kenya), regular teachers were supported through in-service training in Kenya Sign Language to be able to teach the Deaf. Emphasizing on the importance of teacher-training, orientation and development, Japan International Cooperation Agency (JICA) (2002), points out that pre-service training introduces and inducts the teacher trainee in the teaching profession while in-service training makes him more perfect (Muka,2009). Perraton, Creed, and Robinson (2002), further assert that in-service teacher training improves teachers' general education background and provides knowledge and skills linked to the ever changing needs of a dynamic society. This is in agreement with the Republic of Kenya (Gachathi report, 1976) on the National Committee on Educational Objectives and Policies, the Master Plan on

Education and Training 1988-2010, (Republic of Kenya, 1994) as well as in the Republic of Kenya (Koech Report, 1999) on Totally Integrated Quality Education and Training, TIQET which highlights the need for those already trained to be given a chance to continue with learning and training. In Kenya, a study by Adoyo (2007) recommends that personnel involved in teaching in an inclusive setting with learners who are HI be appropriately trained and bilingual in spoken (written) language and sign language. He further recommends that children in an inclusive setting should have access to deaf-role models, in order to teach indigenous sign language to learners with HI and school stakeholders. Deaf role models should be employed in the school to support the deaf child and to facilitate communication between the HI learner, and regular school stakeholders. Nevertheless, he recommends an interpreter/teachers of sign-language should be made to visit regular schools on regular basis to offer interpretation services. Reilly and Nguyen (2004), and Adoyo (2007), emphasized on the need to have deaf-role models in inclusive schools. Save the Children (2006), Vignare (2007), Schneider (2002) and Fuandai (2009), focused on the need for multidisciplinary and collaborative effort in schools with HI. Itinerant Connection (2010), focused on role of note-takers. UNESCO (2006), Muka (2010) and Perraton *et al.* (2002), emphasized on importance of in-service teacher training. However, these studies did not focus on holistic human personnel for learners with HI in regular primary schools. The current study aimed at establishing human personnel available and used in regular primary schools with HI learners in Kakamega County.

1.2 Teaching-Learning Materials and Equipment for Learners with HI in Regular Schools

Provision of teaching-learning materials and equipment is important. In the U.S.A, Kyle (2009), observes that the use of Formulated Module, (FM) system has made effective learning of learners with HI in deaf schools possible. FM systems allows the educator to wear a microphone that would amplify their voice through speakers placed in the classroom. In Hong Kong, the Otic Foundation (2007), observed that education department provided audiological equipment for the schools under the code of Aid for integrated HI schools. In Singapore, the Ministry of Education, (MOE, 2010), had carried out a pilot project in educating learners with HI in regular schools, where teachers wear a small microphone which was linked to an FM transmitter device. The device lowered the sign to noise ratio so that the pupils with HI could distinguish the teacher's voice from environmental interference. A number of support services and resources had been put in place in China that enabled regular teachers and hearing learners cope with learners who are HI. Four teaching resource centers that were HI compliant had been established at Institute of Education. These resource centres provided teaching-learning materials, equipment and skills on inclusive education practices for learners with HI such as learning of sign language (Save the Children, 2008). Ertmer (2002) suggested that digital hearing aids, cochlear implants, newborn screening and a well-functioning habilitative intervention made it possible for a person who is hard of hearing to be mainstreamed into general education classroom. The mainstreamed learner was able to be

among age appropriate peers and experiences in a general education classroom setting, while intervention specialists accommodated individuals with HI. Sharilyn (2011) suggested for inclusion of learners with HI to succeed, availing technological devices such as an amplification systems and captioned services was important so as to boost hearing level of learners with HI. Leve (2009) advocates for several factors for education of learners with HI in regular schools. Among them; availability of instructional materials, availability and utilization of audio-visual aids with regard to classroom management and organization such as charts and pictures to enhance faster conceptualization of what was being taught. He further suggested that support services that were important to learners with HI include sign language interpreting by sign language interpreters. This is meant to bridge communication between HI and hearing learners/teachers; note-taking services by volunteer note-takers such as a classmate of HI, or a professional note-taker who was paid to assist learners with HI in writing notes as teacher dictates; tutorial services by a peer tutor or SNE teacher in teaching learner with HI. He further suggested the use of assistive listening devices such as hearing aids, FM devices (frequency modulated radio waves), infra-red devices, induction loop devices, and hard wired devices, which could assist boost hearing level of learners with HI. In a similar study, Keller (2005), suggested use of chalkboard, captioned films, videos, and laser disks in classes with HI learners while teaching. In Nigeria, Fuandai (2009) observes that provision of hearing aids and earphones to hard of hearing learners in regular classrooms is one of the strategies of coping with HI learners. Russel-Fox (2001) observed that for an effective inclusion process, visual and tactile aids be used as much as possible in the classroom. Language in-group activities be encouraged by allowing time for children with HI to start and finish communication. In Kenya, MOEST (2003) set up a taskforce to ascertain the challenges facing the Government in providing education to children with disabilities and to ensure that children with disabilities equally benefit from FPE. The taskforce recommended the following with regard to support services for deaf learners: there should be massive training and in-servicing of teachers in SNE. Learners with special needs be included in all the activities of the Ministry of Education and that the Ministry creates awareness and sensitizes the public on SNE. This would ensure learners with disabilities including deaf are provided with support services from local level to National level. In a study carried out on factors influencing performance of deaf students in mathematics in Kenya, Maina (2009) observed that children who were Deaf required educational resources such as individual hearing aids, ear moulds, speech-training units and note-taking devices for them to learn effectively. The Kenya National Commission on Human Rights, KNCHR (2007), suggested two strategies to the government of Kenya in educating children with disabilities in regular primary schools: the Ministry of Education, in collaboration with stakeholders, undertake a comprehensive review of the Education Act and enactment of a Special Needs policy to make the right to education exercisable by children with disabilities; and the FPE programme to be re-evaluated to meet the needs of children with Disabilities. The KNCHR (2007) further suggested that the government increases resource

allocation to schools for children with disabilities in order to meet their special needs such as hiring of support staff and teacher aids as well as provision of necessary equipment and materials. Resources such as adequate and trained teachers should be prioritized, and concept of inclusive education within the Kenyan education system be evaluated. In addition, focus should be on educating the child in the least restrictive environment and in the best interest of the child. The commission also called for the abolition of mean score ranking since it is used to deny children with disabilities admission to regular schools. The Kenya Institute of Education (KIE) had to first track the development and operationalisation of a specialized curriculum to cover all subjects for children with disabilities. Monitoring implementation of this curriculum as well as teaching methods was to form a core component of the Ministry of Education's Division of Quality Assurance and Standards. The Leonard Cheshire Disability (2002) implemented an inclusive education intervention covering five primary schools and communities in Oriang in Rachuonyo district. Prior to the Oriang Cheshire Inclusive Education Project (OCIEP), needs assessment revealed that only a handful of children with disabilities from neighbouring districts resided at Oriang Cheshire Home and attended a nearby primary school. The needs of these children were not met in an environment where, among other factors, teachers lacked the skills to support children with special needs. Peers were not prepared to work with children who looked different because of their special needs; lack of adaptive aids for children with special needs. General inadequate learning materials to enhance quality education for all the children. Children with disabilities from Oriang community were not accessing adequate educational interventions (Leonard Cheshire Disability, 2002). A study by Kyle (2009), focused on use of FM system in deaf schools; Otic Foundation (2007), focused on availing audiological equipment to schools with HI; studies by Ertmer (2002), focused on use of current technology such as digital hearing aids and cochlear implants in mainstreaming learners with HI. MOEST (2003), emphasized on recommendations on FPE in making learners with disabilities learn. Studies by KNCHR (2007) focused on recommendations to the government in making learners with disabilities learn in regular schools. However, findings by above authors did not focus on learning materials and equipment for learners with HI in regular primary schools. Leonard Cheshire Disability (2002), focused on challenges schools with learners with disabilities faced in Oriang. However, the study did not address how the schools coped with challenges due to inadequate support services and resources for learners with hearing impairment. In Kakamega County, there were 133 learners with HI in 2008, 161 learners in 2009, and 206 learners with HI in 2010. The increase in the number of learners with HI in Kakamega County was high compared to other counties. For example, Vihiga County had 146 learners with HI, Busia had 155 learners with HI, and Bungoma had 170 learners with HI in the year 2010. There were 121 learners with HI in class 3 and 4 compared to 25 learners with HI in class two, while in class five there were 30 learners with HI in the County. Schools with these learners faced challenges related to support services and resources such as inadequate learning materials and equipment for the

learners with HI, inadequate trained personnel to handle learners with HI in the regular schools. Despite the challenges, regular primary schools still enrolled learners with HI. This necessitated a study to examine the coping strategies used in regular primary schools in coping with learners who are HI in Kakamega County, Kenya.

Research Methodology

The study adopted a descriptive survey design. The study was conducted in Kakamega County, Kenya. The study population comprised of 1584 hearing learners, 121 learners with hearing impairment, 36 teachers, and 18 head teachers. Simple random sampling technique was used to select a sample of 480 hearing pupils, while saturated sampling was used to select 109 learners with HI, 32 class teachers and 16 head teachers. A questionnaire and interview schedules were used to collect data on support services and resources on inclusion of learners with hearing impairment in regular primary schools. The researcher scored the items on support services and resources on a 5-points Likert type scale. A criterion based on the responses obtained from the 5-points Likert type scale was developed. In scoring the positively stated items, Strongly Agree (SA) earned 5 points, Agree (A) 4 points, Uncertain (U) 3 points, Disagree (D) 2 points and Strongly Disagree (SD) 1 point. The scoring was reversed for negative statements. Content validity of the questionnaire was established. Reliability of the research instruments was ascertained through a pilot

study of 10% of the study population through test-retest method. The responses from the respondents from the questionnaire were analyzed using mean, while responses from interview schedule were analyzed using frequency counts and percentages. The perspectives on classroom communication process were categorized as most stated, neutral and least stated. A perspective of 3.0 and below was taken to be least (negative perception), 3.0 were neutral and that of 3.0 and above was most stated (positive perception).

Results and Discussions

Support Services and Resources Available in Regular Primary Schools to Help Learners with HI Cope

In this section, closed-ended questionnaire items with likert's five point format was used to establish support services and resources for learners with HI used in the school. The data was analyzed using frequency counts, percentages and mean. The support services and resources were sub-divided into: use of resource personnel, use of support services, use of visual aids in classroom, use of teaching-learning resources in classroom, acquisition of hearing aids and in-service teacher training in SNE. Respondents were hearing learners, learners with HI and teachers. The results are presented as follows:

Availability and Use of Resource Personnel

Table 1: Availability and Use of Resource Personnel (HL, n=480), (LHI, n=109), (teachers, n=32)

Resource/Respondent	Mean HL	Rating LHI	Teachers
KSL interpreters	1.52	1.92	1.62
Note-takers	1.01	1.12	1.17
Deaf-role models	2.20	2.28	2.06
Teacher aides	1.96	1.72	1.81
SNE teachers	4.25	4.00	4.06

Key: minimum possible score - 1, maximum possible score - 5, HL- Hearing Learners, LHI- Learners with Hearing Impairment.

Table 1 shows different resource personnel used in regular primary schools with HI learners. Findings of the study indicated that most of the resource personnel required to make learners with HI learn with the hearing learners was not available. Use of KSL interpreters was indicated by hearing learners (1.52), learners with HI (1.92) and teachers (1.62) respectively. The use of note-takers was indicated by few hearing learners (1.01), learners with HI (1.12) and teachers (1.17); deaf-role models were indicated by hearing learners (2.20), learners with HI (2.28) and teachers (2.06) respectively. While use of special education teachers was indicated by hearing learners (4.25), learners

with HI (4.00), and teachers (4.06). According to these findings, special education teachers were most used, followed by deaf role-models and support personnel not available included: KSL interpreters, note-takers and teacher aides. Findings of this study differed from previous researchers, who reported that regular schools with learners who are HI should be provided with additional support in terms of teacher aides, audiologists, sign-language interpreters so that regular schools accept their whole-school responsibility for all learners (Save the Children, 2006; Vignare, 2007; Schneider, 2007). Furthermore, findings of this study differed from findings by

Reilly and Nguyen (2004); and Russel-Fox (2001), who observed that deaf role models be invited in regular schools with HI learners to assist the learners, teachers and parents learn sign language. According to this study only few respondents stated use of deaf role models. This difference leaves a gap that makes it necessary for a further research to be carried out to assess the availability of support personnel in regular primary schools with learners who are HI. Findings of this study indicated that most respondents indicated special needs education teachers were available in regular primary schools with learners who are HI as

stated by mean rates as follows; hearing learners (4.25), learners with HI (4.00) and teachers (4.06) respectively. Findings of this study concur with previous researchers who observed the need for multi-disciplinary and collaborative effort and team-work between regular teachers and special/inclusive education teachers, audiologists, hearing specialists, sign language interpreters, and speech and language therapists so as to be able to cater for the needs of the HI child in the school (Fuandai, 2009; Russel-Fox, 2001).

Availability and Use of Support Services

Table 2: Availability and Use of Support Services (HL, n=480), (LHI, n=109), (teachers, n=32)

Support Services	Mean Scores		Teachers
	HL	LHI	
Speech and language training	2.07	2.28	2.16
Audiological assessment	3.10	3.34	3.50
Kenya Sign Language Interpretation	1.42	1.70	1.60
Note-taking	1.00	1.10	1.12
Individualized coaching	3.90	3.80	3.46

Key: HL- Hearing Learners, LHI- Learners with Hearing Impairment, **Minimum possible score-** 1 point, **Maximum possible score-** 5 points.

Table 2 shows different support services available and used in regular primary schools as stated by hearing learners, learners with HI and teachers. Findings of this study revealed that the most used support service was individualized coaching of learners with HI by special education teachers as indicated by hearing learners (3.90), learners with HI (3.80) and teachers (3.46). This was followed by audiological assessment according to hearing learners (3.10), learners with HI (3.34) and teachers (3.50). This was followed by speech and language training as indicated by hearing learners (2.07), learners with HI (2.28), and teachers (2.16). Support services that were not available in the regular schools included; Kenya sign language interpretation as stated by hearing learners (1.42), learners with HI (1.70) and teachers (1.60), and note-taking as stated by hearing learners (1.00), learners with HI (1.10) and teachers (1.12). According to findings of this study, the most used support service was individualized coaching of learners with HI, while support services that were not available included; Kenya sign language interpretation and note-taking. Findings of this study differed from findings by Reilly and Nguyen (2004), who observed that education of learners with HI had succeeded in regular schools due to regular audiological assessment of hearing loss, enhanced intervention and placement strategies. In this study, availability and use of audiological assessment was indicated by most respondents. Use of

audiological assessment helps in screening level of hearing loss and enhances placement strategies. Similarly, Save the Children (2006) suggested that provision of support services such as sign language interpretation could enhance learning of learners with HI in regular schools. However, in this study there was no KSL interpretation in classes with HI. KSL interpretation was not available due to lack of KSL interpreters. Findings of this study differed with previous researchers; this leaves a gap that necessitates a further study be carried out to assess availability of support services for learners with HI in regular primary schools.

Availability and Use of Visual aids

Table 3: Availability and Use of Visual aids (HL, n=480), (LHI, n=109), (teachers, n=32)

Visual aids	HL f (%)	LHI f (%)	Teachers f (%)
Charts	206 (42.9)	71 (68.8)	17 (53.1)
Pictures	137 (28.5)	16 (14.7)	8 (25.0)
Real objects	78 (16.3)	11 (10.1)	4 (12.5)
Teaching models	36 (7.5)	7 (6.4)	3 (9.4)
Total	480 (100.0)	109 (100.0)	32 (100.0)

Key: f-frequency, %-percentage, **HL**- hearing learners, **LHI**- Learners with Hearing Impairment.

According to table 3, 206 (42.9%) hearing learners, 71 (68.8%) learners with HI and 17 (53.1%) teachers indicated that charts were used in classroom during teaching. While 137 (28.5%) hearing learners, 16 (14.7%) learners with HI and 8 (25.0%) teachers respectively indicated use of pictures. This was followed by a total of 78 (16.3%) hearing learners, 11 (10.1%) learners with HI and 4 (12.1%) teachers respectively who indicated use of real objects and 36 (7.5%) hearing learners, 7 (6.4%) learners with HI and 3 (9.4%) teachers stated use of teaching models. This study indicated that the most used visual aids in classes with HI were charts, followed by pictures, real objects and least

used was teaching models. Findings of this study concur with findings by other researchers who observed that while teaching learners with HI in regular schools, audio-visual aids are used because learners with HI use spatial-visual channel in getting information. Therefore, use of visual aids made learners get faster what was being taught. Secondly, learners with HI are not able to learn vocabulary and concepts vicariously, but may have mental picture of a concept without knowing the vocabulary (Leve, 2009; Siple, 2000 and Itinerant Connection, 2010). Audio-visual aids make learners with HI conceptualize what is being taught faster through visual channel.

Availability and Use of Teaching-Learning Resources in classroom

Table 4: Availability and Use of Teaching-Learning Resources in Classroom (HL, n=480), (LHI, n=109), (Teachers= 32)

Resource/respondents	HL f (%)	LHI f (%)	Teachers f (%)
KSL text books	26 (5.4)	13(11.9)	3 (9.4)
Hearing aids	48 (10.0)	12 (11.0)	12 (37.5)
Resource room with HI compliance	6 (1.2)	0 (0.0)	1 (3.1)
Teaching-learning materials such text books, pencils, exercise books	361 (75.2)	84 (77.1)	23 (71.9)
Not available	39 (8.1)	*	*
Total	480 (100.0)	109 (100.0)	32 (100.0)

f- Frequency, %- percentage, *- Not Applicable, **HL**- hearing learners, **LHI**- Learners with Hearing Impairment.

Table 4 shows availability and use of various resources for learners with HI as stated by hearing learners, learners with HI and teachers respectively. Findings of this study indicated that most available resources included; teaching learning materials as stated by 75.2% of hearing learners, 77.1% of learners with HI and 71.9% of teachers respectively. Followed by hearing aids as indicated by 10.0% hearing learners, 11.0% learners with HI and 37.5% teachers respectively; followed by KSL text books as indicated by 5.4% hearing learners, 11.9% learners with HI and 9.4% teachers respectively; resource room with HI compliance was indicated by 1.2% hearing learners, 0%

learners with HI and 0% teachers. While a few (8.1%) of hearing learners stated no resources were available in regular schools for HI. According to this study, the most available resource was teaching-learning materials, while the least available was resource room with HI compliance. Findings of this study differed from findings by Reilly and Nguyen (2004), Fuandai (2009), Maina (2009), who observed that for education of learners with HI to succeed in regular schools, the learners had to be provided with hearing aids to boost their hearing level. In this study, the use of hearing aids was indicated by a few hearing learners (10.0%), learners with HI (11.0%), and teachers (37.5%).

Hearing aids boosted hearing level of learners with HI. Findings of this study differed with previous researchers because of inability of schools and parents to provide the hearing aids. Availability of resource room with HI compliance was indicated by very few (1.2%) hearing learners. Findings of this study differed with Save the

Children's (2008) findings, which observed that provision of resource centres in regular schools with HI learners provided teaching-learning materials, equipment and skills on inclusive education practices for learners with HI, such as learning sign language.

Acquisition of Hearing aids

Table 5: Acquisition of Hearing aids (LHI, n-109), (Teachers, n= 32)

Method of Acquisition	LHI f (%)	Teachers f (%)
Provision by parents	62 (56.9)	20 (62.5)
Provision by school using FPE funds	41 (37.6)	9 (28.1)
Donors and Other voluntary organizations	6 (5.5)	3 (9.4)
Total	109 (100.0)	32 (100.0)

f- Frequency, %- percentage, LHI- Learners with Hearing Impairment.

Table 5 shows different methods of acquiring hearing aids for learners with HI in regular schools. Findings of this study established that hearing aids were mostly provided by parents as stated by 56.9% learners with HI and 62.5% teachers. This was followed by schools using Free Primary Education (FPE) funds as indicated by 37.6% learners with HI and 28.1% teachers. The least used method of acquiring hearing aids was provision by donors and other voluntary organizations such as churches which as indicated by 5.5% learners with HI and 9.4% teachers. Findings of this study concur with Fuandai's (2009) findings, who suggested learners with HI in regular schools should be provided with hearing aids to boost their hearing level. Schools should ensure learners with HI are provided with hearing aids in order to boost their hearing level.

In-service Teacher-training in SNE

Table 6: In-service Teacher-training in SNE (n=32)

Rating	F	%
Strongly Agree	8	25.0
Agree	13	40.6
Undecided	2	6.3
Disagree	5	15.6
Strongly Disagree	4	12.5
Total	32	100.0

Key: f – frequency, %- percentage.

Table 6 shows different ratings on in-service teacher training in SNE as indicated by teachers. A total of 25% of teachers strongly agreed, 40.6% disagreed, 6.3% were undecided, 15.6% disagreed and 12.5% strongly disagreed. Findings of the study indicated most teachers (65.6% who strongly agreed and agreed) indicated they had undergone in-service teacher training in special needs education. This indicated a positive perception. Findings of this study concur with findings by previous researchers who observed that regular teachers should be inserviced in SNE to enable

them teach learners with disabilities together with regular learners (UNESCO, 2006; Fuandai, 2009; Kenya MOEST Taskforce Report, 2003; Muka, 2009). In-service teacher training in SNE enables teachers to be equipped with knowledge and skills to teach learners with special needs. From the interview schedule, head teachers interviewed revealed that schools acquired hearing aids mostly through: provision by parents 10 (62.5%), followed by using free primary education funds 5 (31.3%). The least used method was provision by donors 2 (12.5%). While, 0% of head teachers stated there were KSL interpreters in regular schools. From views of head teachers, about 10% of teachers had undergone in-service training in special needs education.

Conclusions and Recommendations

The study established that:

- i) Key resource personnel was special needs education teachers (4.1), deaf role models were inadequate (2.51); while KSL interpreters, note-takers, teacher aides were not available.
- ii) Key support services used were individualized coaching (3.72) and audiological assessment (3.15); KSL interpretation (1.57) and note-taking (1.07) were not available in regular schools.
- iii) Teaching-learning materials were used in schools as indicated by 74.7% of respondents; KSL text books were inadequate as indicated by 8.9% of respondents and resource room with HI compliance was used as indicated by 1.45% of respondents.
- iv) Hearing aids were acquired mostly through provision by parents as indicated by 59.7% of respondents, while least method of acquisition was provision by donors and voluntary organizations as indicated by 7.45%.
- v) Teachers had undergone in-service training in special needs education (65.6%).

It was recommended that: Regular schools with learners with HI should promote in-service teacher training and employ support staff such as KSL interpreters, note-takers

and teacher aides in regular schools with HI learners; built and equip a resource room with HI compliance for learners with HI; regular schools with HI learners be provided with support services such as speech and language training, audiological assessment, KSL interpretation and note-taking.

Acknowledgments

We sincerely thank Dr. Simatwa, Ms Everlyne Nyokabi, Prof. John Agak, Dr. Ayieko Yalo, Dr. Pamela Oloo and Ms Grace Mumo, for their expertise, guidance, assistance, advice and support, which made this work to be what it is today. Thanks to Maseno University through school of graduate studies for supporting the research through a grant.

References

- [1]. Adoyo, P.O. (2007). "Educating Children in Inclusive Setting: Challenges and Considerations". *International Journal of Deaf Studies*; 22 (1), 51-58.
- [2]. Educational Assessment and Resource Centres' (EARC) (2010). *Unpublished Report on Learners with Special Needs*. Kakamega County.
- [3]. EFA (2000). Education For All
- [4]. Ertmer, L. (2002). Implications of Mainstreaming Learners with Hearing Impairment. *Australian Journal of Psychology*, 46 (1), 53-57.
- [5]. Fuandai, C. (2009). Catering for Children with Special Needs in the Regular Classroom: *Edo Journal of Counseling*, 2 (1), 112-119.
- [6]. Itinerant Connection (2010). Strategies for Teaching Learners with Hearing Impairment. *Disability Studies Quarterly*, 15(3),
- [7]. Kenya National Commission on Human Rights (2007). *Objects of Pity or Individuals with Rights: The Right to Education for Children with Disabilities*. Nairobi: Longman publishers.
- [8]. Krohn, N. (2008). *The Development of Inclusive Education in Tanzanian Primary School*. Unpublished Master's Thesis in Special Needs Education. University of Dodoma.
- [9]. Kyle, W. (2009). Inclusive Education for Hearing Impaired. *Education Core Studies Journal*, 53 (3); 223-226.
- [10]. Leonard Cheshire Disability (2002). *Oriang Cheshire Inclusive Education: Baseline Survey*. Kisumu: Lake Publishers & Enterprise Limited.
- [11]. Leve, J. (2009). *Use of visual Aids in classes with Learners with Hearing Impairment*. Retrieved from <http://www.visualaids/hi.legacy.vahi.110.htm> on march 12, 2010 at 12 pm.
- [12]. Maina, E.N., (2009). Unpublished Master's Thesis Presentation on *Factors Influencing Performance of Deaf Students in Mathematics in Kenya Certificate of Secondary Education*. Maseno University, Kenya.
- [13]. Ministry of Education, Science and Technology (2003). Report on Special Needs Education: Appraisal Exercise (Kochung's report): Nairobi, Kenya: MOEST
- [14]. Ministry of Education, MOE (2010). Education of Learners with Hearing Impairment in Singapore. *International Journal of Special Education*, 25 (2), 112-118.
- [15]. Muka, S. (2009). *Assessment of Special Units in Education of Children with Special Needs in Kakamega district*. Unpublished Master's Thesis. Masinde Muliro University, Kenya.
- [16]. Otic Foundation (2007). *The Needs of Hearing Impaired People in HongKong*. Retrieved from <http://www.oticfoundation.org.hk/en/information/information.htm> on September 20, 2010 at 12pm.
- [17]. Ozcebe, E, Sevine, S. & Belgin, E (2005). The Ages of Suspicion, Identification, Amplification, and Intervention in Children with Hearing Loss. *International Journal of Pediatric Otorhinolaryngology* 69, 1081-1087.
- [18]. Perraton, H., Creed, D. & Robinson, F. (2002). Teacher Education Guidelines: Using Open Distance Learning. Paris: UNESCO.
- [19]. Reilly C., and Nguyen, C. (2004). *Inclusive Education for Hearing Impaired and Deaf Children in Vietnam*. Retrieved from www.usaid.gov/our-work/humanitarian.../Vietnam_psb.pdf on October 1, 2011.
- [20]. Russel-Fox, J. (2001). Together is Better: Specific tips on How to Include Children with Various Types of Disabilities. Annual Editions, *Educating Exceptional Children*, (1), 337- 39.
- [21]. Save the Children (2006). *Towards Responsive Schools, for a more detailed Analysis of the Links between Education Quality and being Responsive to Children's Needs*.
- [22]. Save the Children UK (2008): *Making Schools Inclusive: how change can happen*. Retrieved from <http://www.Making-school-inclusive>. PDF (application/... on October 15, 2011.
- [23]. Schneider, E.(2002). Support Personnel for Inclusion of Learners with Hearing Impairment. Retrieved from http://www.essortment.com/all/earlyeducation_rzde on October 25, 2010 at 9.25 p.m.

- [24]. Sharma, U. (2005). Integrated Education in India: Challenges and Prospects. *Disability Studies Quarterly*, 25 (1), 60-71.
- [25]. Sharilyn, V. (2011). Inclusion Strategies for Teaching Learners with Hearing Impairment. Retrieved from <http://www.inclusionstrategies.107htm> on January 25, 2012 at 1 p.m.
- [26]. Smith, R. (2010). *Observing Inclusive Education in Italy*. Retrieved from <http://www.miusa.org/ncde/stories/smith/?searchterm=none> on October 11, 2010 at 2.30p.m.
- [27]. United Nations Educational, Scientific and Cultural Organization (UNESCO), (1994). World Conference on Special Needs Education, Salamanca: Spain. Paris
- [28]. United Nations (1993). *Standard Rules on the Equalization of Opportunities for Persons With Disabilities*. Paris: UN
- [29]. UNESCO (2006). *Inclusive Education: Promoting Dialogue, Building Partnerships, and Developing a Tailored Implementation Strategy*. Retrieved from <http://www.unesco.org/education/EFAWG2009/Session1/IBE.pdf> October 19, 2010 at 8p.m.
- [30]. Vignare, K. (2007). Access to Communication for Deaf, Hard-of- Hearing and ESL Students in Blended Learning Courses. Retrieved from www.irrod.org/index.php/irrdl/article/download/423/948 on October 1, 2011.