

Educational Resources and Inclusion of Hearing-Impaired Learners in Primary Schools in East Karachuonyo Division Homabay County-Kenya

Fredrick Odhiambo Ojijo

Faculty of Higher Degrees and Research, Kampala International University of Kampala, Uganda

ABSTRACT

The study on educational resources and inclusion of learners with hearing impairments in East Karachuonyo Division, Homabay County, was carried out to find out the level of educational resources in the inclusive schools in East Karachuonyo Division, Kenya. The objectives of the study were to determine the profile of respondents, determine the level of educational resources, determine the level of inclusion, and determine whether there is a significant relationship between educational resources and the inclusion of hearing-impaired learners in East Karachuonyo Division, Rachuonyo North District, Tt. Mabay County. The descriptive correlation survey method was adopted, where two variables or correlations were compared based on the sample size. Both quantitative and qualitative research methods were used to perform statistical analysis and produce results. However, the findings of the study revealed that females who teach hearing-impaired learners slightly outnumber their male counterparts at 55 (55%) and 45 (45%), respectively. The majority of the respondents were between the ages of 30 and 39, and most have taught in schools for between 1 and 5 years. Most of the teachers—62%—have no training in the teaching of learners with hearing impairments. On the human resources available in the schools, regular teachers take the lead with a mean of 3.61, while the rest are found in a few schools. General resources dominate at the expense of specific resources. Social interaction and relationships among learners and teachers are available, but special attention to learners with hearing impairments is not fostered in the inclusive school. The study revealed that there are adequate teaching and learning materials that, most importantly, appeal to learners without special needs, scoring a 2.51 availability. Compensatory devices, on average, were rated low, with hearing aids and loudspeakers rated at a mean of 1.52 and 1.47, respectively. Inclusion of learners was rated highly as eight out of twelve elements were high with free interaction, the same curriculum content, the same teaching time, and the aspect of combining learners ranking very high at 3.20, 3.48, 3.47, and 3.30, respectively. Finally, the study revealed that there is a significant relationship between educational resources and the inclusion of learners with hearing impairments in East Karachuonyo division, Homabay County, Kenya.

Keywords: Educational resources, Hearing impairments, East Karachuonyo Division, Teaching and learning materials.

INTRODUCTION

There has always been a high global demand for education. However, in some countries, the educational resources that have been available to meet the high demand for education have remained questionable [1]. Learners with hearing impairments have undergone integration and inclusion in regular classrooms to attain education with their counterparts who have no special needs in education [2, 3]. Given the importance of education, the 1994 World Conference on Education for All

(EFA), held in Jomtien, Thailand, focused on education for all children, irrespective of disability. The conference affirmed the principle that every child, including those with hearing impairments, has a right to education [4]. The concern for EFA was that every child should get access to quality education. The Darkar conference was held in Darkar, Senegal in the year 2000 attracted 164 countries focused on the attainment of the goals earlier set by the Jomtien conference and turned the

vision of education into reality [5]. The framework reaffirmed the goal of EFA laid down by Jomtien and facilitated working towards specific education for all by 2015. It also shared a common vision that "everyone, child and adult alike, would command the basic literacy and numerical skills needed to function as a citizen, worker, family member, or second-fulfilled individual in the global society" [4, 5]. The hearing impaired is included in this vision. Standard Rules are based on the principles of equality, integrated settings, provision of support services, adequate accessibility, parent participation, and giving special attention to learners with disabilities [6]. The 1994 World Conference on Special Needs Education, held in Salamanca, Spain, highlighted the range of differences that are present in today's society. The Conference' stated that many groups of children with special needs, including those with hearing impairments, are excluded from mainstream education. This indicates a need for a general reform to address issues of access and quality education for all children. The conference took cognizance of those with special needs and emphasized that every child has a fundamental right to education. The focal point of this conference was the provision of education to children with special needs through an inclusive schooling approach and the removal of all barriers so that all children can learn together [7]. In line with the current world order, Kenya has set some benchmarks to be achieved. By the year 2005, Universal Primary Education (UPE) was in place to pursue the goal of EFA by 2015 [8]. The Free Education ideology in Kenya has availed educational resources that support the learning of pupils in Kenyan primary schools [9, 10]. To ascribe to UN Standard Rules and the emergency issue that education, if free in Kenya, the need for inclusive education is something that ought to be practiced now. However, educational resources for hearing-impaired learners should be considered alongside other learning resources [11]. In Kenya, the prevalence of hearing-impaired learners by 2005 stood at 2% [12]. This constitutes a significant proportion, which should not be ignored in the educational provision as contained in the EFA goal. The Kenyan Institute of Special Education was established by Legal Notice in 1986 to train special teachers who would teach learners with special needs in inclusive educational settings [13]. However, a few teachers have enrolled to pursue diploma courses in special needs education. The

teachers who have graduated cannot meet the demands of learners with hearing impairments in regular school [14]. In Homabay County, where East Karachuonyo Division is situated, the existing number of learners with hearing impairments is on the rise. For example, the Division has a total of 18,600 learners, of whom 2% are presumed to be hearing impaired in an inclusive setting [15]. Huihu [16] postulates that educational resources should be of high quality in order to meet the expectations of learners with special needs in an inclusive setting with hearing impairments. Since the introduction of inclusive education, discrimination and bias in the education of learners with hearing impairments have continued to manifest through inaccessibility to all resources, services, and responsibilities. Inclusion should aim at ensuring that all people, regardless of disability, are not excluded from any of society's activities. However, the full and equal participation of every individual in society has not been respected or valued. Learners with hearing impairments have been found to perform below average throughout the history of inclusive education, and a good number of them end up completing the primary education cycle without the knowledge of reading or writing. On the contrary, other learners who learn with them acquire the skill of reading and writing at an earlier age than learners with hearing impairments in an inclusive setting. Many learners without special needs in education in a regular setting segregate themselves from their counterparts with special needs in both study groups and play. Others label them on the basis of their disability. The provision of educational resources for learners with hearing impairments is questionable as schools are not equipped with hearing aids, sign language interpreters, audiologists, sound amplifiers, and teachers who are trained to teach learners with hearing impairments. These learners require many resources that enable them to develop as learning occurs formally and informally through interaction with the environment. Basically, inclusive schools lack human resources, teaching and learning resources, compensatory resources, adaptation resources, communication resources, and general educational resources. Considerable approaches have not been applied in an inclusive setting to ensure that appropriate educational resources are available to facilitate the teaching and learning of learners with hearing impairments.

LITERATUREREVIEW

Concepts, opinions and ideas from authors and experts in non-educational resources

According to Webster's Dictionary, a resource is a source of supply or support. In education, such resources supply and support education. The Oxford Advanced Learners Dictionary describes a resource

as anything that can be turned to for help, support, or consolation when needed. Huihu [16] defines educational resources as a broad-based term that focuses on all factors outside and within the

classroom that make teaching and learning experiences more effective in an inclusive setting. Huihu categorises educational resources in an inclusive an inclusive setting to include human resources, teaching and learning materials,

compensatory resources, adaptation resources, communication resources, and general educational resources that are used in the teaching of learners with hearing impairments in an inclusive setting [16].

Human Resources

Simpson defines human resources as support that pivots organizations through the through the use of skills and abilities from people [17]. Huihu defines human resources as any human support for learning. It is the participation and contribution of people to meet the learning needs of learners [16]. In a school, human resources include teachers, teacher aides, note-takers, sign language interpreters, audiologists, audiologists, and educational psychologists in the learning lives of learners with hearing impairments [18]. In this study, a teacher is a person who plans and conducts lessons. The roles of a teacher include teaching academic subjects, preparing teaching and learning materials, adapting educational resources for learners with hearing impairments, collaborating with parents and other professionals in related fields, guiding and counselling learners and parents, and organising and teaching learners in co-curricular activities [19]. Huihu affirms that teacher aides assist teachers and learners in the classroom and carry out other duties, including assisting individual learners with hearing impairments as the teacher teaches, as well as

collecting learning materials and preparing displays [16]. Note-takers are people who take notes on behalf of learners with hearing impairments as the teacher teaches and gives instructions [20]. A sign language interpreter in this study is a person who acts as a mediator for a person who is deaf when instructions are given to people who have normal hearing ability. Sign language interpreters use signs and spoken language where appropriate. An audiologist is a person trained to assess learners who exhibit hearing loss, indicate the range the range and degree of hearing loss, loss, and finally assess the need for an amplification device and provide advice on special placement [21]. Otiato asserts that educational psychologists are charged with the responsibility of conducting an in--depth assessment for the identification the identification of problems in areas of intellectual and behavior all behavioural functioning. They do this by selecting and administering tests, scoring and interpreting the findings, and findings, and then offering guidance and counselling to the learner and family [21].

Teaching and learning materials

According to the SPRED Core Module, teaching and learning materials are instruments that are specially made to enhance learning [23]. Mwangi asserts that teaching and learning materials

stimulate the learners' interest in the learning process [24]. Further teaching and learning materials should be chosen and modified to suit the learning needs of learners.

Compensatory resources

Huihu defines compensatory resources as devices that enhance the function of parts of a person's body [16]. The researcher considers the resources that enable the learners with hearing impairments to use their remaining abilities for normal functioning. The presence of hearing aids will be considered in this study for learners with mild hearing impairment and those with moderate hearing impairment. Other aspects of the study include sound amplification and the availability the availability of hearing aids,

including body-worn hearing aids and group hearing aids. According to Mweheria, acoustic treatment of the environment the environment involves controlling the sound level in an environment to enable learners to obtain a favourable listening condition. In acoustic treatment, all sources of outside and inside noise have to be reduced. The strategy enables learners with hearing impairments to acquire sound with no distraction [25].

Adaptation Resources

The Webster Dictionary defines adaptation as a process of making fit, often by modification. Kilei describes resource adaptation as the modification the modification of resources to suit an individual an individual learner's needs [26]. The aspects of adaptation include content and presentation, specialized materials, and evaluation. Adaptation refers to the process of altering activities, materials, and equipment in order to suit the needs of learners

with hearing impairments and create a barrier-free environment for them. The aspects of the curriculum to be adapted include the classroom, the classroom, which should promote learning for learners with hearing impairments; content, which should be free of bias; and bias; and teaching materials, which should promote the acquisition of knowledge by learners with hearing impairments [27].

Communication Resources

The Webster Dictionary defines communication as the process of conveying knowledge or information. Kathenya defines communication as the transfer of information from one person to another [28]. Mwaura affirms that communication difficulty is a condition that either interferes with the smooth flow of one's speech or hinders the acquisition and

development of a language, which in turn affects educational performance [29]. Communication resources in this study are devices or facilities necessary to convey information to learners with hearing impairments. Hearing aids, pictograms, ideograms, and communication boards are such resources [30].

General educational resources

Huihu identified such resources as including projected resources, and graphic aids such as cartoons, charts, flashcards, maps, photographs, picture posters [16]. Prinz and Nelson describe successful microcomputer programmes that use pictures and representations of American Sign Language (ASL) to improve the reading and writing skills of learners with hearing impairments [31]. Automatic machines determine the degree of hearing loss for learners with hearing impairments and improve their residual hearing. An example of such a machine a machine includes a cochlear implant. Other such machines include electronic computer technology, which makes which makes phones and televisions more accessible to learners with hearing impairments. Prinz and Nelson further indicated the availability of acoustic couplers, which make it possible to send immediate messages over conventional telephone lines in both typed both typed and digital form [31]. Real-time graphic display facilitates captioning of live presentations, such as public lectures [32]. The study regards such resources as necessary to facilitate the learning of learners with hearing impairments in an inclusive and inclusive setting. The availability of computers in primary schools is a factor that necessitates the success of the learning programme for learners with hearing impairments, which should be investigated [33]. According to Lerner, mediated learning experience is a theory that puts emphasis on remedial intervention for learners with disabilities. In this study, learners with hearing impairments

require a mediating a mediating agent to support their learning. The mediators in this case may be teachers, parents, siblings, and peers who undertake to enrich the learning environment, thereby making learning more meaningful [34]. McConkey postulates that parental involvement puts the parent in the position of mediator in the learning of children with learning difficulties. As mediators, parents need to modify the home environment to suit the learner, provide meaning to the content to be learned, eliminate distractions, and encourage the learner in the learning process [35]. The researcher's view in this study is that parents have the duty of assisting the learners with their homework, providing learning materials, and providing a sound with a sound environment for learning. Njuki and Ogonda classify learners with hearing impairments in the category of those with special needs who require curriculum adaptation to suit the needs of individual learners [36]. The investigator considers the aspects of the curriculum to be adapted to include time, content, and correct placement for instructional delivery. Richmond and Smith [37] affirm that there should be special support that learners with disabilities should get in the normal classroom. According to the researcher's view, such support services should include interesting activities, fun in learning, the use the use of concrete learning materials, and multi-sensory approaches that encourage learners with hearing impairments to use their sensory modalities in learning in an inclusive setting, a fact that is supported by Gearheart [38].

Inclusion of hearing-impaired learners

According to Webster Dictionary, inclusion is a relation between classes that occurs when all members of the first class are also members of the second. It is the act of including or the state of being included. According to Warugu [29], inclusion is a goal that all participants in any society should aim to achieve to ensure that all persons, regardless of their racial, economic, physical, or any other differences, are not excluded from any of the society's activities. Ogotu asserts that equal opportunities and accessibility should be accorded to all learners in an inclusive setting and that discrimination and bias against those who are different is eliminated through appropriate practices and policies [39]. The study will consider inclusion as a goal that ensures that

learners with hearing impairments are accorded full and equal participation in learning by providing accessibility to resources, services, and responsibilities. The concepts that will be covered by inclusion include inclusive setting, differentiated curriculum, resource room, integration, special unit, regular school, and learners' diversity. These aspects of inclusion will give learners with hearing impairments an equal opportunity to learn with their counterparts without special needs. Warugu describes an inclusive setting as a situation where all learners, including those with special needs, participate in all activities in a community that recognises and addresses the needs of each learner as much as possible [29]. In this study, the needs of

learners with hearing impairments will be considered. Otiato defined differentiated curriculum as an approach that is used to identify the subjects in the curriculum that a learner should cover and plan for each learner according to his or her needs and abilities [22]. Randiki defines a resource room as a room in a regular or special school that is equipped for enriching learning for learners with special educational needs. Resource rooms are used to keep items that aid the learning of learners with learning impairments, such as hearing aids [40]. Waruguru describes a special unit as a classroom that is located in a regular school but is set aside for educating

Hearing impairment

According to Lesley, hearing impairment is a condition characterised by the inability to perceive sounds by ear [42]. In this study, the three types of hearing impairment that will be considered are mild hearing impairment, moderate hearing impairment, and chronic hearing impairment. Learners with mild hearing impairment refer to those with slight hearing inability. Learners with moderate hearing impairment are those with average hearing ability, while chronically hearing-impaired learners are deaf learners. Mild and moderately hearing-impaired learners have residual hearing ability and can perceive sound by amplification. According to William, hearing impairment is defined as a generic term that includes hearing disabilities ranging from mild to profound, thus encompassing children who are deaf and those who are hard of hearing [43]. In the two contexts, the researcher regards the hearing-impaired learners as those who are deaf and those who are hard of hearing. A deaf learner has profound hearing inability and is dependent on vision as the primary source of communication, while a hard-of-hearing learner has significant hearing loss that makes some special adaptation necessary to facilitate communication [44]. The researcher's view is that it's possible for hard-of-hearing learners to respond to auditory stimuli as they use audition as the primary mode of speech and language skills when the correct intervention measures are put in place such as the use of hearing aids. William points out that children with hearing impairments, even those with superior intelligence and abilities, are at a great disadvantage in acquiring language skills. As William asserts, the grammar and structure of English often do not follow logical

Inclusive Classroom

This is the least restrictive learning environment where learners with disabilities learn alongside those without disabilities. Kirk and Lord [48] assert that in an inclusive setting, learners receive social acceptance from their peers, whom they naturally interact with. Heward confirmed that there is an increased understanding between handicapped and

learners with specific types of disabilities [29]. This study will assess the presence of special units for learners with hearing impairments. Randiki defines regular school as the mainstream school that follows the curriculum that is prepared for average-ability learners. This study will investigate the extent to which learners with hearing impairments learn alongside the others in regular schools [40]. These conditions may hinder normal learning and development for individuals. The variation that will be considered in this study will be in terms of the hearing ability of learners in an inclusive setting [41].

rules [43]. The researcher's view on this is that, with proper inclusion and relevant adaptation, which includes the availability of relevant educational resources, such learners can compete favourably with the other learners in an inclusive setting. Smith and Luckasson [45] identify two major educational goals for hearing impaired learners, which are to reduce the achievement gap between non-handicapped students who are hearing impaired and to develop language skills. They suggest that learners with hearing impairments spend a great deal of time developing language, while the rest use their time to the maximum on academic-related activities, which eventually creates an academic gap [45]. The researcher's view concerning this is that, with good curriculum adaptation and adequate educational resources in an inclusive setting, learners with hearing impairments will learn on par with their non-handicapped counterparts. Tom et al. [46] affirm that students with hearing disabilities pose a variety of challenges to the general classroom teacher in so far as curriculum delivery is concerned. This implies that learners with hearing impairments in a general classroom setting need specialised human resources who can readily understand their educational demands to eliminate challenging situations in an inclusive setting. Rena and Doorlag [47] assert that the teacher is a vital member of inclusion, that they should always be the first to identify the disability, and that the parent should be notified before referral as they form part of the multi-disciplinary team. The researcher will consider the availability of teachers who are trained in special needs education and who teach learners with hearing impairments in an inclusive setting.

non-handicapped students and a greater level of interaction between special teachers and regular teachers to provide necessary support to learners with disabilities [43]. [49], further assert that an inclusive setting promotes the value of children with disabilities, hence acceptance and belongingness to focus on services and support. [49], affirm that the

use of individualised educational programmes to cater for diversity within an inclusive setting should

be adopted [50].

Theoretical Perspective

In this study, various theories have been considered, and their literature has been reviewed. The most common ones are:

Social learning theory

This theory, proposed by Albert Bandura, believes that an individual has the ability to select and control his own behaviour by imitating other people, such as parents, teachers, and peers. The study sought to find out the extent to which learners with hearing impairments are allowed to interact with the various educational resources in an inclusive setting in a manner that can influence their behaviour in learning. The significant people in the inclusive

setting whose behaviour can be imitated include teachers, peers, and other workers.

Social Mobilisation Theory

This theory, proposed by Jenkins, argues that people with common interests form social movements only if they have access to resources such as time and leadership skills that give them hope of achieving their goals despite opposition from the powerful groups that dominate society. The study covered the support that learners with hearing impairments require to succeed in an inclusive setting, where the majority of the school society is made up of those without special needs.

METHODOLOGY

Research Design

This study followed a descriptive correlation design because the researcher was interested in finding out the relationship that existed between the level of educational resources and the inclusion of hearing-impaired learners in inclusive primary schools. The study was also cross-sectional because the data was collected over a short time.

Kenya. According to the divisional register, there are a total of 12 schools with 108 teachers. The schools are distributed in five zones, including Rambira, Miriu, Kendu, Nyakongo, and Omboga zones. All teachers who are teaching in inclusive schools were targeted since they have relevant information about their respective inclusive schools.

Population of the study

The target populations of the study were all teachers who teach learners with hearing impairments in schools that are graded as inclusive institutions in East Karachuonyo Division, Homabay County,

Sample size

The sample size of this study was 108 teachers who are teaching learners with hearing impairments in 12 public educational institutions that are graded as inclusive schools. The schools are as follows:

Table 1: Shows Sample Size

School	Target population	Sample
Kanyadhiang	9	9
Maguti	11	11
Kendu Muslim	8	8
AyubOkoko	9	9
Ogango	10	10
Wangadonji	7	7
Makaka	7	7
Rongo Nyagowa	8	8
Gotokii	7	7
SekaD.O.H.	9	9
St.Douglas Weta	12	12
Kotieno Gumba	11	11
Total	108	108

Sample Procedure

The researcher applied purposive sampling when selecting the schools in the division. Only schools that are graded as public inclusive schools were

included in the sample. Regarding the respondents, universal sampling was used, as all the headmasters,

deputy headmasters, and teachers in the sampled schools were included in the study.

Research instruments

This study used a researcher-made questionnaire. Closed-ended questions were applied to obtain the data. The respondents were provided with a list of responses from which to select the most appropriate response. The questions were based on the study's specific objectives.

Data gathering procedure

The researcher obtained the transmittal letter from the College of Higher Degrees and Research (C.H.D.R.), KIU. The researcher visited the selected schools to seek permission and inform respondents about the prospective study and the presupposal letters of introduction from Kampala International University. The questionnaire was designed in such a manner that it is simple, clear, and concise to

obtain accurate information. Pretesting was done, and adjustments were made before dispatch to respondents. After one week, the researcher collected the completed questionnaires for analysis.

Data Analysis

Quantitative data was analysed using the statistical software package for social sciences (SPSS). Frequency distribution was used to determine the profile of respondents. Means were used to analyse the level of educational resources and the level of inclusion of the hearing-impaired learners. The Pearson coefficient was used to determine the relationship between educational resources and the inclusion of hearing-impaired learners. Statistical Computer Package for Social Sciences (SPSS) was used in the analysis and was based on the ranking as follows:

Table 2: Shows Data Analysis

Mean Range	Response Mode	Interpretation
3.20-4.00	Strongly Agree	Low
2.51-3.25	Agree	very high
1.76-2.50	high	Very low
1.00-1.75	Strongly disagree	High

Ethical Consideration

The data gathered from respondents was treated with the utmost confidentiality. The information was in the safe custody of the researcher, and copies of it

will only be submitted to the university. No names were required on the questionnaires to ensure confidentiality on the part of the respondents.

Reliability and validity of the instrument

The content validity index (CVI) was tested to determine the reliability and validity of the questions in the questionnaire as below.

TQ

$CVI = \frac{RQ}{TQ}$

Where RQ = relevant questions

TQ = total number of questions

$CVI1(25) + CVI2(20) + CVI3(25)$
 $= 0.6$

This showed validity based on the scale of validity > 0.5 and invalidity < 0.5. A test-retest was used to compute reliability as below: There was reliability

based on the scale of reliability > 0.5 and unreliability < 0.5.

RESULTS

Demographic characteristics of the respondents

Table1: Presents the profile of the respondents (Teachers) in terms of age, gender, highest education attainment, and number of years in the school.

Table 3: Shows the Demographic characteristics of respondents

Age of respondents	Frequency	Percentage
20-29	22	22.0
30-39	33	33.0
40-49	29	29.0
50-59	15	15.0
60andabove	11	11.0
Total	100	100.0
Gender		
Male	49	49.0
Female	51	51.0
Total	100	100
Level of qualification		
No qualification	63	63.0
Certificate in special needs	9	9.0
Diploma in special needs	22	22.0
Degree in special needs	6	6.0
Total	100	100
Numbers of years in school		
1-5years	62	62.0
6-10years	27	27.0
10 and above	11	11.0
Total	100	100

Source: Primary data 2012

According to Table 1, females were 51 (51%) and males were 49 (49%). This implies that females dominated the sample, suggesting their large numbers in the studied schools. This was the expectation of the researcher because in Kenya, like in many African countries, there is a large number of primary school teachers, which in some cases exceeds that of male teachers. Of the 100 teachers that took part in this study, 22% were between 20 and 29 years old, 33% were between 30 and 39 years, 29% were between 40 and 49 years, 15 were between 50 and 59 years, and only 1 respondent was above 60 years. This implies that most respondents (i.e., 55%) were under 40 years old. Cumulatively, 84% were

under 50 years old. Out of the 100 respondents, 9% were holders of certificates in special needs, 22 had attained diplomas in special needs, 6% had a degree in special needs, and 63% did not qualify for special needs. The findings indicate that most respondents were unqualified for special needs education. Out of the total number of respondents, the majority (62%) had worked for their schools for a period between 1 and 5 years; 27% had worked from 6 to 10 years; and only 11% had worked for 10 years and above. The findings indicate that the majority of the respondents (89%) had worked for a period of less than 10 years.

Level of education resources

The second objective of the study was to determine the level of educational resources used in the inclusive schools in East Icarachuonyo Division, Homabay County. Findings on this objective are presented in Table 2. The level of education

resources in this study was conceptualised in terms of human resources, teaching and learning materials, compensatory devices for hearing-impaired learners, and communication resources.

Table 4: Shows the Level of Education resources used in inclusive schools

Item	Mean	Interpretation	Rank
Human resources			
Regular teachers are available	3.61	Very high	1
Teacher aide is available	2.23	Low	2
Education psychologist are available	2.04	Low	3
Sign language interpreters are available	1.94	Low	4
Note takers are available	1.66	Very low	5
Audiologist are available	1.52	Very low	6
Sub-average mean	2.17	Low	2
Teaching and Learning materials			
Chairs are available	3.48	Very high	1
Tables are available	3.47	Very high	2
Charts are available	2.90	High	3
Radios are available	2.41	Low	4
Models are available	2.30	Low	5
Televisions are available	1.60	Very low	6
Projectors are available	1.47	Very low	7
Sub-average mean	2.51	High	1
Commensatory device			
Hearing aid are available	1.52	Very low	1
Loudspeakers are available	1.47	Very low	2
Sub average mean	1.49	Very low	4
Communication resources			
Communication boards	1.98	Low	1
Pictogram	1.88	Low	2
Tape recorders	1.70	Very low	3
Ideogram	1.64	Very low	4
Acoustic treatment devices	1.44	Very low	5
Sub-average mean	1.73	Very low	3
Average mean	1.98	Low	

Source: Primary data 2012

The mean scores in Table 4 indicate that respondents disagreed with most items of human resources availability in an inclusive setting for hearing-impaired learners. The respondents indicated that there are few teacher assistants, education psychologists, sign language interpreters, note-takers, and audiologists, with means of 2.23, 2.04, 1.94, 1.96, and 1.56, respectively. Only regular teachers were noted to be very much available, mean = 3.61, implying that teachers who graduate from colleges are not specialised to teach learners with hearing impairments because most African governments prefer to offer cheap training at the expense of specialised training, which is

comparatively expensive. Regarding the level of teaching and learning materials, respondents rated chairs, tables, and charts as being available with means of 3.48, 3.47, and 2.90, respectively, which implies that parents of learners can buy them, while the mean score for radios, models, televisions, and projectors indicated that few are available. For compensatory devices, the respondents rated the level of availability of hearing aids as being few, and that of loudspeakers was rated as very few with means of 1.52 and 1.49, respectively, implying that parents need support to supply these resources, which are regarded as expensive. Table 4 also indicates that the level of communication resources

is limited, particularly the communication boards, pictograms, tape recorders, ideograms, and acoustic treatment devices. Overall, the mean score for communication resources was 1.73, indicating low levels of availability of communication facilities for

the hearing-impaired learners in the East Karachuonyo division. This implies that most communication resources are beyond the means of parents, who are left to take care of most educational expenses.

The extent of inclusion of hearing-impaired learners

The third objective of the study was to determine the extent of inclusion of hearing-impaired learners in regular primary schools in East Karachuonyo Division, Homabay County. Findings on this objective are presented in Table 4. The extent of

inclusion in this study was conceptualised in terms of inclusive setting, curriculum, and integration. Table 4 displays the mean scores, which are ranked according to the characteristics, from the highest to the smallest score on each of the three elements.

Table 5: Shows the Level of inclusion of the hearing-impaired learners

Item	Mean	Interpretation	Rank
Inclusive setting			
Free interaction of learners with hearing impairment and those without	3.20	High	1
A friendly environment for learners with hearing impairment is accorded	2.96	High	2
Special room used to keep resources for learners with special needs available	2.04	Low	3
Resource room set aside for learners with special needs is available	2.03	Low	4
Sub-average mean	2.56	High	
Curriculum			
Same curriculum context	3.48	Very high	1
The same teaching time is used to teach all learners	3.47	Very high	2
Remedial classes are availed for learners with hearing impairment	2.90	High	3
Special teaching aids are availed to teach learners with hearing impairment	2.41	Low	4
Sub-average mean	3.07	High	
Integration			
Learners with hearing impairment are combined with those without impairment in learning.	3.30	Very high	1
All learners are combined in co-curricular activities	3.17	High	2
All learners are combined in both curricular and co-curricular activities	3.1	High	3
Learners are not combined in both co-curricular and curriculum activities	1.9	Low	4
Sub-average mean	2.89	High	

Source: Primary data 2012

Means in an inclusive setting indicate that there is free interaction between the hearing impaired and those without impairment (mean = 3.20), and the environment was rated as somehow friendly, mean = 2.96, implying that learners with hearing impairments in an inclusive setting are naturally accommodated by other learners, hence they are accorded social acceptance in the learning environment. However, special rooms used to keep resources for learners with special needs and special rooms set aside for these learners were rated to be few with a mean of 2.04 and 2.03, respectively,

implying that the provision of special rooms, which is left as an educational burden to the parent, cannot be availed of due to the high poverty index among most African parents. Means on the second aspect of extent of inclusion (i.e., curriculum) in Table 3 indicate that some curriculum contexts are available, teaching time is available to teach all learners, and remedial classes are organised for learners with hearing impairments, with means of 3.48, 3.47, and 2.90, respectively, implying that free services that can be afforded by teachers are availed to all learners without discrimination. However, extra time beyond

the time set for learners without disabilities is required to provide specialised attention. Special teaching aids available to learners with hearing impairments are few, as this requires monetary attention. As regards the integration of learners with hearing impairment, most respondents indicated that learners with hearing impairment are combined with those without impairment in learning as well as in

co-curricular activities. Overall, the extent of inclusion was rated as high. This is an indication that learners are given all the services within the means of relevant service providers but lack services that require direct financial support, which is a common phenomenon experienced by most-poor societies.

Relationship between level of educational resources and inclusion of hearing impaired

In this section, findings on the fourth objective of the study are presented, involving testing of the pertinent hypothesis using the Pearson Linear Correlation Coefficient (PLCC). Table 4 presents the findings from the testing of the first null hypothesis. The objective was to determine if there is a significant relationship between educational resources for hearing-impaired learners and their

inclusion in regular primary schools in East Karachuonyo Division, Homabay County, Kenya. The hypothesis (Ho) was that there is no significant relationship between educational resources and the inclusion of learners with hearing impairments in regular primary schools. To test this hypothesis, PLCC was used, and Table 4 shows the PLCC for the two variables.

Table 6: Relationship between levels of education resources and learners inclusion (Level of significance=0.05)

Variables Correlated	R-value	Sig.	Interpretation	Decision on Ho
Level of Human Resources Vs Level of Inclusion of the hearing-impaired learners	0.284	0.004	Significant correlation	Rejected
Teaching and learning materials Vs Level of Inclusion of the hearing-impaired learners.	0.267	0.007	Significant correlation	Rejected
Compensatory Vs Level of inclusion of the hearing-impaired learners	0.049	0.631	Moderate relationship	Accepted
Communication devices Vs Level of inclusion of the hearing-impaired learners	0.310	0.002	Significant correlation	Rejected
Level of Education Resources Vs Level of inclusion of the hearing-impaired learners	0.302	0.002	Significant relationship	Rejected

Source: Primary data 2012

Table 6 shows that the level of education resources has a significant positive relationship with the extent of inclusion of learners with hearing impairment in East Karachuonyo Division, with $r = 0.302$ and $sign = 0.002$, leading to the rejection of the null hypothesis to the effect that the level of education resource availability is significantly linearly correlated with the extent of inclusion of the hearing impaired learners in regular P1-primary schools in

East Karachuonyo Division, Homabay County, Kenya. Specifically, three out of the four elements of education resources are significantly correlated with the level of inclusion, while one (i.e., the level of compensatory resources) has a moderate relationship. This is so because its $sig. = 0.631$ is greater than the popular $sig.$ in the social sciences of 0.05.

Regression analysis on the relationship between the level of education resources and the extent of inclusion of hearing-impaired learners

The correlation analysis revealed that most of the types of education resources considered were significantly correlated with the extent of inclusion of hearing-impaired learners. However, a deeper

analysis intended to establish the contribution of each type of education resource towards inclusion was made using a regression analysis. The result of this analysis is reported in Table 7.

Table 7: Shows the Regression Analysis on Level of Education Resources and Extent of inclusion of the hearing-impaired learners

Variables regressed	Adjusted r^2	Sig.value	Interpretation	Decision on H_0
Level of education resources vs. extent of inclusion of hearing Impaired learners	0.16	0.000	Significant effect	Rejected
Level—of human resources vs. extent of Inclusion of hearing-impaired learners	0.223	0.038	Significant effect	Rejected
Level of teaching and learning resources Vs extent of inclusion of hearing-impaired learners	0.200	0.044	Significant effect	Rejected
Level of compensatory resources Vs extent of Inclusion of hearing-impaired learners	-0.225	0.142	Significant effect	Accepted

Source: primary data 2012

Table 7 shows that the level of education resources collectively impacts the extent of inclusion of learners with hearing impairment ($F = 7.723$; Sig. = 0.000), accounting for 16% of the variation in the extent of inclusion. The findings in Table 5 also indicate that human resources had the largest beta coefficient ($\alpha = 0.223$), followed by teaching and

learning resources ($\alpha = 0.200$), and communication resources trailed with $\alpha = -0.285$. These findings established that the level of education resources put together and independently significantly affects the extent of inclusion of hearing-impaired learners, apart from the level of compensatory resources, which had no significant relationship.

DISCUSSION

The findings revealed that females dominated the sample at 51 (51%) and males were 49 (49%). This was the expectation of the researcher because Kenya, like many African countries, has a larger number of teachers in the teaching force than their male counterparts. The highest number of respondents were in the age bracket of 30 to 39, who represented 33% of the sample, while the least common category was 60 and above, representing only 11%. Cumulatively, 84% were below 50 years. On educational qualifications, 63% did not qualify for special needs, 22% had a diploma, and only 6% were degree holders. This implies that most teacher colleges in Kenya do not train teachers for special needs. The findings as per the number of years served in the schools revealed that 62 (62%) of the respondents had served their schools for 1–5 years and 11 (11%) had worked for over 10 years. The findings indicate that the majority of the respondents, 89%, had served for less than 10 years, implying that teacher retention in schools is low. On the level of educational resources used in the inclusive schools in East Karachuonyo division,

Homabay County, the level of educational resources in this study was conceptualised in terms of human resources, teaching and learning materials, compensatory devices, and communication resources. The human resources category that ranked highest was regular teachers, with a mean of 3.61, while Audiologists ranked the lowest at 1.52. This implies that the majority of human resources in schools are teachers who are not trained in special needs. The general finding was that, on average, there were few human resources in inclusive schools. The results of the teaching and learning resources revealed that chairs, tables, and charts were available with a mean of 3.48, 3.47, and 2.90, respectively. On the contrary, radios, model 3, televisions, and projectors were few in schools, with televisions scoring a PC: ltry mean of 1.47, meaning that very few televisions are available in schools. Regarding compensatory resources, the respondents rated the level of availability of hearing aids as being few and that of loudspeakers as being very few, with means of 1.52 and 1.49, respectively. Communication resources were few, particularly communication

boards, pictograms, tape recorders, ideograms, and acoustic treatment devices. The overall mean score for communication resources was 1.73, indicating the low level of availability of communication facilities for the hearing impaired in the East Karachuonyo division. On the extent of inclusion of the hearing-impaired learners, the study was conceptualised in terms of inclusive setting, curriculum, and integration. The means in an inclusive setting indicated that there is free interaction between the hearing-impaired learners and those without impairment, with a mean of 3.20. The environment was rated as somehow friendly, scoring a mean of 2.96, while the special room to keep resources for the hearing-impaired learners and the special room set aside for these learners were rated as few, with means of 2.04 and 2.03, respectively. This implies that most schools graded as inclusive settings have few resources to meet the demands of learners with hearing impairments. The other aspect tested was the curriculum used in the inclusive schools, which revealed that some context was available. Teaching time is available to all learners, implying that the curriculum is not adapted to suit learners with hearing impairments. Remedial classes are organised for all learners. The three aspects scored means of 3.48, 3.47, and 2.90,

CONCLUSION

The study validated the theories of social learning theory and social mobilisation theory, which involve the interaction of various resources among all learners to create a link between the learner and the

Recommendations

The Ministry of Education should train human resources such as sign language interpreters, teacher assistants, education psychologists, note-takers, and audiologists to teach learners with hearing impairments. The government of the Republic of Kenya should provide compensatory resources such as loudspeakers and hearing aids for learners with hearing impairments. The Ministry of Education should provide teaching and learning materials such as radios, models, televisions, and projectors for learners with hearing impairments. The government of the Republic of Kenya should fund the procurement of communication resources such as pictograms, tape recorders, and ideograms and

respectively. Special teaching aids to teach hearing-impaired learners were few. As regards the integration of learners with hearing impairments, most respondents indicated that learners with hearing impairments are combined with those without impairments in learning. Overall, the extent of inclusion was rated as high. The relationship between the level of educational resources and inclusion of the hearing impaired learners was tested to have a significant relationship in East Karachuonyo Division with $r = 0.302$, $\text{sign} = 0.002$, leading to the rejection of the null hypothesis to the effect that the level of educational resource availability is significantly linearly correlated with the extent of inclusion of the hearing impaired learners in East Karachuonyo Division, Homabay County. Specifically, three out of four elements of educational resources are significantly correlated with the level of inclusion, while one (i.e., the level of compensatory resources) has a moderate relationship. This is so because its $\text{sig.} = 0.631$ is greater than the popular sig. in the social sciences of 0.05. This led to the rejection of the null hypothesis, which stated that there is no significant relationship between the level of educational resources and the inclusion of hearing-impaired learners in East Karachuonyo Division, Homabay County, Kenya.

stimuli, which serve as the content materials to be learned. On the whole, multi-disciplinary team involvement in the learning of learners with hearing impairments mediates their learning.

ensure an acoustic treatment in the learning environment for hearing-impaired learners. The Ministry of Education should fund inclusive schools to provide special resource rooms for specialised learning for hearing-impaired learners. The Ministry of Education should ensure the integration of learners by ensuring that learners with hearing impairments learn alongside those without disabilities. The Parents and guardians of learners with hearing impairments should be involved in the provision of remedial services to their children while at home to bridge the gap that exists between learners with hearing impairments learning together with their peers without special needs.

REFERENCES

1. Plank D. Understanding the demand for schooling. In Meeting of National Experts on "Understanding the Demand for Schooling." Sponsored by the Organization for Economic Cooperation and Development. Retrieved May 2005 (Vol. 10, p. 2011).
2. Reich C, Hambleton D, Houldin BK. The integration of hearing-impaired children in regular classrooms. *American Annals of the Deaf*. 1977 Dec 1:534-43.
3. Dixon S. Inclusion—Not segregation or integration is where a student with special needs belongs. *The Journal of Educational Thought (JET)/Revue de La Pensée Educative*. 2005 Apr 1:33-53.
4. World Conference on Education for All, Meeting Basic Learning Needs. World

- Declaration on Education for All and Framework for Action to Meet Basic Learning Needs. Inter-Agency Commission; 1990.
5. Peppler-Barry U, Fiske EB. World Education Forum, Dakar, Senegal, 26-28 April 2000.
 6. Degener T, Koster-Dreese Y. Standard Rules on the Equalization of Opportunities for Persons with Disabilities: Adopted and proclaimed by General Assembly resolution 48/96 of 20 December 1993. In Human Rights and Disabled Persons 1995 Jan 1 (pp. 285-319). Brill Nijhoff.
 7. Education OS. The Salamanca statement and framework for action on special needs education. Special Educational Needs and Inclusive Education: Systems and contexts. 2004; 1:382.
 8. Mackatiani CI. Influence of physical facilities on quality primary education in Kenya in post UPE and EFA era. European Journal of Education Studies. 2017 May 20.
 9. Muricho WP, Chang'ach JK. Education reforms in Kenya for Innovation.
 10. Kinuthia W. Educational development in Kenya and the role of information and communication technology. International Journal of Education and development using ICT. 2009 Apr 1;5(2).
 11. Luvanga H B. Pedagogical challenges in the implementation of inclusive education for pupils with hearing impairments in public primary schools in Mombasa County, Kenya (Doctoral dissertation, Pwani University).
 12. Ndurumo M. Introduction to Educational Psychology. Nairobi. Kenya Institute of Special Education. 2002.
 13. Mwoma T. Education for children with special needs in Kenya: A review of related literature. Education. 2017;8(28).
 14. Kapinga O. *Professional development among educators pursuing a B. Ed. program in special education in Tanzania: A study of motives and perceived outcomes* (Doctoral dissertation, Åbo Akademis förlag-Åbo Akademi University Press) 2012.
 15. Fredrick OO. Educational resources and inclusion of hearing-impaired learners in primary schools in east Karachuonyo division Homabay county Kenya (Doctoral dissertation, Kampala International University, College of Education and Management).
 16. Huihu B. Educational resources in an inclusive setting. Nairobi, Kenya, KISE, Kasarani. 2002.
 17. Simpson M. Museums and restorative justice: heritage, repatriation and cultural education. Museum International. 2009 May;61(1-2):121-9.
 18. Dzulkipli I. Teaching and Learning Aids to Support the Deaf Students Studying Islamic Education. Pertanika Journal of Social Sciences & Humanities. 2021 Dec 1;29(4).
 19. Neugebauer M. Teachers: Their characteristics and their role in the education system. Research handbook on the sociology of education. 2019 Aug 30:365-82.
 20. Thorley MD. *Evaluating D/deaf learners' experiences of notetaking support in higher education utilising a transformative framework* (Doctoral dissertation, University of Greenwich) 2015.
 21. Warnicke C, Granberg S. Interpreter-mediated interactions between people using a signed respective spoken language across distances in real time: a scoping review. BMC Health Services Research. 2022 Mar 24;22(1):387.
 22. Otiato CA. Teaching and learning strategies in an inclusive setting. Nairobi: KISE. 2002.
 23. SPRED. Teaching and learning in the primary classroom (CoreModule) Nairobi, Kenya, K.I.E. 2001.
 24. Mwangi K. Teaching and learning strategies in an inclusive setting, Nairobi, Kenya, Part II, KISE, Kasarani 2002.
 25. Mweheria S. Educational assessment and intervention measures for children with special needs and audiology, Nairobi, Kenya, KISE-Kasarani 2002.
 26. Kilei B. Curriculum development and adaptation, Nairobi, KISE, Kasarani 2003.
 27. Nakayiza F. *Adaptation of instructional materials for children with hearing impairment in primary schools in Goma division, Mukono municipality* (Doctoral dissertation, Kyambogo University (un published work)).
 28. Kathanya M. Educational assessment and intervention measures for children with special needs. Nairobi, Kenya, KISE 2002.
 29. Mwaura S. and Wanyera S. Introduction to children with special needs, Nairobi, Kenya, KISE, Kasarani 2002.
 30. Gaudence O, Too JK, Nabwire VK. Effects of hypermedia on learning achievement in geography for hearing impaired learners in

- mixed special secondary schools in Kenya.? 2018.
31. Prinz V. and Nelson K. Introduction to Exceptional children part ii, Toronto, Mc Graw Hill. 1985.
 32. Ranchal R, Taber-Doughty T, Guo Y, Bain K, Martin H, Robinson JP, Duerstock BS. Using speech recognition for real-time captioning and lecture transcription in the classroom. *IEEE Transactions on Learning Technologies*. 2013 Jun 11;6(4):299-311.
 33. Daramola FO. Usability of assistive technologies for the learners with hearing impairment in federal college of education. *Indonesian Journal of Community and Special Needs Education*. 2022;2(2):119-26.
 34. Lerner, J. Learning disabilities. Boston: Mifflin Company. 1985
 35. McConkey R. Working with parents, a practical guide for teachers and Therapist: London, Croom Helm. 1988.
 36. Njuki EP, Ogonda GO. Learners with learning difficulties in an inclusive setting. Kampala: UNISE/KISE. 2001.
 37. Richmond RC, Smith CJ. Support for special needs: the class teacher's perspective. *Oxford Review of Education*. 1990 Jan 1;16(3):295-310.
 38. Gearheart B. Learning disabilities educational strategies. London: Mosby Company.1995.
 39. Ogutu JP. Effects of online learning on students with disabilities in public universities in kenya. *African Research Journal of Education and Social Sciences*. 2017;4(2):1-5.
 40. Randiki F. Historical Development of Special Needs Education. Nairobi, KISE - Kasarani.2002.
 41. Shaduma J. Psychosocial effects of disability on an individual. Nairobi, Kenya, KISE- Kasarani. 2002.
 42. Lesley B. (1993). The new shorter oxford dictionary, U.S.A, Oxford, Clarendon Press,
 43. Heward WL. Exceptional children: An introduction to special education. (No Title). 1996.
 44. Newton VE, Shah SR. Improving communication with patients with a hearing impairment. *Community Eye Health*. 2013;26(81):6.
 45. Smith DD, Luckasson R. Introduction to special education: Teaching in an age of challenge. (No Title). 1995 Jan.
 46. Tom E. Teaching students with special needs in n inclusive setting. Boston Allynand Bacon. 1998.
 47. Rena L. and Dorothy H. Teaching special children in general education classroom, United Kingdom-London Prentice Hall. 1999
 48. Hardman M., Drew C. and Winston M. Exceptional Children (1sted) Massachusetts U.S.A Publishing Press. 2002.
 49. Lloyd J, Hallahan DP, Kauffman JM. Learning disabilities: A review of selected topics. Fourth review of special education. 1980:35-60.

**CITE AS: Fredrick Odhiambo Ojijo (2024). Educational Resources and Inclusion of Hearing-Impaired Learners in Primary Schools in East Karachuonyo Division Homabay County-Kenya. IDOSR JOURNAL OF BANKING, ECONOMICS AND SOCIAL SCIENCES 9(1):1-16.
<https://doi.org/10.59298/JBESS/2024/91.1.1500>**