EXPLORING ALTERNATIVE STRATEGIES FOR TEACHING MUSIC THEORY AND AURALS TO THE HEARING IMPAIRED LEARNERS IN KAKAMEGA COUNTY, KENYA

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REG. NO.: M66/CE/25264/2013

A THESIS SUBMITTED TO THE SCHOOL OF CREATIVE AND PERFORMING ARTS, FILM AND MEDIA STUDIES IN FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF MUSIC EDUCATION OF KENYATTA UNIVERSITY.

FEBRUARY, 2020

DECLARATION

This thesis is my original work and has not been presented for a Degree in any other university.

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DEDICATION

I dedicate this work to my wife Lucy Mkonjia, my children Pauline, Fresher, Lincoln, Ecline and Hillary. I also dedicate the work to all Hearing Impaired (HI) learners in Kenya.

ACKNOWLEGDEMENT

I thank my able supervisors Dr. Nganyi A. Wetaba and Dr. Oyugi Isaiah for guiding me throughout my research process .I also thank Dr. Andang'o Elizabeth for her tireless effort in reading and overseeing the final corrections of this document. May the almighty God shower you with all his blessings.

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ABBREVIATIONS AND ACRONYMS

ASL:	American Sign Language
EARC:	Education Assessment Resource Centre.
EFA:	Education for All
HI:	Hearing Impaired
HOH:	Hard of Hearing
IE:	Inclusive Education
KCPE:	Kenya Certificate of Primary Education
KCSE:	Kenya Certificate of Secondary Education
KEMI:	Kenya Education Management Institute
KICD:	Kenya Institute of Curriculum Development
KISE:	Kenya Institute of Special Education
KMF:	Kenya Music Festival
KNEC:	Kenya National Examination Council
MEARC:	Mumias Education Assessment Resource Centre
SEN:	Special Education Needs
SNE:	Special Needs Education
THI:	Total Hearing Impaired
MOE:	Ministry of Education
KMF:	Kenya Music Festival

OPERATIONAL DEFINITION OF TERMS

For the purpose of this study, the following terms shall adapt the meanings indicated below:

Assessment and placement: The process of identifying inability to hear and placing various categories of the HI where they fit.

Aurals: The ability to respond to rhythm and melody.

Educational support services: These are: curriculum designs, therapy for hearing defects, assessment and placement of HI learners, and gadgets supporting hearing for learners with HI

Hearing Impairment: Handicap in perceiving Musical sound.

Omusiru: A term used by the Wanga sub-tribe of the Luhya community to refer to a person with hearing disability.

Research Equipment: Musical resources to be used in this study.

Teaching Strategies: Methods of teaching learners with HI

ABSTRACT

Education for all (EFA) is a global commitment established in the year 2000.Vision 2030 also advocates for Education as an important pillar in development. The Government of Kenya has introduced free and compulsory Education. Learners with hearing impairment (HI) however do not learn music as a subject. This study aimed at filling this gap by exploring strategies to be used to teach music to learners with HI. The objectives of the study were to: establish the challenges likely to be experienced by learners with HI while learning Music theory and aurals; analyze pedagogical challenges likely to be faced by music teachers of learners with HI in teaching music theory and aurals; and to explore strategies to be used in teaching music theory and aurals. Purposive, stratified and random sampling methods were used to select target respondents. 2 primary schools and 2 secondary schools all from Kakamega County were sampled for the study. In addition, Mumias Education Assessment Resource Centre (MEARC) was used to provide information on the selection and placement procedure of learners with HI. 80 students from each targeted institution were sampled for the study. In addition, 5 administrators from institutions of learners with HI were interviewed. The study employed descriptive and experimental research designs. Data was collected using questionnaires, observation schedules, and interview schedules and then presented using charts and tables. The questionnaires, observation and, interview schedules were administered to learners with HI, their teachers, and MEARC officers. Some learners were subjected to selected teaching strategies (experimental group) and other learners not subjected to those teaching strategies (control group). Validity was ensured by using respondents versed with special needs education. Instruments for study were tested through piloting with few respondents. The experimental design targeted relevant respondents (HI).Music equipment used was tuned well to give correct pitch. Data was coded and presented using tables, figures and graphs. Collected data was subjected to content analysis in which triangulation was employed to get views from different sources. The major findings of the study are: learners with HI have a lot of potential in music and therefore can do music as a subject; assessment of learners with HI plays a big role in their learning ability; the learners with HI can substitute their sense of hearing with their sense of sight, feel and touch to learn music theory and aurals; and, teachers of learners with HI are not trained in the subject of music. The study recommends that: The learners with HI should be provided with adequate teaching and learning materials in Music; they should be given an opportunity to study music as a subject; KISE should introduce Music as a subject; and, KICD and KNEC should incorporate concerns of the HI in their syllabi. It is hoped that findings of this study will be beneficial to Curriculum developers (KICD), teachers, EARC officers, and learners with HI in regard to teaching Strategies for learners with HI. The study concluded that the hard of hearing (HOH) and the partial hearing impaired (PHI) learners are capable of studying music as a subject.

CHAPTER ONE
INTRODUCTION

1.0 Introduction

This chapter comprises background information to the study, statement of the problem under research, objectives of the study, research questions, significance of the study, the scope of the study, and, limitations experienced during the study.

1.1 Background to the study

Education for All (EFA) is a global commitment, established in the year 2000, to provide quality education to children, youth and adults (KEMI, 2014). The policy has been improved to become an all-inclusive strategy which advocates for Special Needs Education (SNE) learners to be integrated in regular schools (KEMI, 2014).

In Kenya, Vision 2030 considers education as an important tool for its success. Vision 2030, for example, emphasizes the need to integrate special needs learners in regular curriculum endeavors (National Planning Commission, 2013). The Education Act (2013) spells out the need for free and compulsory education to all school going children in Kenya. The Act also advocates for all school going children to be given equal opportunity. This includes the SNE learners where learners with HI fall.

To show their potential in Music, the learners with HI take part in practical music during the Kenya Music Festival (see Ministry of Education, Kenya Music Festival Syllabus for 2015, 2014, 2013). They, for example, take part in dances, poetry and instrumental classes (Classes 831, 835, 842, 1501-1535). They have special classes for poetry (sign poems) MOE, (Ministry of Education Science and Technology, 2017) page 95-98

One of the objectives of KMF is to encourage the study, practice, development and documentation of Kenya's rich artistic output (MOE KMF Syllabus, 2015). Though the learners with HI have been given the opportunity to showcase their talents in music, they have not been allowed to study it as a subject. This study aimed at filling the gap by

suggesting possible strategies to be used in teaching Music theory and aurals to these learners.

Many disabled people suffer a lot of stigma (KEMI handbook, 2014). Among the Wanga, a sub-tribe of the larger Luhya community from Western Kenya; a person with hearing impairment is called *omusiru*. Literally translated, the word *omusiru* means a fool. This is the community where a number of institutions have been sampled for this study. This negative label therefore portrays people with HI as being incapable of perceiving and deciphering, let alone learning music. Going by this standpoint, learners with HI are quickly dismissed in music activities due to their inability to hear (Musalia, 2012).

According to Aura (2012), learners with disability in Kenya face many challenges. This includes: learners with HI, the physically challenged, the visually impaired, and the mentally challenged among others. Some of these challenges relate to teaching methodologies and biological handicaps (Dell and Donk, 2007; Segal, 1974).

To address these challenges facing learners with disability, the Government of Kenya has put in place various strategies. One such initiative was the establishment of the Kenya Institute of Special Education (KISE) in the year 1986. This institution trains teachers and other human resource officers in the area of Special Needs Education (SNE). However, the training does not include specialization in Music as a subject. Taking cue from this, SNE courses are now offered in many local universities. Music students in these universities and colleges are not however prepared fully to handle music as a subject. Similarly, the Kenya Institute of Curriculum Development (KICD) has prepared Music syllabi and resource materials for all basic Education institutions in the country. These syllabi and resource materials have, however, not put into consideration the hearing handicap of learners with hearing impairment (HI) (KICD, 2002). This scenario poses challenges to potential music students with HI. Learners with HI are those who have difficulties in hearing .These learners are of three main categories namely: Hard Of Hearing (HOH), Partial Hearing impaired (PHI) and the Total Hearing Impaired (THI). The assessment procedure by KNEC in the subject of music, particularly Paper Two

which deals with aurals does not consider learners with HI. The paper is recorded on cassettes which are friendly to the learners with hearing ability.

Many special institutions have been established for learners with disability in Kenya. Among these special institutions are those for the physically challenged (Joy town School in Thika) and visually challenged (Thika School for the Blind) as well as those for learners with HI. Among them are: St. Martin's Primary School and St Angela Secondary School for the Deaf Girls in Mumias, and Ematenje Boys Secondary School for the HI; all in Kakamega County, Nyangoma primary in Kisumu County, Kedowa Secondary School in Kericho County, St Joseph's primary school in Bungoma County, among others.

Mumias Sub-County has a long history of handling learners with HI (http://stangelamumiassecvocational.blogspot.co.ke/ Hearing impairment is a handicap basically denoting the inability of one to hear sound. Learners with this handicap are of various categories (Musalia, 2012).We have the Hard of hearing (HOH), Total hearing impaired (THI), partially hearing (PHIs), among others. All these categories are derived during assessment at EARC.

The institutions selected for the study have received sponsorship from the Governments of Kenya and Germany and are fully equipped with learning resources for learners with HI. The schools admit learners from all over Kenya. These institutions represent learners with HI in Kenya. Although a lot of resources have been invested in these schools, Music as a subject is not being taught. Limited music equipment bought by the management of these schools is used for KMF activities.

While the physically and visually challenged learners have the opportunity to study Music Education, learners with HI on the other hand, do not have such an opportunity (KNEC Report, 2017). Nevertheless, this category of learners actively participates in practical music during the annual Kenya Music Festival, (see MOE KMF syllabuses for the years 2015, 2014, 2013). They also take part in inter-class, inter-house and other community cultural and religious functions for example during wedding ceremonies and

praise and worship. Learners with HI from Catholic institutions also take part in the mass using sign singing.

As noted earlier in this document, there are several categories of learners with HI. Those who are totally hearing impaired (THI), the partial hearing impaired (PHI) and the ones with hearing difficulty but can hear a little (HOH) Learners with HI use sign language in communication. In Kenya they use Kenyan sign language (KSL). This is a language which attaches signs with meaning. It also has its own sign alphabet and word formation.

The music syllabus as prepared by KICD and KNEC comprises the following areas: 1. Basic skills-Melody writing, harmony, Rhythm. 2. History and analysis (Western and African music). 3. General music knowledge (theory of music). 4. Aurals (rhythm, melody, harmony, modulation), and 5. Practicals. It is worth noting that the learners with HI can use sign language to learn music history and analysis. Their challenge is theory and aurals. From their participations in church services, festivals and leisure functions, it can be argued that learners with HI engage in music practicals. This study therefore confined itself to Music theory and aurals (rhythm and melody). Harmony was not part of this study.

To justify the potential of learners with HI in music the following experience is highlighted: During preparation for KMF in the year 2008, Sister Caritas Mikhala, the then Principal of St. Angela Vocational Secondary School for the Deaf Girls in Mumias, approached the researcher of this study with a request. The head teacher wanted the researcher to train her students (Learners with HI) perform the national anthem on the music keyboard. Communication posed a challenge to the trainer since he had no knowledge of sign language.

Nevertheless, the researcher plucked courage and took up the assignment. Using a few hand signs and demonstration of playing the keyboard, the learners with HI picked up. The researcher noticed that enthusiasm and keenness in watching is a big strength of learners with HI. Within a period of one month these learners played the Kenya National Anthem on special functions in school.

It is the results of this experience that inspired and informed the present study. The researcher developed an interest in readings/writings about learners with HI .He visited libraries, internet and held discussions with friends on the performance of learners with HI in Music activities. The researcher saw the potential of these learners in Music theory and aurals.

1.2 Statement of the problem

Learners with HI in Kenya do not learn Music as a subject. These learners are considered incapable of studying music as it basically involves hearing. Various KNEC reports attests to this fact.(e. g. KNEC report 2012) .All the candidates who sat for Music Examination were those with hearing ability. Learners with HI however take part in music activities like: music festivals, church praise and worship songs, the Catholic Mass and other social entertainment music. Both KNEC and KICD syllabi are aligned to learners with hearing ability. The handicap of learners with HI has not been addressed in these syllabi. This study sought to address this gap of exclusion of these learners in studying Music as subject by exploring alternative strategies for teaching Music theory and aurals.

1.3 Objectives of the study

The objectives of this study were to:

1. Establish the challenges likely to be faced by learners with HI in learning Music theory and aurals.
2. Analyze pedagogical challenges likely to be faced by potential music teachers of learners with HI in teaching Music theory and aurals.
3. Explore alternative strategies to be used in teaching Music theory and aurals to the learners with HI.

1.4 Research questions

The study sought to answer the following questions:

1. Which challenges are likely to be faced by learners with HI in learning Music theory and aurals?
2. How can pedagogical challenges likely to be faced by teachers of the HI in teaching Music theory and aurals be overcome?
3. What alternative strategies can be used to enable learners with HI learn music theory and aurals?

1.5 Rationale and significance of the study

Music for learners with HI has been addressed in western countries. In the United Kingdom the National Deaf children's Society which deals with strengths and weaknesses of learners with HI in education matters. In Australia there is established a kitty developed for teaching Music to learners with HI is established. Howe, et, al (2016) argues that the deaf can listen to and make music of their own. Howe, however, does not state how the study of Music Education by learners with HI can be handled, hence this study. Beethoven's nightmare, a band which entertains people in America shows the potential of the HI.

This scenario is consistent with learners with HI in Kenya who also perform music. These learners take part in all social entertainment functions. Dietrich & Tutt (2008) describe the inner hearing aspect of the deaf. Dietrich & Tutt (2008) argue that hearing is not about the ear but the deeper feeling of vibrations. Dietrich & Tutt (2008) however do not state strategies to be used by learners with HI in learning music theory and aurals. This study sought to identify challenges likely to be faced by learners with HI in learning music theory and aurals. The study also sought to identify the challenges likely to be faced by teachers of learners with HI in teaching Music theory and aurals. Findings of this study are meant to assist teachers of learners with HI with strategies for teaching music and aurals. It is the hope of this study that learners with HI can be nurtured into professional musicians. Findings of this study are useful to school administrators in

institutions with learners with HI to expand their curricula by including Music as a teaching subject. Findings of this study could provide alternative approaches for responding to musical sound without necessarily using auditory means. The study will be useful to EARC officers in assessment and placement of learners with HI. Semi-autonomous educational institutions such as KICD, KNEC, and KISE can also use the results of the study to include learners with HI in the Music syllabi.

1.6 Scope of the study

This section covers content, geographical and time scopes.

1.6.1 Content scope

The study focused on challenges likely to be faced by learners with HI in learning Music theory and aurals. Similarly, the study identified challenges likely to be faced by teachers of learners with HI in teaching Music theory and aurals. The study came up with strategies to be used by those teachers.

The study confined itself to rhythm and melody. Harmony and modulation for aurals paper, as indicated in the KNEC syllabus 2015, were not part of this study. The reason was, since aurals are strange to learners with HI, the study could not cover the entire content as contained in the KICD and the KNEC syllabi. It was also hoped that History and analysis together with General Music Knowledge could be handled the same way the other subjects are taught to this category of learners. The study also investigated assessment procedures at MEARC and made improvement suggestions.

1.6.2 Geographical scope

The sites of this study were restricted to four special schools and one assessment centre; all concerned with the education of learners with HI in Kakamega County. These are St. Martin's Primary School for the Deaf, St. Angela Vocational Secondary School for Deaf Girls, Ematundu Vocational Secondary School for Deaf Boys and Mwikhomo Primary

School for the Deaf. Mumias Education Assessment Resource Centre (MEARC) was used as a study Centre.

1.6.3 Time scope

The study was undertaken within a period of six months. During this time, various strategies in teaching Music were tried. Part of the time was spent at MEARC investigating assessment and placement procedures. Sometime was also taken to make a summary of the findings, conclusions and recommendations.

1.7 Limitations

The researcher anticipated having difficulties in communicating with the learners since he was not an expert in sign language. Since the researcher was new to these learners and their teachers, he had difficulties in receiving their co-operation. Learners with HI were also shy to interact with the researcher at the initial stages of the study.

In the face of these challenges, the researcher relied on the assistance of regular teachers to supervise the assignments given to learners with HI. During the study, the researcher however received good cooperation from the teaching staff in terms of co- teaching. The regular teachers assisted the researcher in acquainting himself with sign language. Learners with HI who participated in the study initially seemed shy and new to the area of Music Education. The researcher's practical approach however motivated them. The challenges were hence overcome.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter begins with a brief introduction of the topic at hand especially with focus on Music Education. The section then briefly gives the global situation regarding learners with HI and Music. The chapter then gives scholarly viewpoints on this subject and clearly points out the gaps from previous studies it intends to fill. Finally, the section discusses the theoretical and conceptual frameworks on which the study is based.

2.1 Music and the hearing impaired: Anticipated challenges by learners with HI

Music and the HI in the Western countries has been given adequate attention (https.www.urm.educ.2016). In the UK, there is established the National Deaf Children's Society (NDCS, 2016). This is a charitable organization which assesses HI strengths, skills and opportunities. The society also recommends alternative teaching strategies for learners with HI. University of St. Thomas from UK has developed a teaching tool of instrumental music to the learners with HI.

In Australia, an accommodation kitty has been developed to integrate the learners with HI in music Education alongside the regular learners (https.www.urm.educ, 2016). In this kitty, challenges for learners with HI in Music subject have been addressed. All learners are expected to feel musical sound, both the HI and the regular. Abotomey (2008) elaborates the learning life of learners with HI in Australia. Abotomey (ibid) shows how teachers support their learners in the classroom.

The situation in Kenya is different. For many years, learners with HI have been segregated in matters of Music (Amanya, 2011). The Government of Kenya has, in response to this, put up a special institution, the Kenya Institute of Special Education (KISE). This institution trains teachers and assists in developing teaching and learning materials for Special Needs Learners. Adequate training in handling Music subject seems

not to have been undertaken in this institute given the scenario of Music Education and schools for learners with HI. The subject has not been introduced to learners with HI in all special schools.

Graduates from both the special and regular institutions of higher learning are equipped with pedagogical skills in handling Special Needs Learners (KISE Syllabus 2015-2016). According to the Government of Kenya's policy on integration in Education, all learners are supposed to be taught together regardless of their educational challenge (Sessional Paper on Education, 2005). Adequate training in handling teaching of Music and aurals to learners with HI seems not to have been done in these institutions hence the scenario in our institutions with regard to the HI and music. KNEC timetable for KCSE (2017) has no music for learners with HI.

Kenya Music Festival was started as a European entertainment activity in the year 1927 Musungu (2013). Musungu (ibid) adds that for many years, the festival had only European participants. Over the years, the festival has now included Africans. All learners, from Early Childhood Education (ECD) learners to university students and teachers' clubs have been included. The music performed initially was purely Western. The folk song category was included to take care of the white settler workers (Musungu 2013). Today this is the largest Music Festival in Africa (Abwao, 2014). The Festival has included some performance classes for learners with special needs. Musalia (2011) observes that 'disability is not inability'. Musalia (ibid) argues that the learners with HI have a lot of potential in music as is shown in their participation during music festivals. Teachers are encouraged to give these learners a chance to exploit their musical potential (Kenya Institute of Education, 1996).

Many scholars who are versed with matters of the Hearing Impaired have given views on assessment, placement, care and teaching of this category of learners (Fawkes, 2006, Freiberg, 2002; Obiakor, 2007: Segal, 1974). There are those who see the ability the HI have in matters of Music yet others dismiss them altogether. The viewpoints here range from assessment procedures, care of the special needs learners and teaching methods. From these views, the researcher identified gaps required to be filled.

Freiberg (2002) argues that "the best method in teaching is enriching the visual learning environment. Freiberg (ibid) recommends the use of sign language; finger spelling, speech reading and pictures as the best approaches to teach learners with HI. Freiberg (ibid) however, does not suggest what to do when teaching Music theory and aurals. This study addressed this gap. Obiakor (2007) cites the main problem of the hearing impaired during learning processes as 'language and communication' (167-176). Obiakor (ibid) recommends sign language as the main means of communication by the HI. These views are consistent with the situation of learners with HI in Kenya. Music as a subject however has not been introduced.

Kenya Music Festival Syllabus (2015) introduced a class on verse speaking using sign language. This was to give the learners with HI an opportunity to communicate. This was done with the view that their major challenge is musical hearing.

Amanya (2011), in her paper during the National Adjudicators and Trainers Workshop, admits that the learners with HI are challenged in their perception of melody and harmony. Amanya (ibid) further suggests that the main focus during the training of music to these learners should be rhythm. The view leaves out the component of melody .The content scope of the current study included melody.

Obiakor's (op. cit) recommendation of the use of sign language was experienced in the field where most institutions of learners with HI used sign singing in music activities. Amanya cautions Music adjudicators from expecting uniformity in dances performed by learners with HI. Amanya holds the view that learners with HI respond to rhythm more easily than melody. This view however contradicts the scenario where these learners are given pre-recorded music to direct them when performing western dances. The recorded music has melodies (See fig 2.1 and fig 2.3 in this document).This study included melody in its content scope.

2.2 Challenges likely to be faced by teachers of learners with HI.

Dare & Donovan (1997) suggest ways of caring for the learners with HI. They advocate for proper assessment methods in order to identify correct therapy for these learners. They also encourage stakeholders to undertake correct placement of special needs children in order to be taught well. This is consistent with the situation in Kenya where SNE learners go through EARC for placement tests. Teachers of such learners understand their entry behavior based on recommendations from EARC. These writers propose early diagnosis of children with HI. According to them, learners with HI should be exposed to a lot of musical activities to get acquainted to sound and connect it to meaning. The use of KCPE results by secondary head teachers during form one selection is however not based on EARC assessment.

2.3 Pedagogical viewpoints on teaching music theory and aurals to learners with HI

Aura (2012) in a presentation during the National Adjudicators and Trainers Workshop in Kisumu taught participants a song*; Let the Spirit come down,* using hand signs. She began by giving signs for the words and later connected it to pitches. She then demonstrated section by section and asked the participants to repeat after her. The song was well done by all participants using signs only. Gargiulo (2006) also recommends hand sign communication in teaching music.

From this presentation, it is evident that the HI and the HOH can perform a song using hand signs to their fellow learners and those who understand sign language. This also suggests that they can respond to sound using signs, hence this study on strategies for teaching Music and aurals to learners with HI. From this approach, learners with HI can perform melodies using hand signs. The study provided an opportunity to learners with HI and the to write melodies using hand signs.

Bruner (1966) categorizes children according to age. Bruner (ibid) argues that children can construct their own knowledge by interacting with the environment (Bruner, constructivist theory 1966).Bruner however does not give an approach for teaching music. His suggestion on interactive learning is however relevant to learners with HI.

Orff (1969) came up with an approach to teach music to children. This was an approach that gave children an opportunity to learn music through play. Children would dance, walk, play percussion instruments and clap rhythm in class. This approach came to be known as the Orff schulwerk approach. Orff (ibid) however did not suggest an approach for learners with hearing handicap. This study sought to fill this gap by exploring strategies for teaching learners with HI.

During the St. Angela's Day at St. Angela Vocational Secondary School for the Deaf Girls, the learners performed songs using hand signs during the mass (see Appendix F on paragraphs). Fig 2.2 on pg. 21 also shows Ematundu Vocational School for Deaf Boys students performing a song using hand signs.

Aura's approach of sign singing addresses the challenge of the HI in melodic perception. This study provided learners with HI the opportunity to experience alternative methods to sound perception with the view to confirming their capability to study Music as a subject.

Gargiulo (2006) gives categories of the HI. The categories are: Hard of Hearing (HOH), Totally Hearing Impaired (THI), and the Partially Hearing (PH). This categorization is used in Kenya but these learners study together regardless of these categories. This categorization on learners with HI is consistent with the situation in Kenya. The researcher realized that the HOH were directing the THI during music performances.

Learners with HI are categorized as the HOH, THI, and HI. The HOH learners used support equipment to hear while the THI used hand signs only. The study presented all these categories with an opportunity to take part in aural tests. The scores from the aural tests were added and mean scores calculated to assess the performance of various categories of learners with HI in aural tests.

Gargiulo (ibid) advocates for assessment of these learners in order to come up with the correct methods of handling them in class. This assessment should not lean towards the verbal method. The learner should be assessed in terms of socialization, co-operation, and reception of hand/meaning communication; and by the use of proper gadgets. Gargiulo goes ahead to recommend hand sign communication in teaching. This method only spells

out the alphabet. It does not cover the musical sound (tone). The study gave the opportunity to teachers to explore strategies of teaching learners with HI how to write rhythm and melody. The socialization and the cooperation aspect as advocated by Gargiulo were also used in this study.

2.4 Teaching strategies used to teach learners with HI

Lola & Bev (2002) suggest some methods for teaching the HOH learners. They advise that such learners should be put in a good sitting position to be able to see the instructor. They also recommend that the teacher should face the light and be gentle and friendly to the learners. This is so because learners with HI use sense of sight in learning. Further, they insist on the use of visual teaching aids. They encourage Music teachers to expose students to instruments like drums, keyboards and other percussive instruments. From these suggestions, we see that learners with hearing impairment require a more practical approach. The study provided learners with HI with the opportunity to use music instruments to learn aural skills.

Learners with hearing impairment require a more visual approach to teaching according to Karen (2002). Carol and James (1980) encourage the use of storytelling using pictures. Learners with HI should be provided with books suited to their level to read from time to time. Capper, Frattura & Keyes, (2000) suggest sitting arrangement of the HI in the classroom. They should face the teacher and also be closer .This method was also in the institutions the researcher visited.

These researchers also suggest the use of comics and play in the teaching process such learners should be taught through doing (hands-on approach). The concentration of the HI and HOH can be sustained through seeing, acting, reading and participating in classroom tasks. The study provided the learners to maximum use of senses of sight, feel and touch (experimental research design).

Karen (2002) argues that the best way to teach special needs learners is to enrich their visual learning environment. This includes sign language for the HI, finger spelling, speech reading, charts and pictures. Karen however does not address teaching strategies of teaching Music theory and aurals to the HI.

Gearheart (1973) recommends early and proper screening of special needs learners. Such learners should be referred to assessment centers for screening where they can be placed in their rightful classes. This study investigated the assessment procedures at MEARC. The center however did not provide data concerning learners with HI and music. It dealt with general assessment and placement of SNE learners. The responses from MEARC officers showed the potential of learners with HI in music activities. This center lacked music equipment to assess the musical capability of learners with HI.

Beuton & O' Brien (2001) advocate for the use of hearing aids as recommended by health practitioners. They also recommend the use of amplifiers to magnify sound for learners with hearing impairment. This is consistent with the situation in Kenyan institutions for learners with HI. The hearing aids did not effectively address the issue of music. The aids were used for general sound perception.

Dell & Donk (2007) suggest the modification of teaching approaches to suit special needs learners. It is important to identify the strengths and weaknesses of these learners. In doing so, the weaknesses can be turned into opportunities once the challenges are identified. The Government of Kenya also recommends integrated education; through which learners can support each other. This study sought modification strategies in teaching and assessment. In the absence of the hearing sense, the study came up with alternative strategies for teaching Music and aurals to learners with HI.

Hegarty & Alur (2001) recommend the integration of learners with HI in the regular curriculum. They suggest that these learners should be taught alone first before mainstreaming them in the regular program. In Kenya, learners with HI learn in their own special institutions. They are also taught by teachers who have been trained to handle SNE learners. These teachers are not trained to teach Music as a subject.

Frederickson & Cline (2009) advocate for inclusion and integration of learners with special needs in the regular curriculum. Farrell (2001) describes integration as a process of making modifications on teaching strategies to the Special Education Needs (SEN) learners to enable them to join their regular counterparts. This means that strategies used for regular learners are not adjusted to cope with the SEN.

Farrell (ibid) further describes inclusion as the process of institutions restructuring their learning strategies to incorporate SEN. In Kenya, the situation is different since learners with HI learn in their separate institutions. They have not been included in the Music curriculum.

Segal (1974) suggests proper classroom organization. In the classroom there should be supporting learning materials, qualified interpreters in case of learners with HI and use of hearing gadgets and equipment for practical lessons. Segal however does not give any guidance in teaching music.

2.5 Musical ability among the deaf

'Deaf people can do anything except hear,' according to Howe, et al., (2016). Hilterman is an example of a deaf person who played drums with his siblings in a band. The deaf therefore enjoy and love Music. This poses the question of alternative modes of hearing for the deaf. Is it possible to hear without ears? Is it possible for the deaf to make music, listen to music and appreciate music in the absence of ears? Sign language is paramount among the deaf culture (Howe, *et al.*, 2016).

Beethoven's Nightmare is an example of a band in America that uses American Sign Language (ASL) to create music albums. This deaf rock band is found at the Gillandet University for Deaf Learners and it uses guitars, drums, keyboards and other orchestral instruments. This shows that there is rhythm inside the bodies of the deaf (Howe, *et al.*, (2016). The band continues to entertain on the West coast of America mainly to deaf audiences but to the hearing as well.

Howe, *et al*. (2016) further state that feeling vibrations is an integral part of the deaf's experience of music. Hilterman the singer is quoted by Howe, *et al* (2016) as saying that, 'hearing is not about the ear. It is about what you hear, the beat, rhythm, vibrations inside your body, not the ear'

Deafness is a source of musical aligning and not a disability element to music (Maler, 2016). The deaf appreciate music through listening through vibrations (inner hearing), hearing through playing instruments and watching sign language songs (song signing). Performances incorporate sign language: deaf song signers create music in sign language thus sign language music.

Bahan (2006) places song signing into two categories: percussion songs (arranging songs in rhythms; and, translated songs (translating song lyrics in ASL and performing them). Song signing videos are an important avenue for self-expression among the deaf. Deaf signers therefore create their own music to express their culture. This study affirms that learners with HI have the potential to study Music subject.

Darrow (2006) Professor of Music therapy and Music Education has written many research articles on the teaching of music to learners with HI. Darrow (ibid) gives views on how music changes emotions. In her research which compared the deaf learners and the regular learners Alice argues that hearing has a lot of effect on emotional achievement. Alice (Ibid) goes ahead to state from her findings that the hearing learners make emotional meaning from music faster than learners with HI. From the above argument the researcher already shows that learners with HI require hearing sense. In the absence of sense of hearing, the present study therefore sought to find alternative ways to perceive sound with the purpose of teaching music to learners with HI.

Darrow goes ahead to suggest that learners with HI should be given support through classroom and teaching aids adaptations. Teaching/Learning aids should be modified to suit learners with HI. In the deaf culture the researcher finds the main challenges by teachers as covering wide syllabi and evaluation of learners with HI after teaching. The researcher suggests adjustment of examination of learners with HI considering their hearing challenge.

Darrow (Ibid) recommends small classes and in case of integration she encourages patience on the part of teachers of learners with HI. The current study found this challenge in institutions visited. The study has recommended the adjustment of the KNEC and KICD syllabi to put in consideration the challenge of learners with HI.

The researcher above has also done a study on attitude of learners with hearing ability to learners with HI. The results of her study reveal that learners with hearing ability have a negative attitude to learners with HI in matters of Music. The researcher suggests that teachers of learners with HI should expose them to a lot of music activities. Teachers should also take good care of this special group and make suitable classroom adaptations in view of the handicap of learners with HI. This classroom adaptation includes: sitting arrangement, teaching strategies and use of classroom learning materials. The current study gave learners with HI the chance to play instruments and practice dances.

The researcher recommends use of sign language. In all the institutions visited the main media of communication was KSL. From the journals of Alice-Ann there is evidence that learners with HI can do Music as a subject. In many western countries the HI are included in music Education. The scenario is different in Kenya where music is not offered to learners with HI. This study therefore sought to explore alternative strategies to teach music theory and aurals to learners with HI.

The views of the above scholars in summary show the following:

- Western countries have incorporated learners with HI in their music activities (Paasche, Gorrill & Strom, 2004).
- Kenya has not given learners with HI the opportunity to learn Music as a subject (KNEC Report, 2018).
- Sign language is the main communication tool by learners with HI (Obiakor, 2007).
- Classroom organization, including sitting arrangement, is important while teaching learners with HI (Freiberg, 2002).

- Assessment of learners with HI plays an important role in placing them in various classes (Gargiulo, 2006; Gearheart, 1973).
- Learners with HI should be exposed to many music instruments while learning music (Farrell, 2001).
- Potential music teachers of learners with HI need to be trained in order to handle the subject effectively.

2.6 Theoretical Framework

This study was guided by Jerome Bruner's Constructivist Theory and the Orff Schulwerk Approach.

2.6.1 Jerome Bruner's constructivist theory (1966)

Jerome Bruner was born blind in New York City in 1915. At the age of two, he underwent a surgery to restore his sight which gave him limited vision. He then tried to spend the rest of his life trying to understand how the human mind perceives the world (www.symplypsychology.org/bruner.html). He undertook his master's degree in the year 1939 and his doctorate degree in 1941.

Bruner (1966) advocated for learning in stages; these are iconic (1-6 years), symbolic (6-7 years) and teenage stage (7 -14 years). During iconic stage, learners store images, diagrams, maps and pictures in their mind. During the symbolic stage, learners store information as a cord for example, language and mathematics. In the teenage stage, learners synthesize and analyze information.

Jerome Bruner's Constructivist Theory, which was developed in 1966, emphasizes change of behavior through the learner's own initiative. The inner behaviorism in a learner assists in learning. The theory also puts into account ages of learners. The learner should gradually be taught content. Simple structures should be given to lower ages and complex content to older learners.

Bruner argues that the learner should be given the opportunity to do things practically. According to him "children learn by themselves through interaction with the environment." Children should observe, touch, and feel, move and play with whatever they encounter in their environment (Murray, 1963). This theory is relevant to the study since the study seeks to establish whether learners with HI can perceive music through touch, feel, play and dance.

This study adopted the Constructivist Theory through dance and instrumentation. Learners with HI were given dances to perform and play instruments. The rhythms and melodies were written down. The strata for study were the classes of the learners to test the cognitive aspect in terms of age with emphasis to Music theory and aurals. Learners observed demonstration of playing music instruments and imitated the same. Aurals tests were administered to learners with HI with the view to identifying their response to sound.

Bruner believes in the gradual cognitive development of learners as they grow. The study assessed response to sound by various ages of learners with HI. This was based on reports from MEARC and results from aural tests. The following principles by Brunner were tested in this study:

1. **The Principle of structure:** This is the system where a child is inquisitive and enthusiastic to learn new things. The research provided learners with HI with the chance to practice and write the music. They walked, ran, moved and danced to rhythm. They wrote down those rhythms.

2. **The Principle of motivation:** A child needs a conducive environment to learn better. The study motivated learners with HI using classroom activities like tapping, movement, and dance and playing of musical instruments. Through these activities, learners with HI learnt Music and aurals by recording their activities.

3. **The Principle of sequence:** This is the orderly way of arranging subject matter to learners. The research came up with a logical way of disseminating content to learners.

Musical tasks on rhythm and melody were given to learners from simple to complex ones. Their responses were recorded.

In this study, Bruner's symbolic stage (6-7years) and teenage stage (8-14 years) were used at St. Martin's Primary School. At St Angela Vocational Secondary School for the Deaf Girls, respondents were selected from Form One to four, regardless of their age.

2.6.2 Relevance of Brunner's theory to teaching Music theory and aurals

Children construct their own knowledge. The study gave learners the opportunity to observe, dance, feel and touch as they learnt Music theory and aurals. Learners played instruments and wrote down what they had played.

Bruner (1960) advocated for learners being given basic concepts rather than cramming facts. This study adopted a hands-on approach where sampled learners performed musical tasks. During the learning process, the teachers supervised various activities as they were performed by the learners.

Logical organization of content is important. The music teachers were assisted through this study to organize their music content from simple to complex. Various activities were listed in order of difficulty and given to learners in that order.

The learners used the environment to acquire knowledge. The sampled learners used local material to construct instruments and practice local music using the instruments. The instruments were also used to create rhythm and melody.

Group learning is essential in learning process. Through group dances, learners with HI used this method. They shared costumes and instruments; and learnt from each other as they created formations in the dance. Coordination of movement proved a challenge but sign language and direction from the teachers helped to overcome this challenge. During performances of western dances e.g. Scottish dance, prerecorded music was used to accompany the dance. The dance director however stood at a strategic position and used hand signs to guide the dancers.

Brunner advocated for simple to complex approach. Since music learning is new to the HI this approach could be tried starting with simple practical performances to formalized learning sessions .Learners with HI were exposed to known music before being exposed to new music. Simple familiar rhythms and melodies were performed before moving to complex ones. They started with hymns used in church. They danced to them and were given other musicals.

Figure 2.1 illustrates this point.

Figure 2.1 St. Martin's primary school for the deaf performing a scottish dance

Source: St. Martin's Primary School teacher, Date: February 2018, Place: St. Peter's Primary School Grounds

2.6.3 Carl Orff's Schulwerk – "School Work" (1969)

Carl Orff was born in Munich on 10th July 1895. Being a musician and a song writer based in Germany. (Orff 1969) developed elemental music fusing tone, dance, poetry, image, design and theoretical gesture. Orff, a German composer, is remembered primarily for his musical/dramatic stage works based on ancient and classic texts. The pedagogical ideas that became Orff-Schulwerk (literally "school work") originated in the 1920s. Orff's Schulwerk approach encompasses music, movement, drama and speech.

The approach uses everyday activity to make music child centered. Its basic system is a friendly approach to teaching music. The approach uses environmental objects as teaching and learning aids during music lesson.

Orff suggests that music should be a simplified concept because with this, a child freely learns. Orff (ibid) also argues that a child should not be subjected to exam pressure. From this concept, Orff gives a perception that a classroom should be full of fun and play.

Cohesion and parents' participation should be incorporated in learning. Orff also gives hands on approach whereby a learner should do tasks by experiencing and participating. The approach stimulates learners as they grasp concepts. This approach also helps the learner to understand time, rhythm, form, line, color, design, space and mood in the simplest way possible. From this concept, learners are able to sing, play instruments, dance and learn music through play.

The approach uses percussion instruments, for example, xylophones, metalophones, gongs, marimbas, drums, among others. The target respondents of this study used drums, shakers, metal rings, keyboard and marimba to experiment strategies tried by the researcher and the regular corporate teachers.

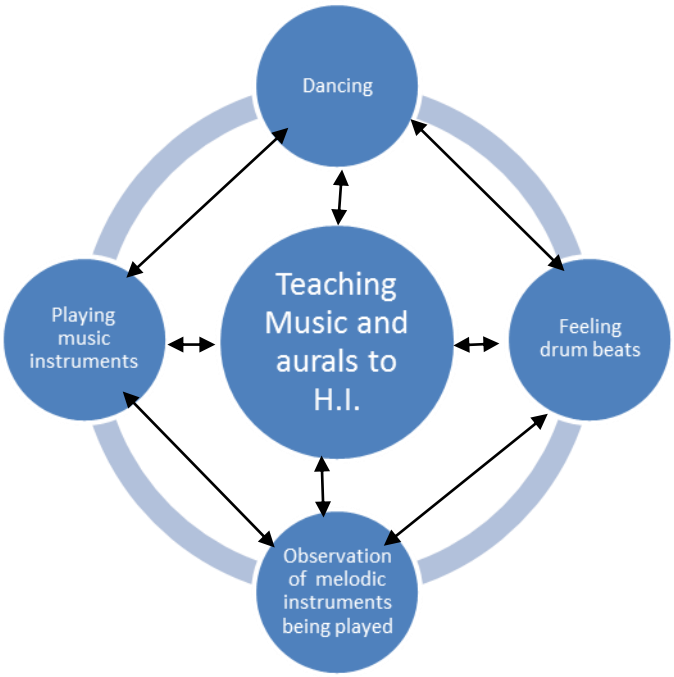
2.6.4 Relevance of Orff Schulwerk approach to the study

With Orff's approach, learners with HI can play instruments and can also be able to feel vibrations. Another relevance to this study is that this approach encourages a learner to play in class. The learners with HI are also able to participate, experience knowledge and practice time and rhythm. The approach also gave the learners with HI an opportunity to sign sing. Percussion instruments were used in the classroom to create rhythm and melody.

Orff (1969) recommends play and movement as a means to rhythmic perception. In this approach learners should play, dance, tap, clap and speak in rhythm. Using this approach the study gave learners with HI the opportunity to observe the demonstration of playing instruments, dancing to rhythm, playing instruments and feeling sound vibration. The

Orff's approach gives learners a world of play as they learn. In the absence of the hearing sense, this hands on approach gives the learners with HI an opportunity to use other senses to learn music as a subject.

2.7 Conceptual framework and measurement of variables



Source: Researcher (2019)

From the framework above the central idea is learning music theory and aurals. It is connected to observation of playing of instruments. Learners with HI observed and emulated the teacher. They played as they learnt Music. Feeling drum beats is connected to learning. As they felt drum beats learners with HI notated the rhythms felt. The teacher marked the rhythms notated. Dancing is also connected to learning music. They danced and with the guidance of the teacher they notated the rhythms danced to.

The central concept there is teaching music theory and aurals which is the main subject of the study. For the above to take place several dependable variables have been indicate in the diagram namely: Playing music instruments, Feeling drum beats, Observation of

music instruments being played and dancing. Teaching music theory and aurals depends on playing of music instruments. As they played instruments learners with HI also learnt Music. The concepts are interwoven because learners with HI learn practically through what they observe, play, feel and dance to.

From the drawing, four major concepts were brought on board to guide the objectives of the study. These were: Instrumentation, Dancing, Feeling vibrations, and Observation.

Learners with HI played music instruments and were able to grasp the concept of rhythm and melody. Initially demonstrations were conducted to them as they observed then they repeated what was demonstrated. The sense of sight was effectively used as the teacher demonstrated the playing of music instruments. They repeated the same tune played on keyboard. They also danced to the rhythm of the music.

Learners with HI observed playing of instruments and rhythmic figures and later wrote what they could see being played. Sign singing was also experimented. Learners with HI used hand signs and solfa ladder to write melodies. The melodies and the rhythms were marked and their responses recorded.

Learners with HI felt vibrations of drums as played on their backs by their partners and tried to write the rhythms felt. They also danced to rhythm and wrote the rhythmic figures. The responses were assembled and marked. The marks were then spread on a distribution curve and the standard deviation calculated.

Mugenda & Mugenda (2003) recommend the use of numerals to represent attributes or measurement of variables. To obtain the most accurate measurement, a standard deviation is important (Stacks & Hockings, 1998). This is the manner in which all the scores from variables spread around the mean. This study followed this system. Analysis of all data in this study was based on percentages and presented using graphs, charts and tables.

Figure 2.2: Students of ematundu vocational secondary school for the deaf boys sign singing a melody

Source: Researcher, Date: July, 15 2019, Place: Ematundu Vocational Secondary School for the Deaf Boys. Photo taken with authority of school administration during which the Principal was interviewed.

CHAPTER THREE
METHODOLOGY

3.0 Introduction

This chapter involves the pedagogical approaches that were used in carrying out this study. It highlights the chosen research design, the physical area of study, target population, sampling strategies, sample size of target population, research instruments, pre-testing techniques, validity and reliability of data collected, data collection techniques, data analysis procedures, logistical and ethical issues pertaining to the study and finally conceptual framework and measurement of variables.

3.1 Research design

The study employed cross-sectional descriptive and quasi experimental research designs. Descriptive design is a research design concerned with describing the state of affairs as they exist (Kombo & Tromp (2006), Mugenda & Mugenda (2003). Quasi experimental research design on the other hand is an empirical interventional study design on target population without random assignment (Serem, Boit and Wanyama, 2013). In such experiments the researcher has the freedom to control treatment of variables. This design was chosen to give a trial to various teaching strategies on learners with HI.

3.1.1 Descriptive research design

Through descriptive design, the study sought data from questionnaires administered to learners with HI and their teachers. The responses from these questionnaires were collected for analysis. They were tabulated and scored. Cross-sectional research design was used because of the target groups. Data was to be collected from learners with HI, their teachers, administrators and specialists from MEARC.

Interview schedules were used to collect data from Education Officers and administrators. At MEARC, interviews were conducted guided by the prepared interview

schedules. Views from administrators and music trainers through interviews were also discussed and recorded

Observation schedules were also used during classroom sessions to critique the strategies used by the regular teachers. Data from these observation schedules was collected for analysis. Learners' challenges were sought and recorded. As learner did aural test observation schedules were used to write reports on their ability. Observation schedules were also used at MEARC to collect data on assessment procedures.

3.1.2 Quasi experimental design

Experimental research design is concerned with the description and analysis of what would be, or what would occur, under carefully controlled conditions (Stacks & Hockings, 1998, Zanden, 1993). The design provides a method of investigation to help derive basic relationships among phenomena under controlled conditions or, more simply, to identify the conditions underlying the occurrence of a given phenomenon (Zanden, 1993).

People who conduct experiments are engaged in deliberate and systematic manipulations of certain stimuli or environmental conditions with a keen eye on finding out how such manipulations affect the behavior of the subject. They work with two groups; experimental and control groups (Burton and Bartlett, 2009, Claus, 2009; Thomas, 2009). In this design, change is introduced in one group (the experimental group) but not in the other group (control group). This design has the immediate purpose of predicting events in the experimental setting but with an aim of generalizing the findings beyond the confines of the experiment (Stacks & Hocking, 1998 Zanden 1993).

This study experimented on the following strategies: Feeling of drum beats, observation and playing musical instruments, and dancing to the rhythms of the music instruments. A hypothesis is an idea that is set to be tested (Serem,Boit and Wanyama 2013, Mugenda and Mugenda,1999).It is an academic guess to be proved.

The experiments were based on a null hypothesis given the nature of respondents(learners with HI)The hypothesis tested was whether sense of feel, sight and touch would replace sense of hearing in assisting learners with HI to study Music theory and aurals. (Null hypothesis, Serem ,Boit and Wanyama,2013).This hypothesis tests an idea that is in doubt, an assumption or a guess. When the null or zero hypothesis is rejected then the alternative hypothesis tested is retained. Since the strategies tested are not practiced this hypothesis was relevant to the study.

3.2 Physical area of the study

The study purposively targeted sampled Schools in Kakamega County. The schools are: St. Martin's Primary School for the HI and St. Angela Vocational Secondary School for the HI Girls, Ematundu Vocational Secondary School and Mwikhomo Primary School for the HI. Mumias Educational Assessment Resource Center was included. The schools have boarding facilities and admit students from all over the country. The learners therefore reflect the face of Kenya.

3.3 Target population

Target population for this study was all learners with HI and their teachers in Kenya. In addition, the target population also included education officials in the region and country as a whole, especially those concerned with education policy formulation. Trainers of learners with HI in music during KMF also participated in the study. Experts of learners with HI with understanding in music activities were also contacted.

The study sampled 30% of the respondents from each class in both secondary and primary sections. Bui (2013) considers 30% of a sample as being representative enough of the entire population. Gender balance was considered in the sampling. Teachers who train music for the KMF to the learners with HI were interviewed. They also participated in the actual training and teaching using strategies experimented.

Head teachers of the sampled schools were also interviewed to give the background information of the learners. Their views on teaching of music to these learners with HI were also sought.

At the EARC, 30% of the officers were approached to provide information on assessment procedures. In addition, some specialists of learners with HI were consulted. Each stratum (class) produced 10 respondents for this study. The primary school had 80 respondents as well as the secondary school.

3.3.1 Sampling strategies

The study adopted purposive, stratified and random sampling strategies. Purposive sampling strategy was used to give the researcher the freedom to choose key respondents to be used for a specific purpose to support the study, in this case, the learners with HI. Among the learners with HI were HOH, PHI and THI. The purpose was to find out the impact of tried teaching strategies to those various categories of learners with HI. This strategy enabled the researcher to choose specific respondents to serve a specific purpose with regard to the study. Purposive sampling was used to identify the EARC officers and the teachers to take part in the study. This strategy was also used to identify specialists of learners with HI to participate in the study. Administrators of institutions for learners with HI and music trainers who took part in the study were also identified using this strategy.

The stratified strategy was employed to select respondents from various classes, across the two genders and of various levels of hearing ability. This strategy was used to enable the researcher to compare the performance of various age groups in various classes in aural tests. The strategy was also used for easy access of respondents in their own class. 30% of the population of each class was selected for the study. The strategy generally involved three major strata i.e. primary school, secondary school and MEARC. These three strata had different environmental challenges and conditions hence their separation during the study. These strategies enabled the researcher to collect data easily since each stratum had similar conditions. It helped in analyzing the results for each category.

From each of the three strata above, the random sampling strategy was employed in order to give all members from the target population an equal chance to participate in the study. From each class in both the primary and secondary sections, 30% of the respondents were chosen at random. The reason for this method of sampling was to give each pupil or student a fair opportunity to participate in the study. In this sampling strategy, the study established the aural perception levels of learners of various classes. Each respondent therefore had an equal opportunity of selection and participation in the study. This would hence produce more representative results of the aural perceptions of learners of various classes.

3.3.2 Sample size

The study sampled 30% of learners from two primary schools and two secondary schools which Stacks & Hocking (1998) consider as being satisfactorily representative. Mugenda & Mugenda (2003), observe that the 30% size of respondents of a study should be as large as possible. They continue to argue that the smaller the sample size the bigger the sampling error and therefore the more likeliness of unreliable outcomes of the study. This study adopted a 30% sample consisting of 80 pupils and 80 students in both the primary and secondary schools.

3.4 Research instruments

Data for this study was acquired from primary and secondary sources. Primary data was collected through questionnaires, observation schedules, and interview schedules.

3.4.1 Questionnaires

Questionnaires were used to collect data from learners due to their large number. Teachers were also subjected to the same instrument because they needed time for answering the questions given their busy schedules.

Both open and closed ended questionnaires were used to collect data from teachers and administrators concerned with learners with HI. Questionnaires for the learners with HI were also constructed to get data from them.

3.4.2 Observation schedules

Observation schedules on the other hand were used to collect data as it was observed during the study. Learners with HI were given tasks on the topic of the study. As they performed the tasks, the researcher made his observations and recorded them. Specifically, the learners with HI were subjected to teaching strategies during music aural lessons. Their participation and performance was recorded using scores.

The regular teachers were also observed by the researcher as they taught. Their methodologies were compared and analysed. As the learners with HI constructed their own music instruments, the researcher also observed them and scored them accordingly. Learners with HI observed demonstration of playing instruments. They then played some rhythms and melodies. Their work was marked and recorded for analysis.

3.4.3 Interview schedules

Interview schedules were employed to obtain information from selected stakeholders in the education sector in the region. The interview schedules were structured .They had mixed questions, thus both closed and open ended .These professionals had limited time for filling questionnaires. Interviews are flexible and interactive. They allowed for deeper probing of the issues under coverage by this research. This instrument was suitable for education officers because it gave them the freedom to give their views. Data from the interview schedules was collected and analyzed. Interview schedules were used to collect data from selected specialists of learners with HI and administrators because they needed to be reached to give full details which could not be obtained from questionnaires. These officers also needed time with the researcher to respond to various concerns of the study.

Secondary data on the other hand was collected through searches in libraries and the internet. Libraries such as the postmodern library of Kenyatta University, Macmillan,

Jomo Kenyatta Memorial Library of the University of Nairobi, KISE, as well as KICD among other libraries for learners with HI were visited. In addition, relevant online sources were sought. The KISE library provided special information with regards to SNE in general and the HI in particular. Various journals and related research works were accessed for comparison and analysis. The researcher also read related studies on this topic for interrogation. Gaps identified in these studies were addressed in the present study. A critique of the information on the HI and teaching strategies was done with the view to identifying approaches to teaching music to learners with HI.

3.5. Research equipment

In this study, musical instruments were used. This is because the study was to test the sound perception of learners with HI. Some of the instruments used were: keyboard, melodicas, drums, percussion instruments, flash discs, computers and musical costumes.

3.5.1 Melodic instruments

Keyboards and melodicas were played to produce pitch for the learners to observe. The learners in turn emulated the playing. The researcher then gave musical tasks after the playing. The learners' work was marked and results recorded.

3.5.2 Percussion instruments

Percussion instruments on the other hand gave rhythm during music demonstration sessions. The learners with HI observed the researcher play rhythms from percussion instruments. The learners emulated the playing. The researcher then gave rhythmic aural tests to the learners. Their work was marked and recorded. The above activities were conducted to three main categories of learners with HI namely: Hard of hearing (HOH), partial hearing (PH) and total hearing impaired (THI).

3.5.3 Electronic instruments

Computers and mobile phones were used to record and visualize various dances and other musicals. Flash discs and cameras were also used to store data while in the field.

Some learners with HI were not subjected to these strategies. The purpose was to establish whether these strategies could be used to teach music to this category of learners. The results from all these learners after being examined in various tests were recorded and analyzed with the view of identifying the effectiveness of these strategies of teaching music and aurals

3.6 Pilot study

A pilot study was carried out on the various instruments and equipment for this study in the same sites that hosted the research, but with learners with HI that were not part of the main study. This was conducted prior to the main study. This was to ascertain the accurateness (validity) of the instruments and the equipment. It was also to show the reliability of the same prior to the study by repeating the experiments and comparing results. Results from research instruments from various institutions were also analyzed to test reliability of the instruments.

3.7 Data collection techniques

The study employed the use of questionnaires for teachers and learners with HI. The questionnaires were taken to the four schools (St. Angela, St. Martins, Ematundu special school for the deaf boys and Mwikhomo).

3.7.1 Questionnaires

Each school received 40 questionnaires. The regular teachers assisted the researcher to sample the respondents. The questionnaires remained in the schools for a week to be filled. The researcher then went to pick them for analysis.

3.7.2 Interview schedules

Interview schedules were used for education officials and administrators to collect data. The researcher conducted the interviews guided by the schedules. The administrators were visited in their stations. The researcher personally tested and observed learners on

their aural perception of music. Scores from aural tests were tabulated after marking. The responses of the learners in aural tests were recorded.

3.7.3 Aural tests

80 students were selected to participate in the aural tests, and the researcher, with the assistance of four teachers, was able to instruct the learners on what was expected on them in this exercise. Two large rooms were used to accommodate the large number of respondents. The old methods experimented were theoretical where the teachers lecturing through sign language. The new methods that were experimented were observation and emulation, dancing, movement, playing music instruments and feeling beats. The results were captured and recorded. The learners were taught using sight demonstration of sound and their responses recorded. Related researches on this topic were also sought. Comparisons of these researches with the situation in Kenya were made.

Strategy 1: Feeling of beats

Under the first strategy, each class randomly gave 20 participants. From each class, two groups of 10 were formed. One group felt drum beats played on the backs and wrote down rhythm as directed by the teacher. The other group was directed theoretically to write rhythms down without feeling the drum beats. The rhythms of each group were marked and recorded.

Strategy 2: Observation and playing instruments

In the second strategy, a group of 10 learners was randomly selected and asked to observe the teacher demonstrate the playing of a drum. They emulated the playing and wrote down the rhythms with the guidance of the teacher. The teacher then demonstrated a melody on the keyboard. The learners emulated the same and wrote down the melody under the guidance of the teacher. Another group of 10 learners was randomly selected in the same class and taught rhythm and melody theoretically. The group wrote down the rhythms and melody tested by the teacher. The rhythms and melodies from the two groups were marked by the teacher and the results recorded.

Strategy 3: Dancing and writing

Under the third strategy, one group of 10 learners danced to rhythm and wrote down the same rhythm they had danced to. Another group of 10 learners wrote rhythm given to them by the teacher without dancing to it. The rhythm was marked and the results recorded. The above experiments were repeated with various categories of learners with HI. i.e. HOH, THI and PHI. This was done to establish the effect of various tried strategies to these various categories of learners in terms of responding to sound.

The above experiment shows various strategies experimented in the teaching of Music theory and aurals. The strategies were administered to one group (experimental group). The same strategies were not administered to the other group (control group). These experiments tested whether sense of sight, feeling and touch could be used to learn Music subject in the absence of the sense of hearing.

3.8 Data Analysis procedures

3.8.1 Questionnaires

Questionnaires were collected and frequency of answering each question done. Numerals were assigned to each question in terms of popularity. An average was done to get the trend of answers.

This data was presented in charts, graphs and tables. Responses from questionnaires were weighted on various scores, giving the views of each respondent. The weighting was done in five categories, namely Strongly Agree (SA: 5) Agree (A: 4), Not Sure (NS: 3), Disagree (D: 2), Strongly Disagree (SD: 1). Mean scores of values assigned to various variables were calculated. Variability and deviations from the results were also noted for discussion.

3.8.2 Interview schedules

The interview schedules were used to collect data from administrators of institutions of learners with HI and MEARC. The responses were collected and the views analyzed in graphs and tables. This instrument was used because these respondents are busy and they were prepared in advance for the interviews.

3.8.3 Aural tests

Results from aural tests were tallied according to the classes of the learners. Dance as a form of rhythmic perception tool was observed. Rhythms in dance and movement were marked and results recorded using frequency distribution technique. Demonstration of rhythm was done then aural tests were administered and the results analyzed. The scores of learners were added and a mean score calculated. The scores obtained after using each teaching strategy were recorded. Their means were also calculated.(Serem, Boit and Wanyama 2013).

Melodies from sight reading were recorded and tallied accordingly. The results were then presented using tables, charts and graphs.

3.9 Validity and reliability

Validity is the accuracy and meaningfulness of inferences based on research results (Mugenda & Mugenda, 2003).The main respondents in the study were learners with HI, their teachers, administrators and specialists versed with learners with HI and music. Target respondents were faced with this problem. The researcher's approach of participatory teaching provided true observation and experiences. Mumias EARC gave valid statistics and tangible information on assessment and placement of learners with HI. MEARC also used accurate and tested gadgets for assessment. Research instruments and equipment were pretested before being used in the study. Data was presented of after adding up the scores for each participant and averaging them.

Reliability on the other hand is the measure of the extent to which an instrument yields consistent results or data after repeated trials (‘Mugenda & Mugenda, 2003). To achieve this, the researcher followed proper guidelines on preparation of research instruments (Serem, Boit and Wanyama, 2013).Target schools were well established to handle the HI learners.

The researcher constructed questionnaires relevant to learners with HI and their teachers. The questions set reflected the objectives of the study. Interview schedules and observation schedules focused on the research questions and objectives of this study. These schedules were used for obtaining data from MEARC officers, administrators of HI institutions, music trainers of learners with HI and HI specialists. The study also provided a conducive environment to the interviewees. Confidentiality of the respondents was adhered to during the study. Research equipment was tuned to give the desired pitch and rhythm. Learners with HI were strategically arranged in their class to be able to observe demonstrations of the playing of these music instruments. Aural tests given to the learners were prepared based on their level of ability.

3.10 Logistical and ethical considerations

Authority to carry out the study was sought from National Commission for Science and Technology and the Ministry of Education. The researcher also sought permission to carry out the study from the Ministry of Education, Science and Technology at the County and Sub-County level .Consent was sought from parents of the learners with HI through the administrators of their institutions. The objectives of the study were explained to all respondents. They were assured that all information given by them would be confidential and would be used only for the purpose of this study. Confidentiality of data collected was guaranteed to all respondents.

CHAPTER FOUR
PRESENTATION AND ANALYSIS OF DATA

4.0 Introduction

This chapter incorporates responses from learners with HI, their teachers, administrators and EARC officers. The chapter also discusses the strategies of learning music theory and aurals which were experimented learners with HI. It then provides an analysis of the data presented. The data collected has been analyzed.

The researcher took three days to collect all the data from the learners with HI, their teachers and EARC officers. The first day, a Tuesday, was spent with the EARC officers, whose facility is in the serene environment of Ekama, within the Mumias Triangle, neighboring the Kakamega-Bungoma Road and Mumias Cultural Centre. The researcher was lucky to be accorded the undivided attention of the EARC officers since "most of the clients come in on Mondays," one of the officers stated. Occasionally, a client who had failed to honor an appointment on Monday would disrupt the session.

The researcher additionally spent two more days holding interviews with key respondents in two other institutions: ACK Ematundu Vocational Secondary School for the Deaf Boys in Khwisero Sub-County and Mwikhomo Primary School for the Deaf in Lurambi Sub-County.

The next two days were spent collecting data at St. Angela's Vocational School for the Deaf Girls, which is located at the Mumias Mission area, behind the mortuary belonging to St. Mary's Hospital, a Catholic sponsored hospital which is the biggest facility between Mumias and Bungoma, and understandably attracts many clients. The teachers took time to prepare the participating students; and the researcher was taught some basic sign language in order to facilitate the smooth execution of the exercise. The Thursday was particularly hectic with a huge amount of interference from noise caused by funeral hearses picking bodies from the mortuary. The researcher proceeded to collect views as is shown in the following sections.

4.1 Challenges likely to be faced by learners with HI in learning music theory and aurals.

The following section present an analysis of the findings related to the first objective of the study i.e. the challenges likely to be faced by learners with HI in learning music theory and aurals.

4.1.1 Negative attitude to the learners with HI and music

The researcher, with the assistance of one of the teachers, asked the learners to give their views on how they are treated in matters of music. Majority felt there was negative attitude towards them in matters of music, particularly formal learning of the subject. Their responses are recorded below.

Table 4.1: Negative attitude to the learners with HI and music

Question	Responses	Max. score	Count	Percent
Negative attitude to the learners with HI makes them not learn music	Strongly agree	5	3	75.0%
	Agree	4	1	25.0%
	Not sure	3	0	0.0%
	Disagree	2	0	0.0%
	Strongly disagree	1	0	0.0%

Source: Research data (2019)

From Table 4.1, 100% of the respondents agreed that negative attitude to the HI affects the learning of Music theory and aurals by the learners with HI. None of them also disagreed with this fact. The same question was given to the teachers. Their responses are recorded below. As the chart reveals 75% of the respondents strongly agreed to this fact where as 25% agreed.

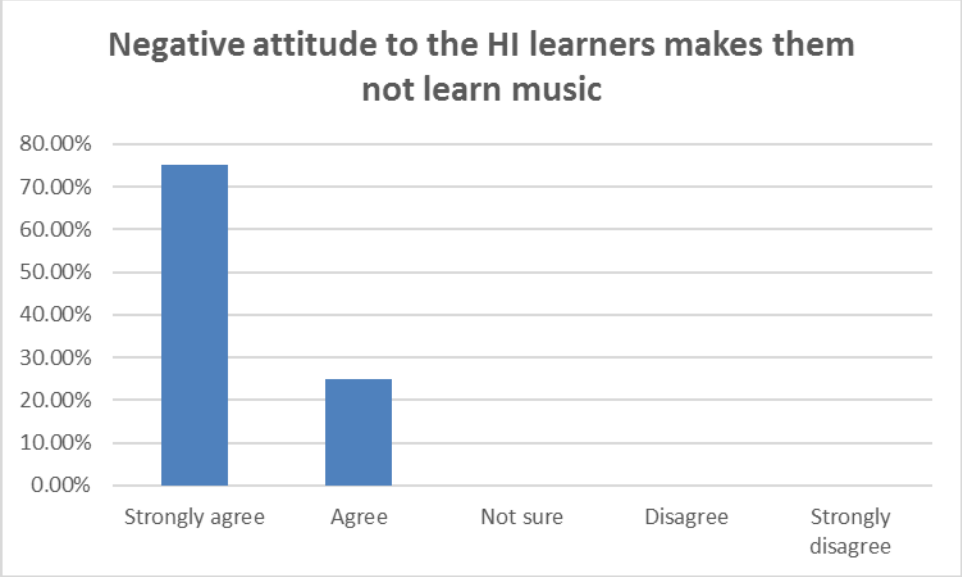


Chart 4.1: Negative attitude to the learners with HI and music

4.1.2 Adequacy of learning materials for teaching the learners with HI

Upon visiting the research site, the researcher observed that there were some music instruments used for music festivals and church services. He therefore posed a question to the teachers on whether adequacy of music learning materials was an impediment to teaching Music to the HI. They responded as follows.

Table 4.2: Adequacy of learning materials for teaching the learners with HI

Question	Responses	Max. score	Count	Percent
Learning materials to teach HI Music and aurals are inadequate	Strongly agree	5	2	50.0%
	Agree	4	1	25.0%
	Not sure	3	1	25.0%
	Disagree	2	0	0.0%
	Strongly disagree	1	0	0.0%

Source: Research data (2019)

From the above results, most respondents (75%) agreed that the learning materials for teaching the HI are inadequate, while a minority (25%) was non-committal on the same. These responses corresponded to what was found in the field. The institutions visited did not have most of the music equipment to enable the learning of music and aurals to take place. These institutions had music instruments for KMF and entertainment during functions in the school. The instruments were mostly rhythmic. Melodic instruments e.g. the piano were missing.

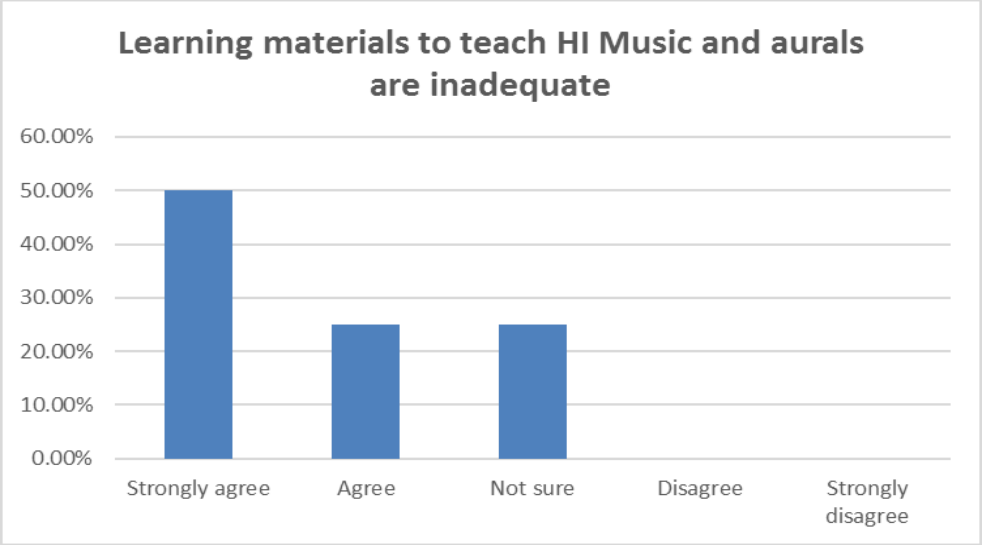


Chart 4.2: Adequacy of learning materials for teaching the learners with HI

4.1.3 Potential of learners with HI in music activities

The researcher, on visiting the institutions, found learners with HI performing musical pieces during morning mass. This directly related to his interest in establishing the potential of learners with HI in Music activities. He therefore asked the teachers on whether learners with HI have potential in music activities and their responses were captured in Table 4.3.

Table 4.3: Potential of learners with HI in music activities

Question	Responses	Max. score	Count	Percent
Learners with HI have a lot of potential in music activities	Strongly agree	5	2	50.0%
	Agree	4	2	50.0%
	Not sure	3	0	0.0%
	Disagree	2	0	0.0%
	Strongly disagree	1	0	0.0%

Source: Research data (2019)

From the foregoing results, all the respondents were of the opinion that learners with HI have a lot of potential in music activities. 50% of them strongly agreed to this fact. Another 50% agreed. It was evident that during the important functions e.g. St. Angela's Day, the learners with HI participated in sign singing the songs of the mass. Music equipment found in these institutions was used for church services and KMF.

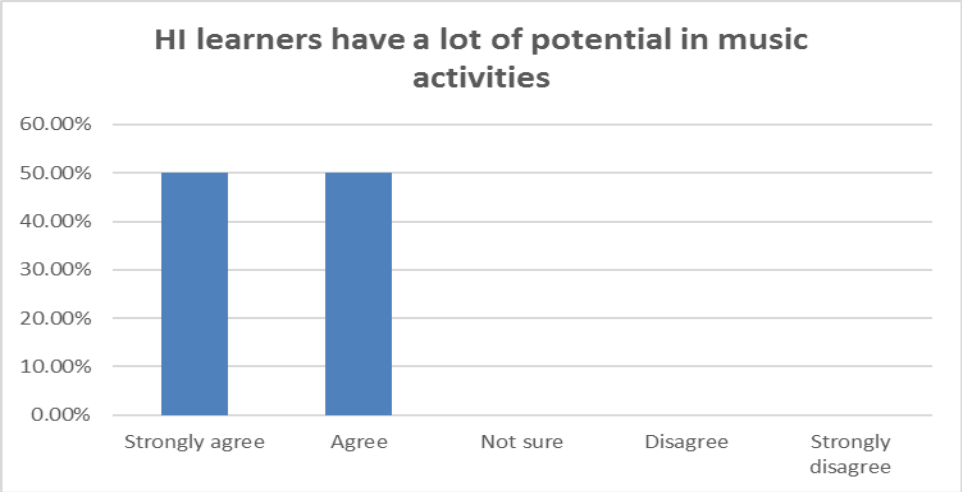


Chart 4.3: Potential of learners with HI in music activities

4.2 Pedagogical challenges likely to be faced by potential music teachers of learners with HI in teaching Music theory and aurals.

This section captures the pedagogical challenges faced by teachers of learners with HI; and the major challenges cited are lack of training and inadequate teaching materials; together with the music curriculum, which is biased towards the hearing learners.

4.2.1 Music training of teachers of learners with HI

On visiting the institutions, the researcher did not find Music captured on their timetables as a subject. The researcher consequently doubted as to whether the institutions had qualified Music teachers. The researcher therefore raised a question on training of these teachers. Responses from the HI teachers and administrators whether they had been trained to teach Music as subject are captured in Table 4.4.below.

Table 4.4: HI teachers' training in Music

Question	Responses	Max. score	Count	Percent
HI teachers have not been trained to teach music	Strongly agree	5	0	0.0%
	Agree	4	4	100.0%
	Not sure	3	0	0.0%
	Disagree	2	0	0.0%
	Strongly disagree	1	0	0.0%

Source: Research data (2019)

From the foregoing responses, the respondents agree that teachers of learners with HI have not been trained to teach music. 100% agreed to the fact that the teachers of learners with HI had not been adequately trained to teach music. In the field many of the teachers the study interacted with had not been trained to teach music to learners with HI in the core school curriculum activities. The teachers were not sure whether music could be taught as a subject. Majority understood music as singing or dancing. Their responses towards are captured in the table below.

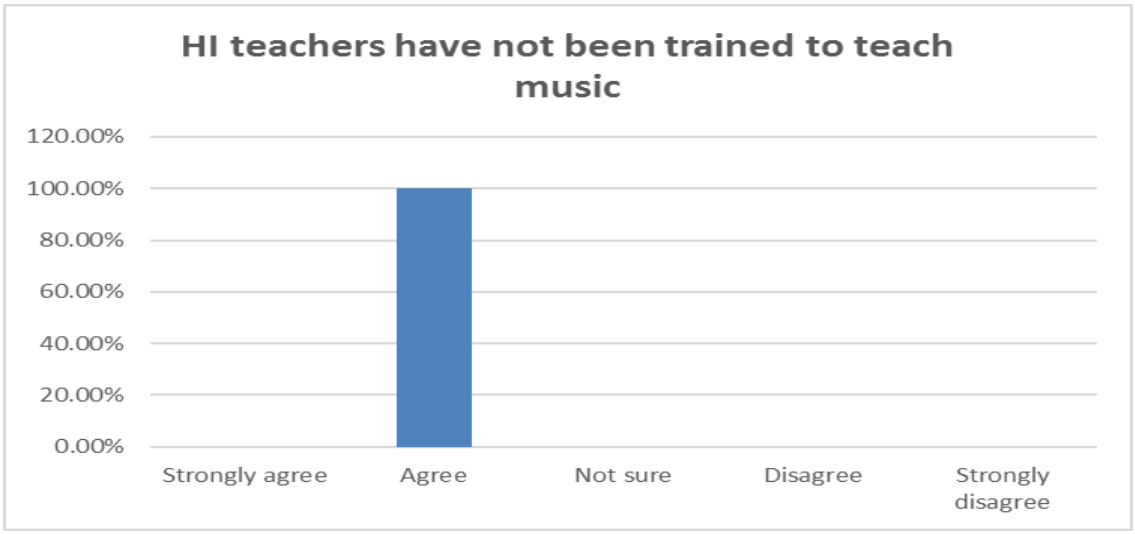


Chart 4.4: HI teachers' training in music

4.2.2 Administrators views on challenges faced by teachers in teaching learning music to learners with HI (Ematundu School)

The second objective of this study was to analyze the pedagogical challenges faced by music teachers of learners with HI in teaching Music and aurals. The researcher interviewed the Principal in an engaging conversation of over two hours to find out the pedagogic challenges of teachers of HI. The Principal's passion for his job and the learners with HI could be felt as he answered the researcher's questions.

According to the Principal, the main sponsors of the institution are the parents and the government of Kenya, and it implements two curricula: the vocational curriculum and the academic curriculum. The vocational wing admits students who score below 130 marks in KCPE. These learners undergo vocational courses in building construction, carpentry, computer and masonry. The academic wing students undergo the regular curriculum by the KICD. They study all subjects except Kiswahili which is replaced by sign language and this curriculum does not include music as a subject.

Selection of learners with HI in this school is done at the national level based on their scores in KCPE. Majority of the students pass through EARC before being admitted. The Principal has been working with the learners with HI for the last 18 years. He admits that the regular curriculum is too taxing for the HI given their hearing handicap.

This category of learners has a lot of potential in music. They participate in the Kenya Music Festival in the category of Dances and Sign Language. They do not study music as a subject. The principal however admitted that there were no trained music teachers in the school. The respondent agreed that these learners can study music with some modified assessment procedure. The respondent alluded to the fact that music can be used to enhance the learning of other subjects. These learners can also turn into professional musicians. The respondent also agreed that teachers of learners with HI have not been trained to teach music adding up to their challenges. They therefore lacked the necessary approaches to teach music and aurals.

The respondent said that some of the challenges faced by teachers of learners with HI in teaching Music and aurals can be overcome through government interventions, primarily in the introduction of curricula that can assist the teachers and make them knowledgeable enough to handle learners with HI. Such government intervention, the respondent said, will clearly specify an approach through which music can be taught to learners with HI. On curriculum, the respondent suggested that a modified structure and syllabus could be developed to take care of the learners with HI. On assessment of music, the respondent felt KNEC should modify the method of using prerecorded tapes and instead use live examiners using sign language.

4.2.3 Administrators views on challenges faced by teachers in teaching learning music to learners with HI (St. Angela).

St. Angela Vocational Secondary School for the Deaf Girls is found in Mumias Sub-County of Kakamega County near Mumias Town. The researcher visited this institution, which is just behind the busy St. Mary's Hospital in Mumias.

The Deputy Principal showed a lot of ability and knowledge in issues around HI and the school. He started off by informing the researcher that the school has 260 Students, 24 teachers and 13 instructors for vocational courses. She added that the main sources of funding of the institution are the Government of Kenya and the parents. The school has received grants from Scotland, Japan and the Catholic Church who are the main sponsors.

The school's two main curricula are based on the performance of the learners in KCPE. Those who score 150 marks and above learn under the regular secondary curriculum while those who score below 150 enter vocational training. Those who undertake the regular secondary school curriculum take the mainstream subjects except Kiswahili which is replaced with sign language, while those who undertake the vocational curriculum wing take knitting, garment making, secretarial with office practice, weaving, and other handicraft classes. This selection of the learners is done at the national level. In the selection criteria above consideration of music as a subject is missing.

Majority of the students pass through EARC assessment centers. These learners participate in music and drama festivals. They also take part in sports and in the science and engineering fair. They do not take music as a subject. These learners get sponsorship from NGOs, Affirmative Action groups, Aphia II and national government bursaries. The respondent acknowledged that challenges facing the learners with HI in learning music cannot be overlooked. However, the respondent was not clear on how pedagogical challenges faced by teachers of learners with HI in teaching Music and aurals can be overcome. Music was missing on their timetable. The respondent also admitted that teachers in the school are not trained to teach music.

The respondent agreed that there can be a way of teaching music to the HI professionally but it requires the intervention of stakeholders in the Ministry of Education, parents, unions and the students themselves. Aurals, he says, pose a great challenge to the HI music learners. This is because of loss of hearing sense. The respondent however agreed to the fact that learners with HI can learn music.

The respondent has dealt with learners with HI for more than ten years. He accepted that they have a lot of potential in music, poetry and drama. He also admitted that they can learn music as a subject. This could offer them self-employment. They could also turn out to be teachers of music.

4.2.4 Administrators views on challenges faced by teachers in teaching learning music to learners with HI. (St Martins primary)

On a separate day, the researcher made a trip to St. Martin's Primary School for the Deaf. This is a mixed boarding school in Mumias Sub-County of Kakamega County that neighbors the Vocational School for the Deaf Girls. Upon arrival at the school, the researcher met with the Principal, who, after hearing about the content of the research, referred him to the Music trainer of the school. The Music trainer was able to share with the researcher the following information:

The School runs from ECD to Standard Eight. The learners are drawn from all over the country. The school has approximately six hundred pupils. They undertake the regular

school curriculum. According to the respondent, learners with HI have a lot of potential in music.

They take part in Kenya Music Festival, particularly in the dance categories and elocution. The trainer has been these with learners with HI for the last 18 years and admits that these learners can take Music as a subject. These pupils have been participating in the Kenya Music Festival particularly in instrumental classes and the dance category. The trainer alluded to the fact that these learners with HI could be given a chance to study music as a subject.

According to her, learners with HI have a lot of challenges in music due to their hearing inability. She admitted that they can hear through feeling of vibrations. According to her, sense of touch, feeling and sight are very active on the part of learners with HI.

4.2.5 Administrators views on challenges faced by teachers in teaching music to learners with HI.

The researcher also took a day long trip to Mwikhomo Primary School for the Deaf, which is found some 40 kilometers away from the researcher's residence. The institution is found in Lurambi Sub County, Kakamega County. The school is situated about 3km from Kakamega town.

The researcher was informed that Mwikhomo Primary School for the Deaf is a mixed primary school with a population of 500 pupils. The school admits pupils through EARC and a few come directly from home to the school for admission. The school participates in co-curricular activities like sports, drama, music, dance and elocution. Music subject is not taught in the school. The main media of communication is sign language. The learners' sign sing songs during parades and social functions. The school is funded by the Government of Kenya through the Ministry of Education's Free Primary Education program (FPE). It has also received assistance from the national government Constituency Development Fund, KESSUP, KNCPD well-wishers. The parents also provide learning support materials to their pupils.

The study noted great music potential in learners with HI. The learners are especially good in rhythm. Although melody poses them a challenge, they are able to practice sign singing.

This respondent also agrees that the learners with HI can take music as a subject. The assessment procedure could be modified as is the case in science where sound sections are moderated for learners with HI. The HI could be given alternative papers with the use of sign language and practical performance.

During the visit to the school, the researcher found that there were some music instruments which the learners use during social functions as well as in KMF. It was noted that the pupils loved music activities; they shared music experiences during dance and sign language elocutions. This is so despite the fact that the teachers in the school are not trained to teach music. Some were not sure whether music could be taken as a subject. They all agreed to the fact that the learners with HI have a lot of potential in music activities

4.3 Alternative strategies to be used in teaching Music theory and aurals to the learners with HI.

There are many categories of experiments (Serem, Boit & Wanyama, 2013) which include field experiments, quasi experiments and natural experiments. This study used the quasi experiment which is relevant to social sciences (Serem, Boit & Wanyama, 2013).

The purpose of these experiments was to establish whether learners with HI can respond to sound using senses other than hearing. Learners with HI were divided into the following categories:

i. The Hard of Hearing (HOH)

ii. The Partially Hearing (PHI)

iii. The Totally Hearing Impaired (THI)

The experiment set out to test the null hypothesis which is used to interrogate a phenomenon of uncertainty (Serem,Boit and Wanyama, 2013.According to the above authors, when the null hypothesis(H_0). is rejected it is replaced by the alternative hypothesis (H_1).The main hypothesis tested was whether learners with HI can use senses feel ,touch and sight to respond to sound in place of hearing.

From each of the categories above, between 10 and 40 students were selected to participate in learning using these strategies. These learners were asked to use sense of sight to see instruments being played by the researcher and corporate teachers. They also observed various rhythms played to them. The learners were then given time to emulate what they had observed.

The researcher played drum beats on the backs of these learners to feel. They were then asked to repeat the playing of the beats on the drums. The beats were written on the black board in note form. More tasks were given to these learners, their responses marked and scores recorded.

Learners with HI were asked to dance to various rhythms as demonstrated by the researcher. More exercises were given and the rhythms danced to written on the board. Aural rhythmic tests were then administered. The work was marked and scores recorded.

From these experiments, the scores were analyzed by their means i.e. they were added up and divided by the number of respondents. The statistical formula used was:

$$x = \sum x/n$$

Where x = Mean; $\sum$ = Sum of the Scores;

x = Each Score n = Number of Scores

The null hypothesis tested was: Learners with HI can respond to sound using senses of feel, touch and sight in place of sense of hearing. The results from the experiment however showed that not all these learners can use these senses.

The following differences were realized from the results of the experiments: 1.Senior learners with HI performed better in aural tests than junior learners.2.Learners who pass through MEARC performed better than those who joined their institutions directly.3.Learners who were HOH adapted to the alternative strategies than the PHI and THI. In fact the THI could not adapt to these strategies except observation.

The null hypothesis was therefore rejected. When the null hypothesis is rejected it is replaced by the alternative hypothesis (Serem,Boit and Wanyama 2013).The alternative hypothesis therefore is: Some learners with HI can respond to sound using sense of :feel ,touch and sight. The results are highlighted in the data that follows.

4.3.1 Performance in aural tests by the learners with HI by class

Aural tests were administered on learners with HI based on their classes, both in the primary and secondary sections. This was after the new teaching strategies had been experimented. In each class, 10 learners were randomly selected and tested in a separate room from their classes. The testing was conducted in the morning for the learners in the primary section since it involved more classes, and in the afternoon for learners in the secondary section.

Table 4.5: Performance in aural tests by learners with HI by Class in the Primary Section

Class	Entry	Max. score	Actual score
1	10	100%	20%
2	10	100%	20%
3	10	100%	30%
4	10	100%	40%
5	10	100%	50%
6	10	100%	50%
7	10	100%	60%
8	10	100%	70%

Source: Research data, (2019)

From Standard One to Three (lower primary), the average score was 23.3%. The middle level i.e. Standard Four to Six had an average score of 46.6%. The upper classes (Standard Seven and Eight) had an average score of 65%.

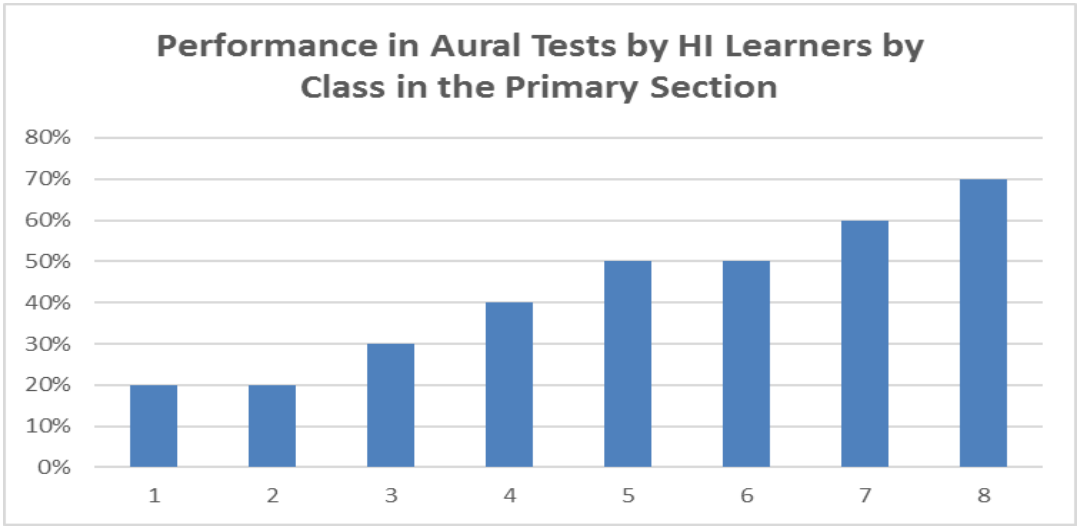


Chart 4.5: Performance in aural tests by learners with HI by class in the primary section

Table 4.6: Performance in aural tests by learners with HI by class in the secondary section

Form	Entry	Max. score	Actual score
1	10	100%	40%
2	10	100%	50%
3	10	100%	60%
4	10	100%	70%

Source: Research data, (2019)

The average score for the junior secondary (Form One and Two) is 45% whereas the average score for the senior secondary (Form Three and Four) is 65%.

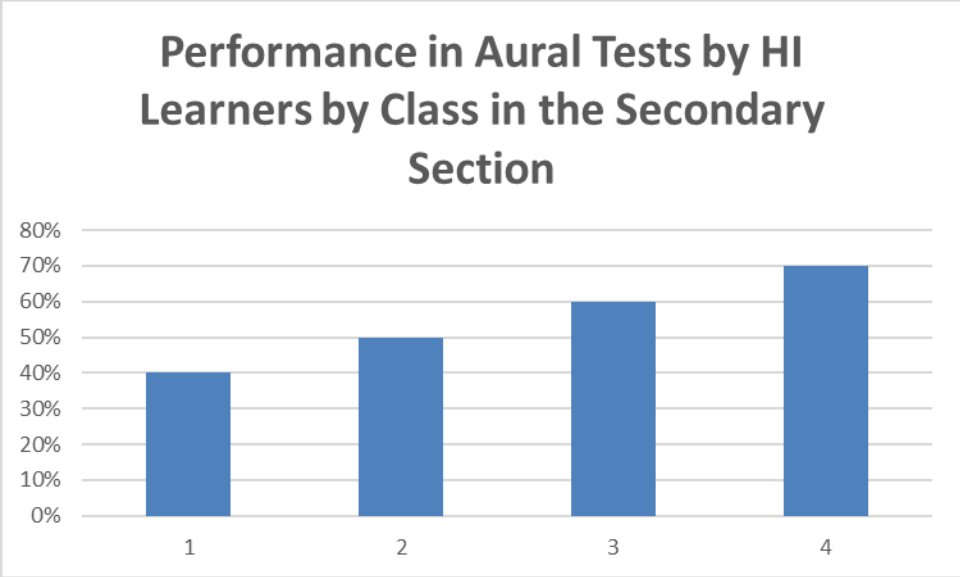


Chart 4.6: Performance in aural tests by learners with HI by class in the secondary Section

4.3.2 Strategies for teaching music theory and aurals to the learners with HI

The researcher, with the help of one of the teachers, stood before the students and expounded the terms ‘music’ and ‘aurals’ before asking them to give their views. Corporate teaching strategies between the researcher and regular teachers were carried out. After these strategies, aural tests were administered to a number of learners with HI and the results tabulated below.

Table 4.7: strategies for teaching music theory and aurals

Strategy	No. of respondents	Min.	Max.	Mean	Std. Dev.
i. Observation and sign language	40	4.00	5.00	4.9500	.22072
ii. Movement	40	4.00	5.00	4.9500	.22072
iii. Feeling	40	3.00	5.00	4.0000	.84732
iv. Dance	40	3.00	5.00	4.4500	.59700

Source: Research data (2019)

The above results show that strategies i. Observation as a key tool for learning Music and aurals learners with HI and ii. Movement can substitute hearing as learners with HI learn music and aurals scored higher by most of the respondents as being effective in teaching music and aurals to learners with HI, whereas strategies iii. Learners with HI feel the beats as they learn music and aurals and iv. The learners with HI observe as they form patterns in a dance; scored lower by the respondents.

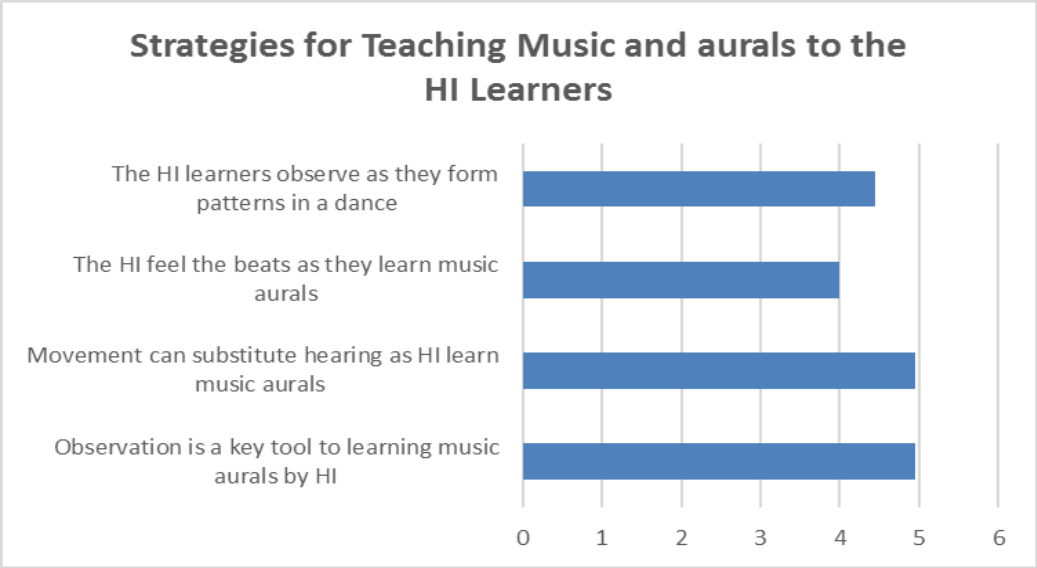


Chart 4.7: Strategies for teaching music theory and aurals to the learners with HI

4.3.3 Performance in aural tests by learners with HI who are assessed and direct entry Learners with HI compared.

Aural tests were administered to the learners with HI both from primary and secondary sections. The tests were conducted in the classrooms that they use for regular learning, and two teachers were at hand to assist in the primary section in terms of giving instructions since the researcher is not an expert in Kenyan Sign Language (KSL).At the secondary section two teachers assisted in communication. The researcher was the one conducting the tests. The target group was sampled randomly. Their scores were compared based on those who passed through MEARC (i.e. were assessed) and those who joined their institutions directly from home (i.e. direct entry). The results are indicated in Table 4.7.

Table 4.8: Performance in aural tests by assessed and direct entry learners with HI

Category	No. of respondents	Assessed at MEARC	Direct Entry
Primary	80	70%	30%
Secondary	80	60%	40%

Source: Research data (2019)

From Table 4.8, it is clear that the learners with HI who joined their institutions after being assessed at the MEARC scored higher in the aural tests than those who were admitted to the schools without passing through assessment at the center. Teachers attested to this fact and explained that entry behavioral assessment was done at MEARC. This assessment helped the officers to identify the ability of the learners as they place them in various classes. The HI teachers were also assisted to use suitable strategies to teach the learners with HI.

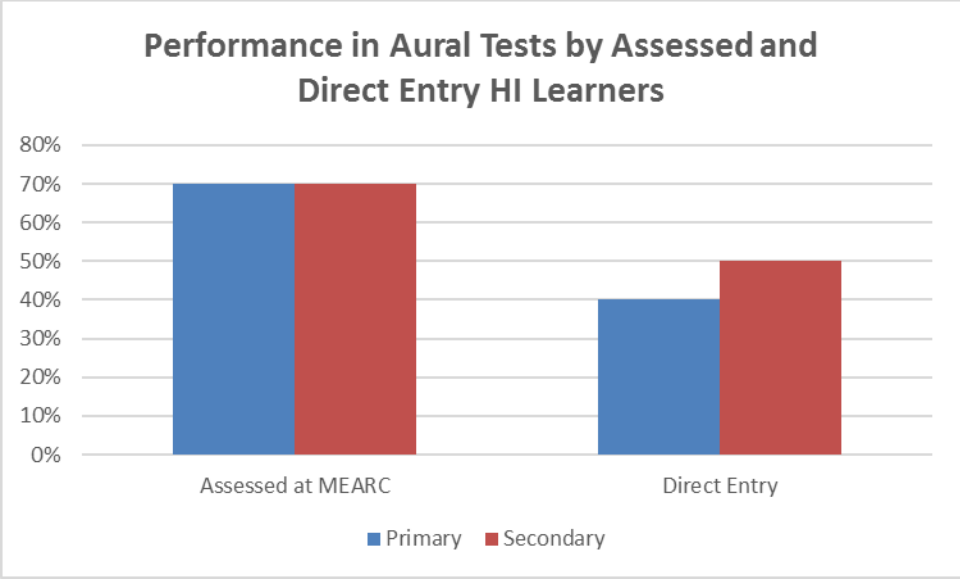


Chart 4.8: Performance in aural tests by assessed and direct entry learners with HI

4.3.4 Comparison of regular and new teaching strategies in teaching music and aurals to learners with HI

A comparison was made of regular teaching methods using sign language and the new strategies for teaching music and aurals. The researcher conducted this by getting randomly picked respondents who were divided into two groups; A and B, with Group A making use of regular teaching strategies (Instructions theoretically using KSL) ,while Group B made use of the new teaching strategies i.e.(Observation and emulating playing music instruments, feeling beats and writing rhythm, dancing and writing rhythm, playing melodic instruments and writing melodies played).

Table 4.9: Comparison of regular and new teaching strategies in teaching music and aurals to learners with HI

Teaching Method	Category	No. of Respondents	Rhythm	Melody
Regular Teaching (sign language)	Primary	80	40%	25%
New strategies (observation, dance, movement, playing musical instruments, feeling beats)	Primary	80	70%	60%
Regular Teaching (sign language)	Secondary	80	35%	30%
New strategies (observation, dance, movement, playing musical instruments, feeling beats)	Secondary	80	65%	55%

Source: Research data (2019)

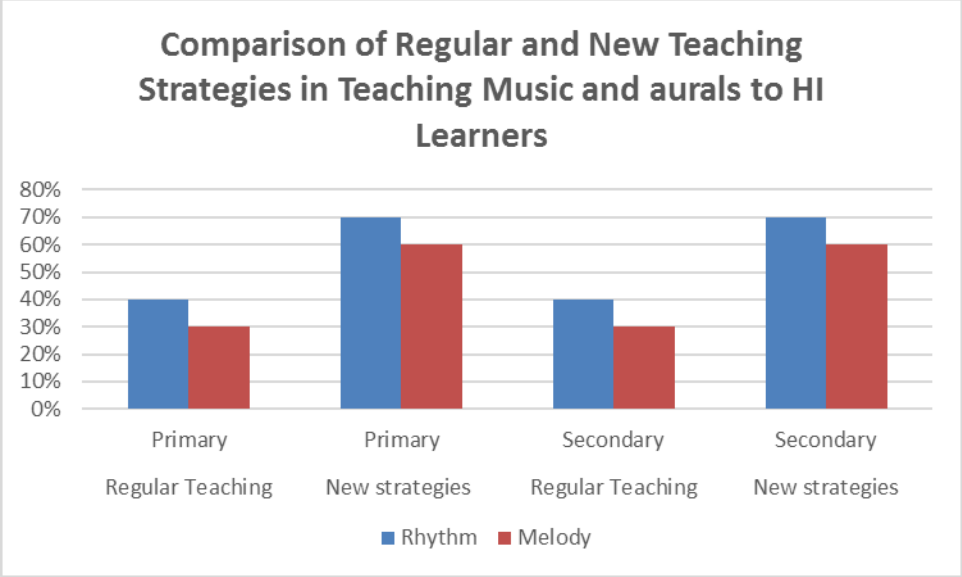


Chart 4.9: Comparison of regular and new teaching strategies in teaching music and aurals to learners with HI

4.3.5 Effect of assessment of learners with HI on teaching strategies

Learners were randomly sampled from the primary section and 40 from Various Mumias Education Assessment Resource Center (MEARC) deals with assessment of learners with special needs. At this centre, learners are assessed and categorized according to their hearing ability. The categories are HOH, THI, HI and partial hearing. The center recommends these learners for placement in special educational institutions. This assessment is important to the learners with HI with regards to entry behavior of the learners.

The researcher visited this center on a Tuesday and sought views of MEARC officers with regard to the relationship between assessment of learners with HI and Music and aurals. He was privileged to find the Officer in charge of the station together with the officer charged with testing for HI. The question below was raised to seek their responses. 'Does assessment at this center have any effect on the child's entry behavior in school?'

In the field, the researcher gathered that the selection process of Form 1 students at the national level did not take into account the importance of assessment of HI. A comparison in terms of academic performance however proved that assessment helped teachers in understanding the entry behavior of learners with HI and in turn assisted them to design suitable approaches to teaching .The MEARC officers however had a difficult time responding to matters of music and learners with HI. They agreed to the fact that learners with HI have potential in music activities.

Table 4.10: Effect of assessment at mearc on performance of the learners with hi in music theory and aurals

Question	Responses	Max. score	Count	Percent
Assessment of learners with HI at MEARC positively contributes to their performance in Music and aurals	Strongly agree	5	2	40.0%
	Agree	4	1.5	30.0%
	Not sure	3	1.5	30.0%
	Disagree	2	0	0.0%
	Strongly disagree	1	0	0.0%

Source: Research data (2019)

Table 4.11: Alternative strategies for teaching music theory and aurals

Aural tests were administered to various categories of learners with HI. Their scores were recorded. (Highest score: 5 lowest score 0)

STRATEGIES	HOH	PHI	THI
FEELING BEATS	4	3	1
DANCE AND MOVEMENT	3	3	2
OBSERVATION AND WRITING	3	3	3
PLAYING MUSIC INSTRUMENTS	4	3	1

Source: Research data (2019)

The null hypothesis tested was: Learners with HI can respond to sound using senses of feel, touch and sight in place of sense of hearing. The results from the experiment however showed that not all these learners can use these senses.

The following differences were realized from the results of the experiments: 1.Senior learners with HI performed better in aural tests than junior learners.2.Learners who pass through MEARC performed better than those who joined their institutions directly.3.Learners who were HOH adapted to the alternative strategies than the PHI and THI. In fact the THI could not adapt to these strategies except observation.

The null hypothesis was therefore rejected. When the null hypothesis is rejected it is replaced by the alternative hypothesis (Serem, Boit and Wanyama, 2013).The alternative hypothesis therefore is: Some learners with HI can respond to sound using sense of: feel, touch and sight. The results are highlighted using tables and graphs. These results show that the HOH adapt to these strategies more effectively than PHI and THI.

CHAPTER FIVE
INTERPRETATION AND DISCUSSION OF FINDINGS

5.0 Introduction

This chapter discusses findings from both primary and secondary data. The chapter also discusses data from questionnaires for learners with HI, their teachers, and education assessment officers. Responses from interviews with administrators of HI institutions have additionally been captured. Discussion on experimental research design to test various strategies of teaching Music theory and aurals has also been carried out.

5.1 Challenges likely to be experienced by learners with hi in learning music theory and aurals

From the data collected, negative attitude towards learners with HI hinders their learning of Music and aurals. Aura (2012) asserts that the Wanga people in western Kenya look down upon the learners with HI. The Wanga people refer to a person with HI as *Omusiru* which literally means a fool. This attitude as seen from responses proved to be a factor that supposedly impedes learners with HI in learning music theory and aurals. The visited schools had no music on the timetable, a factor that proved the low attitude stake holders had in music subject and the HI.

Data collected indicated that 100% agreed to the fact that negative attitudes contributed to the HI not learning music. From the responses of administrators of HI institutions, it was clear that many parents, teachers and the community did not see the ability of learners with HI learning Music due to the fact that they cannot hear. (See interview with Principal ACK Ematundu, page 48-49). These learners took part in music festivals, confirming their potential to learn music as a subject.

Amanya (2011) in her paper during the national adjudicators and trainers workshop admits that learners with HI have challenges in perception of melody and harmony. Amanya (ibid) suggests that these learners should be exposed to rhythm. However from the data collected from the field; these learners take part in dances which include melody.

They also participate in the Catholic Mass through sign singing. Their scores attested to the fact that learners with HI are capable of learning music as a subject. The good scores in aural tests showed that these learners are capable of taking Music subject.

Data from the field also indicated that these learners had inadequate learning music materials .The few music equipment in the institutions visited were used for music festivals and other social functions like: Catholic Mass, parade ,entertainment and National days. This inadequacy of music learning material was a reason for learners with HI not learning Music subject.

Data from the field also indicated that the teachers of learners with HI had not been trained to teach Music subject. This was a challenge to this category of learners. They did not get trained personnel to teach them Music subject. The curriculum used at KISE did not include Music subject. The teachers of the HI met in the field alluded to this fact. The teachers however prepared their learners for music festivals and other entertainment functions. This posed a challenge to the learners with HI given that they relied on these teachers to teach them music.

5.2 Pedagogical challenges likely to be faced by hi teachers in teaching music theory and aurals

Objective 2 of this study was to look into pedagogical challenges likely to be faced by learners with HI in teaching Music theory and aurals. Data collected in the field showed that learning materials for teaching Music subject were inadequate. 75% of the respondents agreed to this fact whereas 25% were not sure whether it was a challenge or not. This was a challenge even to potential teachers of Music subject to the HI.

Freiberg (2002) recommends the use of visual aids in teaching learners with HI. This is consistent with the institutions the researcher visited. Most of the visual aids used were for teaching other subjects and not music. Freiberg (ibid) does not suggest any strategy for teaching Music and aurals. This study experimented on some strategies that can be used to teach music theory and aurals to the learners with HI.

Kenyan sign language was found to be the main means of communication during teaching. Obiakor (2007) is also in agreement with this means of communication during teaching process. Obiakor however does not suggest any means of handling Music theory and aurals. The situation in the institutions the researcher visited revealed that inadequate visual aids caused the absence of music subject in their curriculum. Potential teachers of Music subject did not have enough Music teaching materials to enable them start the subject to learners with HI. The regular teachers were also not trained to handle the subject. The inadequacy of the music equipment and lack of training on the part of teachers posed a challenge to the teaching of music subject.

In the UK, the National Deaf Children Society is established to deal with teaching strategies for the learners with HI (cndcs.org.uk2016). The Deaf Society in Kenya is however more of a social organization and does not deal with learning strategies for learners with HI. Learners with HI have been sidelined in matters of music as a subject (KNEC Report, 2012). All institutions visited attested to the fact. Teachers of these institutions were not conversant with teaching Music theory and aurals.

From the data collected in the field, the researcher found that there was no strategy for teaching Music theory and aurals. From the field, the researcher also found that learners with HI are taught using the regular KICD syllabus. Kiswahili has been replaced by Kenyan sign language, and music and drama are treated as co-curricular activities. Music as a subject was lacking on the timetable. Learners with HI were therefore not taught music as a subject.

The study showed that teachers of learners with HI had not been trained to teach music as a subject. 100% of the respondents alluded to this fact. (See Chart 5.1). KISE trains teachers to handle special needs learners; it however does not prepare them to teach music. Administrators of HI institutions also agreed to the fact that they did not have trained Music teachers. The responses from questionnaires given to the HI teachers showed that they are inadequately prepared to teach Music as a subject.

Lola & Bev (2002) encourage teachers of HI to expose their learners to instruments like drums, keyboards and other percussive instruments. The Orff Schulwerk approach is also consistent with this strategy (Orff, 1969). Most institutions visited used music instruments for KMF and social functions. The study found that teachers of learners with HI had no idea that these instruments can be used to teach Music as a subject hence their assertion that they cannot teach music. Regular teachers in the target schools in this study did not use these instruments to teach music subject.

The findings from the field indicated that teachers of learners with HI used teaching aids in handling their work. Most of these teaching aids were visual. Drawings of charts and pictures were used. This was so due to the use of eyes by learners with HI as the principal sense to grasp concepts.

Segal (1974) recommends the use of teaching aids during the classroom activities. Segal (ibid) also encourages the use of interpreters in case of difficulty in communication with the learners with HI. In line with this, the researcher employed the services of an interpreter during the study. Data in the field also revealed that the younger teachers in the profession sought the assistance of the experienced teachers especially with regard to sign language. The use of sign language was also was also used during music festivals and church services to sign sing the hymns (See fig. 2.3).

The findings in the field also showed that the regular teachers had not received specialized training to handle music. In fact, a good number did not have any idea that music can be taught as a subject and be examined. This is attested through their responses to the questionnaires administered. The views of administrators of the HI institutions also showed that the teachers they had had not been trained in the music subject.

The situation in the sampled schools in this study indicated that there were no approaches to teaching music and aurals to the learners with HI. In fact the teachers did not have any strategies to teach the music subject. They however trained these learners to participate in festivals. During important functions in the school, these learners were trained to entertain invited guests (See fig 2.1).

Music is a practical subject and in the KICD syllabus, it is categorized as a technical subject (MOE KICD Syllabus, 2012). The Orff Schulwerk Approach in Teaching (Orff, 1969), encompasses play and movement in teaching music. In this approach, learners play, tap, dance and clap. They also play percussion instruments and involve movement to create rhythm. This is consistent with the above strategies. The Orff Approach deals with the regular learners. For the special needs learners, particularly the HI, dance and movement can be used to enhance the learning of music and aurals. In this study learners danced and wrote down the rhythm danced to.

Dell-Olio, & Donk, (2007) suggest the use of comics and plays in the teaching process. They also encourage teachers to use observation, acting, and reading during the classroom teaching. This is consistent with the experimental strategies above. Learners with HI seemed very keen using the sight sense during demonstration of playing music instruments.

5.2.1 Interpretation of views of administrators of institutions for learners with HI.

From the preceding interviews, the respondents were at a consensus on the following issues:

1. Learners with HI have enormous potential in music
2. Learners with HI can study Music as a subject.
3. Learners with HI face challenge in music due to inadequate teaching/learning materials.
4. There is no clearly laid out approach in teaching music to the learners with HI.
5. These pedagogical challenges faced by teachers of learners with HI in teaching Music theory and aurals can be overcome by alternative response to sound rather than hearing since the HI miss this sense.
6. At the MEARC, this study established that learners with HI were advised to use support hearing gadgets.

The respondents do not agree however on the following:

1. A specific way in which a curriculum to teach music for the HI can be implemented.
2. A clear way of teaching Music theory and aurals, and generally music to the learners with HI.
3. Attitude to learners with HI in matters of music
4. Examination procedure in the Music subject.

The interviewees' concern on a specific way in which curriculum can be implemented has been addressed in the conceptual framework in this document (pg. 20). The experimental research design has been used. Attitude to the HI has been dispelled through incorporating them in music festivals. An alternative examination procedure has been recommended for learners with H

5.3 Strategies for teaching music theory and aurals

Learners with HI have difficulties in hearing. This study tested them on using other senses. i.e. feel ,sight and touch. From data collected the HOH seemed to adapt much better and use these strategies more effectively, followed by the PHI and finally the THI.

The strategy of observation is effective to all these categories. This could be because learners with HI use sense of sight more keenly to replace sense of hearing. The HOH and the PHI can play instruments more effectively than the THI. Coordination is a big challenge to the THI during dance and movement sessions. The THI also have a challenge in feeling drum beats.

KSL was the main media of communication in this study. The language can be used to teach music theory. Aural tests were conducted using other senses other than hearing. The segment of practical skills which includes dances, playing music instruments and songs was well done except that the songs were done through signing given the hearing handicap of learners with HI.

Data from MEARC assisted teachers to understand entry behavior of learners with HI. In view of this performance in aural tests by learners who go through MEARC and those

who are admitted directly showed discrepancies. Learners who are assessed at MEARC before joining school seemed to perform better than those who go to school directly.

A comparison was done the old strategies used in teaching other subjects with the new alternative strategies for teaching music theory and aurals. Data obtained showed that the new strategies produced better results. The strategy of observation was more popular compared to the other strategies. Dancing and playing musical instruments could be done fairly well by all learners with HI. A comparison in performance in aural tests by class showed that senior learners performed better than junior learners in both primary and secondary.

CHAPTER SIX
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter deals with a summary of major findings of the study, conclusions derived from the findings and suggestions for further related studies.

6.1 Summary, conclusion and recommendations

The study investigated challenges likely to be faced by learners with HI in learning Music theory and aurals. It also sought to identify pedagogical challenges likely to be faced by teachers of learners with HI in teaching Music theory and aurals. The study experimented on some strategies to be used in teaching Music theory and aurals to learners with HI. Main centers of HI were targeted i.e. St. Martins Primary School for the HI, St. Angela Vocational secondary School for the HI, Ematundu Vocational Secondary School for the Deaf Boys and Mwikhomo Primary School for the Deaf. MEARC was also included in the study to take care of assessment procedure and placement of learners with HI.

Data from the field revealed that learners with HI do not have adequate learning materials to support them in learning Music and aurals. The few music instruments found in these institutions were used for music festivals and not in the teaching of music. Most institutions participated in KMF and none taught music as a subject.

Responses from questionnaires administered to the teachers of HI and their administrators indicated that there is a negative attitude to the learners with HI being given the opportunity to study Music as a subject. This is a result of their hearing handicap and music is closely associated with hearing. Music as a subject was linked to hearing and was therefore not being offered to the learners with HI.

From the field, there was evidence that teachers of learners with HI are not trained to handle music as a subject. They however participated in music activities as co curriculum entities. Music was not offered as a subject in all the institutions visited. The teachers and the administrators of the HI institutions had no idea that music is an examinable subject.

In institutions visited, music was missing on the timetable. All learners with HI teachers agreed to the fact their learners had a lot of potential in music activities.

All the institutions visited used the KICD syllabus which offered the regular schools subjects. Kiswahili was replaced by sign language. The syllabus did not put into consideration the HI handicap of hearing which hindered them from taking Music as a subject. This syllabus was an impediment to the HI taking music as a subject.

The institutions offered their candidates for KNEC examination. In science, learners with HI were given alternative questions for the topic of sound but for the rest of subjects, the learners with HI did the same questions. In view of the above, the study suggested that if music examination procedure can take into account the aspect of sound, the HI can also be given an opportunity to take the subject.

The study experimented on some strategies for teaching Music theory and aurals to the learners with HI. The strategies included observation, movement, feeling drum beats, dance and playing musical instruments. Generally, the experimented strategies were more relevant to the HOH followed by the PH and finally the THI.

6.2 Alternative strategies for teaching music theory and aurals to learners with HI

The HI have not been given the opportunity to learn Music subject in Kenya. In Western countries however this category of learners studies music as a subject (Darrow, 2006). This study experimented on a number of strategies that can be used to teach music subject to the HI. Sign language can be used to teach some aspects in music which do not require practical approach. The following strategies are proposed for use in teaching melody writing, rhythm and aurals:

1. Feeling beats-Learners feel beats of an instrument or rhythm clapped on their bodies and write down.

2. Observation and emulating-Learners observe teachers perform musical tasks and repeat the same.

3. Dancing and writing-Learners dance to rhythms and write them down.
4. Sign singing-Learners use signs to perform melodies.
5. Playing music instruments-Learners play the instruments and write down melodies and rhythms played.

6.3 Conclusion

The findings in the field showed that learners with HI can take music as a subject since they have a lot of potential in music. The study findings led to the conclusion that inadequate teaching and learning aids were a hindrance to the HI learning music in general and aurals in particular. Teachers of learners with HI had not been trained to handle music subject. There was a generally negative attitude towards the learners with HI studying music as a subject by the teachers and other Education stakeholders e.g. officers from KICD and KNEC. This fact is supported by the manner in which these institutions formulate their syllabi. They did not factor in the handicap of hearing by learners with HI hence their inability to study music as a subject.

The strategies experimented in teaching music and aurals to the learners with HI gave positive results. The study found that not all learners with HI pass through EARC. At the secondary school level, the learners were selected after KCPE basing on their scores. At MEARC, the clients who visited the facility had an objective of being recommended for either medical attention or placement in schools. At this station, the researcher found that the officers on the ground did not have the capacity to discuss Music subject. They however, alluded to the fact that learners with HI have potential in music activities.

6.4 Recommendations

The study makes the following recommendations:

1. From the potential identified from the performance of learners with HI in Music festival activities, the study recommends that they be given opportunity to study Music as a subject.
2. The learners with HI should be provided with teaching and learning aids to handle Music theory and aurals.

3. KISE should start Music as a subject and train Music teachers for learners with HI.
4. Parents, teachers and the community should be enlightened on the music potential of the learners with HI to curb the negative attitude.
5. KICD and KNEC syllabi should incorporate the concerns of the learners with HI. Dell & Donk (2007) support this fact by stating that in employing examination techniques, various handicaps should be considered. In this case, KICD and KNEC syllabi should consider the HI handicap in hearing.
6. The Music syllabus should consider the hearing handicap of HI.
7. Aural examinations should be modified to have alternative response other than hearing. This study recommends the following methods of examination:
    a. Sign singing as opposed to vocal singing
    b. Practical playing of instruments
    c. Feeling of beats and writing the rhythms
    d. Sight signing of rhythms and melodies
8. The study recommends EARC to have at least one Music expert to assess learners' ability to take Music as a subject.

6.5 Suggestions for further related studies

This study confined itself to the areas of rhythm and melody in music theory and aurals. The geographical scope was Kakamega County as a representative of Kenya. Further studies could be conducted in the areas of harmony and analysis of music. Related studies could also be conducted in other regions for comparison. A modified curriculum for the learners with HI could be researched on specifically targeting music as a subject. This study confined itself to melody in one key. Modulation could be explored by further related studies. This study collected data on challenges likely to be faced by HI teachers in teaching Music theory and aurals. Further research could be done on how these teachers could be trained to handle the Music subject. Further studies could also be conducted on the activities of EARC with specific dimensions of Music subject. Further studies could be carried out in the following areas:-

1. Approaches of teaching harmony to learners with HI

2. The study was carried out in Kakamega County. Other researches can be carried in the other counties in Kenya.
3. A study can be carried out in areas of History and Analysis with emphasis on the learners with HI.
4. Alternative examination techniques in music can be researched to cater for learners with HI.
5. This research was based on melody in one key. Modulation could be researched on with reference to the HI.
6. A study could be carried out on the possibility of HI teachers to be trained in music as a school subject
7. Further studies could be carried out on the activities of EARC with emphasis Music as a subject.

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Appendices

Appendix A: Questionnaire for teachers of learners with HI

Dear respondent, I am a researcher, undertaking a Master of Music Education Degree from Kenyatta University. My research seeks to explore strategies for teaching music and aurals to the hearing impaired learners in Kenya, Kakamega County Mumias Sub-County. Kindly assist in filling of this questionnaire. The information you give shall remain totally confidential and shall only be used for the purpose of this study.

What is the name of School: _____

Population: _____ Male _____ Female _____

Location: County: _____

Sub-County: _____

Village: _____

How do you get your customers/learners? _____

_____

_____

In general which approaches do you use in teaching your learners? _____

_____

_____

Do all your learners pass through E. A. R. C.? (Yes/ No (tick where applicable)

If No, how do you compare the two categories in terms of performance? _____

_____

_____

Do you take part in Kenya Music Festival? Yes/ No (tick where applicable)

If yes, which activities do you participate in? _____

_____

_____

Do your learners take Music as a subject? Yes/ No (tick where applicable)

If No, what are the reasons?

1. _____
2. _____
3. _____

In your opinion, can these learners take Music as a subject? Yes/ No (tick where applicable)

How do you train music activities in your school? _____

_____

_____

How do you rate the interest of your learners in Music?

Excellent ☐ V. Good ☐ Good ☐ Fair ☐ Poor ☐

Please tick in the appropriate box, based on your response to the statements.

	Strongly agree	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
1. HI learners can perceive rhythm					
2. HI learners can feel musical pitch					
3. Harmony (combination of sounds) can be appreciated by HI					

learners					
4. HI learners do not take music as a subject					
5. HI learners have a lot of potential in music activities					
6. HI learners can study music as a subject					
7. Music can support learning in other subjects by HI learners					
8. HI learners have a lot of challenges in perceiving music					
9. The government has not given HI learners the opportunity to learn music					
10. HI teachers have not been trained in teaching music					
11. Learning materials for music teaching to HI are inadequate					
12. Negative attitudes towards HI learners and music play a role in their segregation in matters of music.					

Thank you for your participation

Appendix B: Questionnaire for learners with HI

Dear respondent, I am a researcher, undertaking a Master of Music Education Degree from Kenyatta University. My research seeks to explore the strategies for teaching Music and aurals to the hearing impaired learners in Kenya, Kakamega County Mumias Sub-County. Kindly assist in filling of this questionnaire. The information you give shall remain totally confidential and shall only be used for the purpose of this study.

Please answer these Questions.

Your school: _____

_____

Your class: _____

Your Home: County: _____

Sub-County: _____

Village: _____

Number of brothers: _____

Number of sisters: _____

Those in special schools: _____

Those in regular schools: _____

How did you know this school? _____

Did you pass through E. A. R. C.? Yes / No (tick one)

Do you take part in Kenya Music Festival? Yes / No (tick one)

If yes, which activity do you take part in?

_____

Do you learn Music as a subject? Yes / No (tick one)

If No, would you like to learn the subject? Yes/ No (tick one)

Please tick in the appropriate box, based on your response to the statements.

	Strongly agree	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
1. HI learners take part in music festival					
2. HI learners can play musical instruments					
3. HI learners can dance to music					
4. HI learners can feel drum beats					
5. HI learners can learn music as a subject					
6. HI learners have challenges in responding to pitch					
7. HI learners can learn and dance to rhythm					
8. HI learners perform songs using signing					
9. HI learners have a lot of potential in music					

Thank you for your participation

Appendix C: Interview schedule for MEARC officers and administrators

Name of the organization? _____

_____

Location: County: _____

Sub-County: _____

Nearest Town: _____

Funding agency: _____

Main Activities:

1. _____
2. _____
3. _____
4. _____

How do you get your leaners? _____

_____

_____

Which gadgets do you use for assessment? _____

_____

_____

How do you do the assessment? _____

_____

_____

_____

_____

How do you place your learners? _____

_____

_____

_____

_____

Do they pay for services rendered? Yes / No (tick where applicable)

If No who pays? _____

Do you refer some customers to other centers? Yes / No (tick where applicable)

If Yes where? _____

Do your customers continue to visit the facility after diagnosis? Yes / No (tick where applicable)

If yes, state other follow up services you give. _____

_____

_____

_____

_____

Do you make follow up for your customers? Yes / No (tick where applicable)

If Yes how often? _____

For how long have you associated with HI learners? _____

In your view, what challenges do they face in learning? _____

Do they take part in music festival activities? _____

Which items do they perform? _____

Do they learn music as a subject in class? _____

Can they learn music? _____

What could be the challenges they face in learning music? _____

If they learn music, of what value is music to learners with HI?

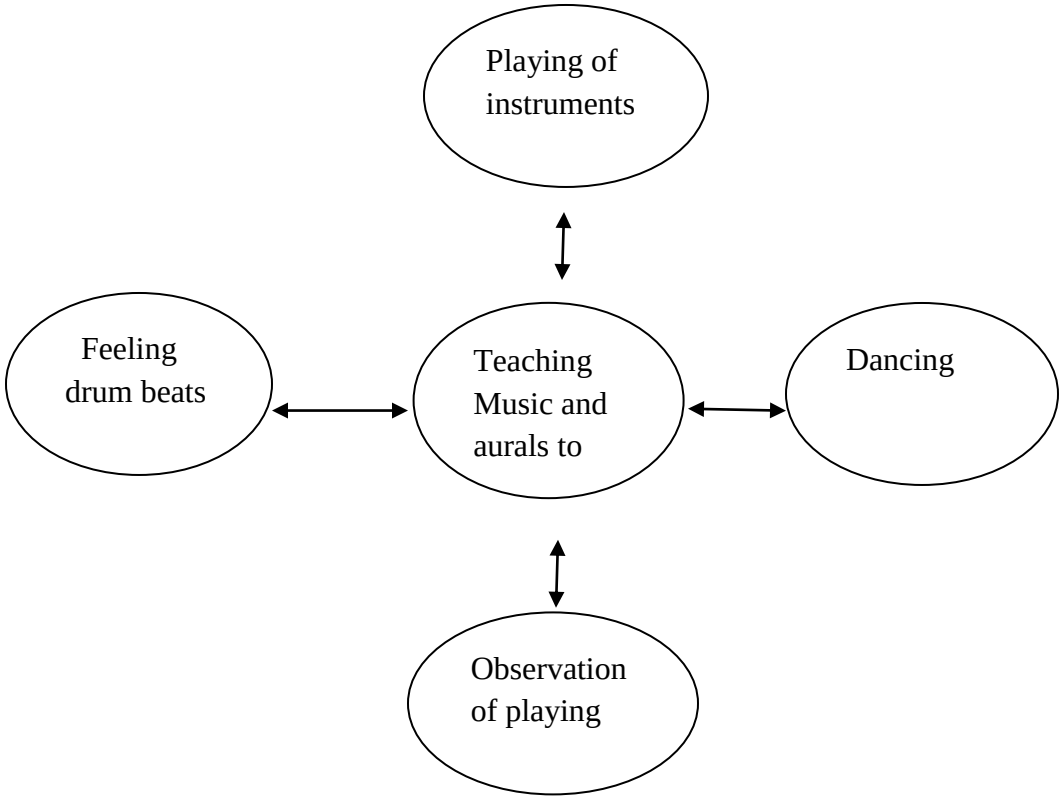
_____

Thank you for your participation

Appendix D: Questionnaire for MEARC Officers

For how long have you associated with learners with HI? _____

The following statements relate to the influence of playing musical instruments and teaching Music theory and aurals to the HI learners.



The questionnaire for EARC officers was based on the above statements which forms the basis for this study.

Please tick in the appropriate box, based on your response to the statements.

	Strongly agree	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
1. Assessment of learners with HI through EARC significantly influences teaching of Music and aurals					
2. HI learners face a lot of challenges in Music and aurals					
3. HI teachers are not trained in music					
4. Teaching of Music theory and aurals is not hampered by learning materials					
5. Music theory and aurals can be taught to HI					
6. Assessment of HI helps in sound perception					
7. HI can be taught music					
8. All HI learners should pass through E.A.R.C					
9. Observation is a key tool in teaching Music and aurals.					
10. In the absence of sense of hearing HI can use other senses to perceive musical sound.					

Appendix E: Observation schedule

Performance of learners with HI in the following areas:

Musical Element	**Activity**	**Excellent**	**V. Good**	**Good**	**Fair**	**Weak**
Rhythm	Playing drums					
Pitch	Playing keyboard					
History	Reading					
Analysis	Discussion					
Dance	Dancing					
Sign Singing	Hand Signing					
Instrumentation	Playing					

Appendix F: Photographs

St. Martin's Primary School for the Deaf preparing to perform a sign poem during the Kenya Music Festival 2017.

Source: St. Martin School for the Deaf teacher, Date: February 2017, Place: St. Martin's School for the Deaf

St. Angela Vocational Secondary School for the Deaf Girls performing a song during mass to commemorate St. Angela Day at the school grounds.

Source: St. Angela Vocational Secondary School for the Deaf Girls teacher, Date: February 2017, Place: St. Angela Vocational Secondary School for the Deaf Girls

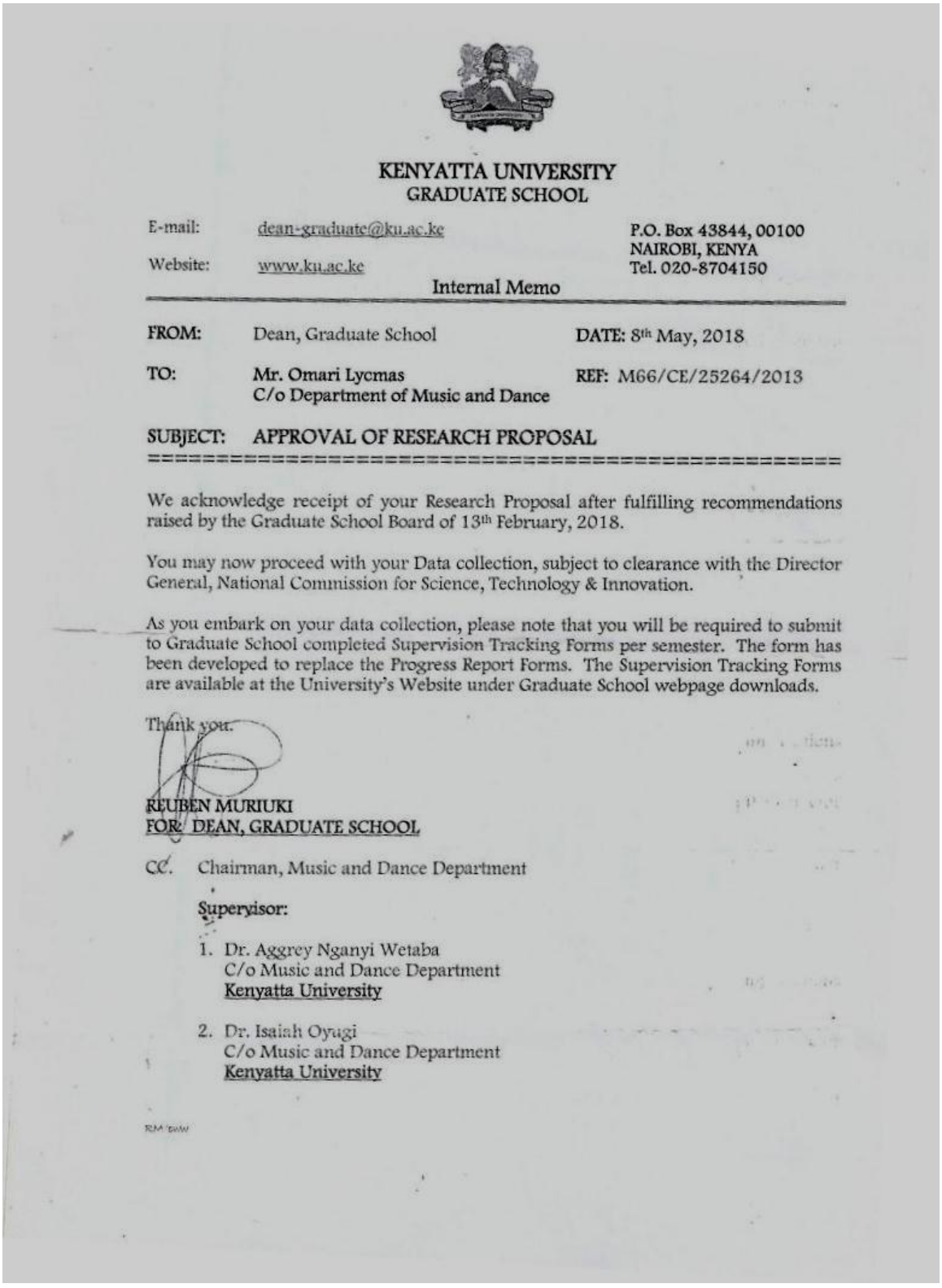
Appendix G: Work plan

ACTIVITY	TIME ALLOCATED
Preparation of concept paper and approval	January 2016 -July2016
Preparation for Thesis proposal and approval	August 2016-September 2016
Defense of proposal document	October 2016
Research work and preparation of Thesis document	October, 2016-December, 2016
Defense of Thesis document	December, 2016

Appendix H: Budget

ITEMS	COST
Purchase for flash discs, modems and other ICT materials	Ksh 20,500
Stationery	Ksh 12,200
Printing and binding	Ksh 15,450
Travelling expenses	Ksh 52,345
Subsistence	Ksh 50,000
Processing legal documents	Ksh 5,000
Miscellaneous expenses	Ksh 20,150
Grand Total	**Ksh 170,645**

Appendix I: Approval of research proposal



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School
DATE: 8th May, 2018

TO: Mr. Omari Lycmas
C/o Department of Music and Dance
REF: M66/CE/25264/2013

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your Research Proposal after fulfilling recommendations raised by the Graduate School Board of 13th February, 2018.

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

REUBEN MURIUKI
FOR: DEAN, GRADUATE SCHOOL

CC. Chairman, Music and Dance Department

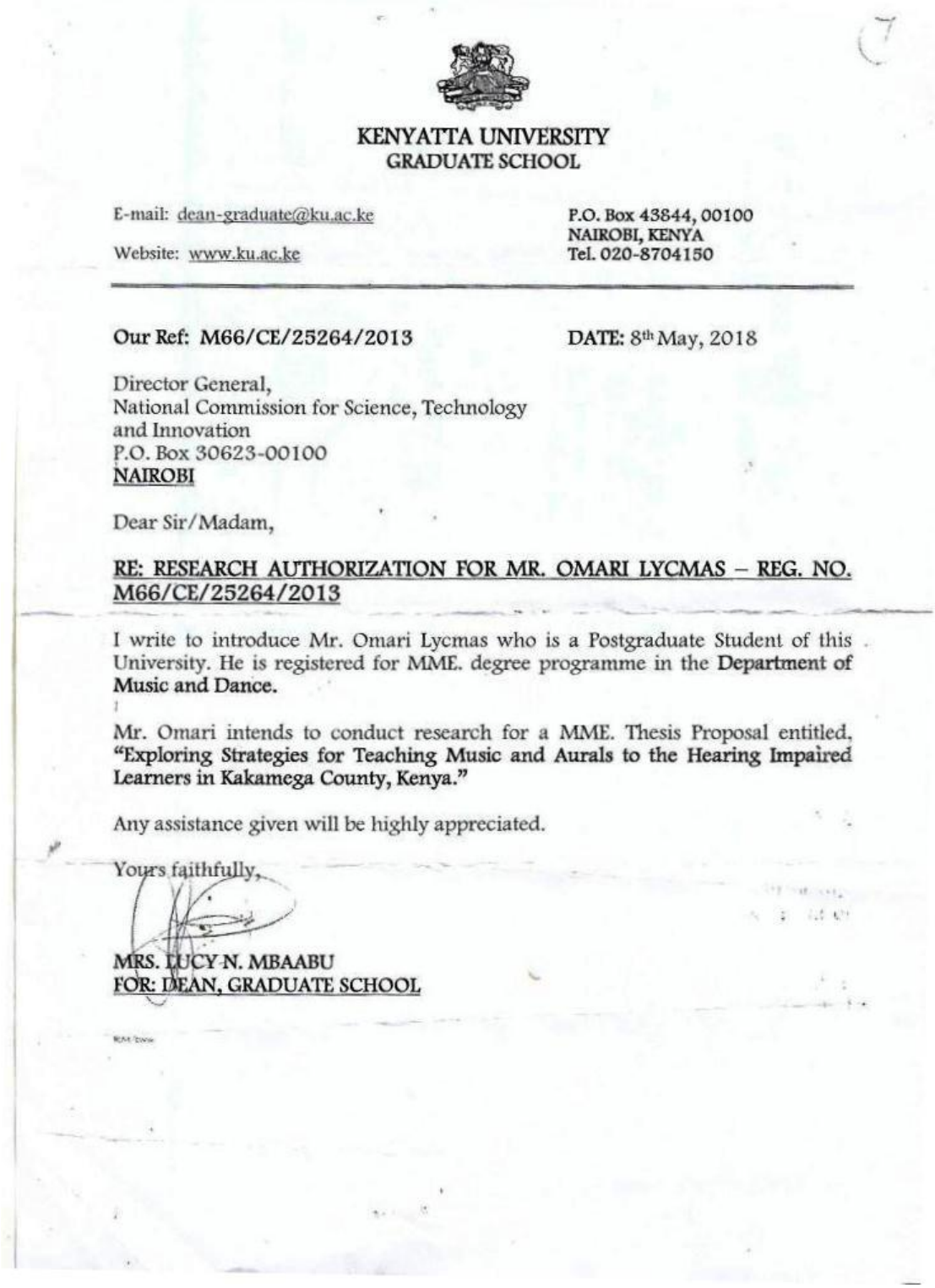
Superyisor:

1. Dr. Aggrey Nganyi Wetaba
   C/o Music and Dance Department
   Kenyatta University

2. Dr. Isaiah Oyugi
   C/o Music and Dance Department
   Kenyatta University

RM/eww

Appendix J: University's research authorization



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: M66/CE/25264/2013 DATE: 8th May, 2018

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MR. OMARI LYCMAS – REG. NO. M66/CE/25264/2013

I write to introduce Mr. Omari Lycmas who is a Postgraduate Student of this University. He is registered for MME. degree programme in the **Department of Music and Dance.**

Mr. Omari intends to conduct research for a MME. Thesis Proposal entitled, **"Exploring Strategies for Teaching Music and Aurals to the Hearing Impaired Learners in Kakamega County, Kenya."**

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

Appendix K: Research clearance permit

THIS IS TO CERTIFY THAT:
MR. LYCMAS OMARI
of KENYATTA UNIVERSITY, 175-50109
Mumias,has been permitted to conduct
research in *Kakamega County*

on the topic: *EXPLORING STRATEGIES FOR TEACHING MUSIC AND AURALS TO THE HEARING IMPAIRED LEARNERS IN KAKAMEGA COUNTY, KENYA*

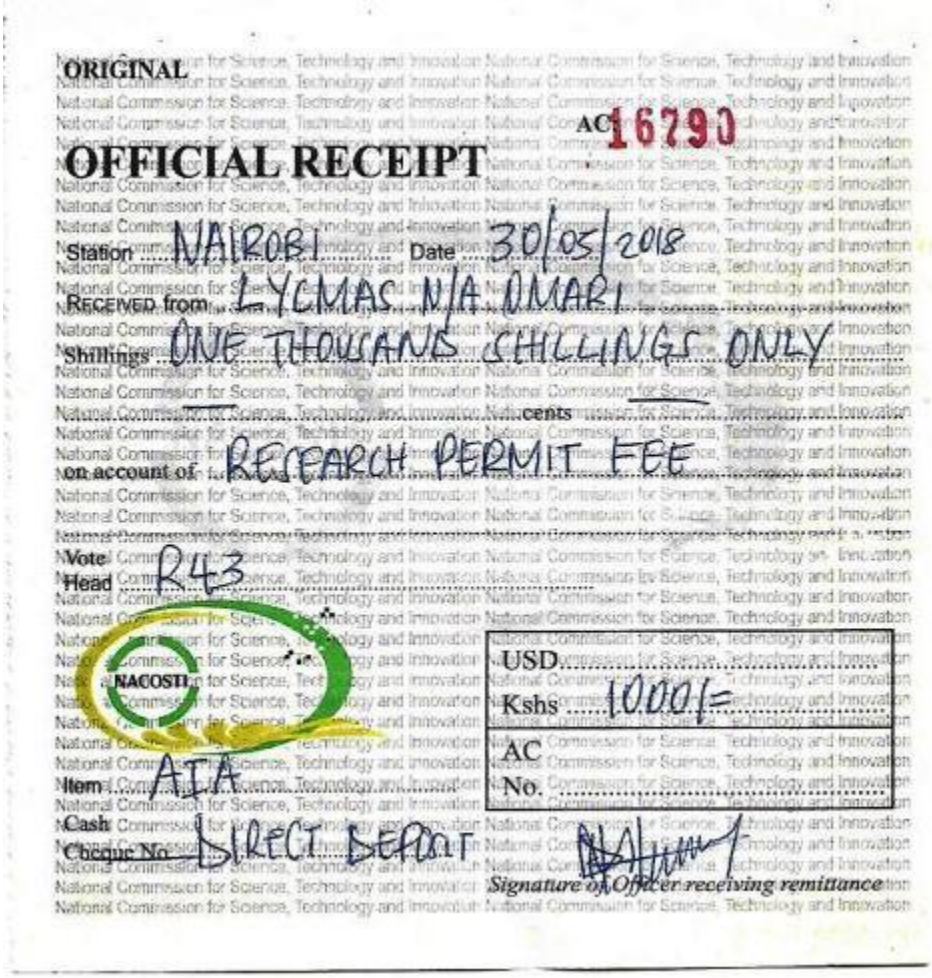
for the period ending:
7th June,2019

.....
Applicant's Signature

Permit No : NACOSTI/P/18/68948/23019
Date Of Issue : 7th June,2018
Fee Recieved :Ksh 1000

.....
Director General
National Commission for Science, Technology & Innovation

Appendix L: Research clearance receipt



ORIGINAL

AC 16790

OFFICIAL RECEIPT

Station NAIROBI Date 30/05/2018

Received from LYCMAS N/A OMARI

Shillings ONE THOUSAND SHILLINGS ONLY

cents

on account of RESEARCH PERMIT FEE

Vote

Head R43

NACOSTI

Item AIA

Cash

Cheque No DIRECT DEPOT

USD

Kshs 1000/=

AC

No.

Signature of Officer receiving remittance

Appendix M: Education ministry's research authorization

MINISTRY OF EDUCATION SCIENCE & TECHNOLOGY

Telephone: 056 - 30411
FAX : 056 – 31307
E-mail : wespropde@yahoo.com
When replying please quote.

COUNTY DIRECTOR OF EDUCATION
KAKAMEGA COUNTY
P. O. BOX 137 - 50100
KAKAMEGA

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

REF: WP/GA/29/17/VOL. IV/ 25 **17th July, 2018**

Lycmas Omari
Kenyatta University
P. O. Box 43844 – 00100
NAIROBI

RE: RESEARCH AUTHORIZATION

The above has been granted permission by National Commission for Science, Technology and Innovation vide their letter Ref: NACOSTI/P/18/68948/23019 dated 7th June, 2018, to carry out research on "**Exploring strategies for teaching music and aurals to the hearing impaired learners in Kakamega County Kenya**, for a period ending **7th June, 2019.**

Please accord him any necessary assistance he may require.

COUNTY DIRECTOR OF EDUCATION
KAKAMEGA COUNTY

FREDRICK M. KIIRU
CDE/CEB – SECRETARY
KAKAMEGA COUNTY

Appendix N: Research authorization by ministry of interior and coordination of national government

REPUBLIC OF KENYA

THE PRESIDENCY

MINISTRY OF INTERIOR & CO-ORDINATION OF NATIONAL GOVERNMENT

Office Mobile No: 0707 085260
Email-cckakamega12@yahoo.com

When replying please quote

Ref No: ED/12/1/VOL.VI/180

COUNTY COMMISSIONER
KAKAMEGA COUNTY
P O BOX 43-50100
KAKAMEGA.

Date: 17th July, 2018

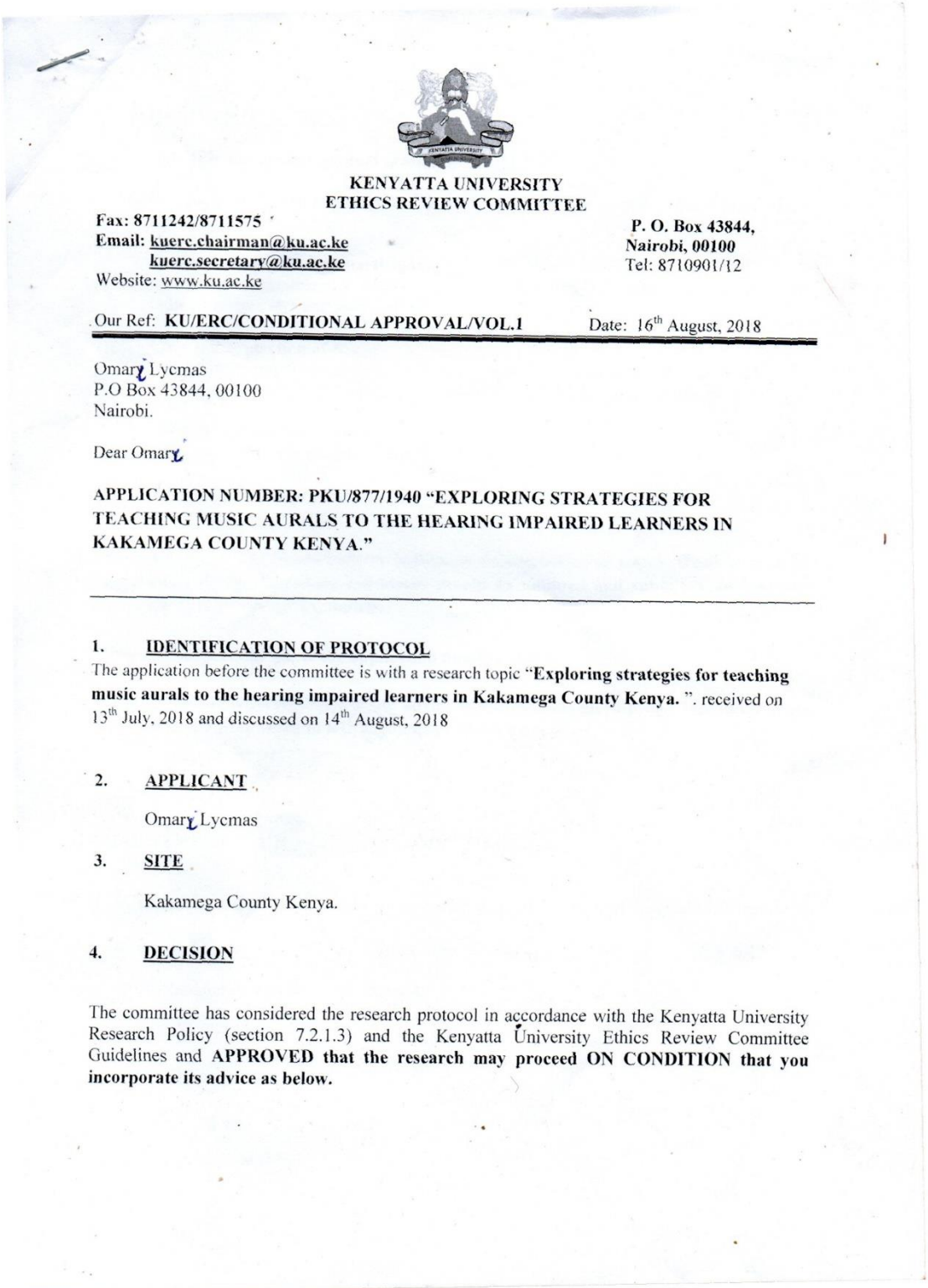
LYCMAS OMARI
KENYATTA UNIVERISTY
P O BOX 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your authorization vide letter Ref: NACOSTI/P/18/68948/23019 dated 7th June, 2018 by NACOSTI to undertake research on ***"Exploring strategies for teaching music and aurals to the hearing impaired learners in – Kakamega County ".*** I am pleased to inform you that you have been authorized to carry out the research on the same.

P. K. MARACHI
FOR: COUNTY COMMISSIONER
KAKAMEGA COUNTY

Appendix O: Research approval by ethics review committee



KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Fax: 8711242/8711575
Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
Website: www.ku.ac.ke

P. O. Box 43844,
Nairobi, 00100
Tel: 8710901/12

Our Ref: **KU/ERC/CONDITIONAL APPROVAL/VOL.1** Date: 16th August, 2018

Omary Lycmas
P.O Box 43844, 00100
Nairobi.

Dear Omary

APPLICATION NUMBER: PKU/877/1940 "EXPLORING STRATEGIES FOR TEACHING MUSIC AURALS TO THE HEARING IMPAIRED LEARNERS IN KAKAMEGA COUNTY KENYA."

1. **IDENTIFICATION OF PROTOCOL**

The application before the committee is with a research topic "**Exploring strategies for teaching music aurals to the hearing impaired learners in Kakamega County Kenya.** ". received on 13th July, 2018 and discussed on 14th August, 2018

2. **APPLICANT**

Omary Lycmas

3. **SITE**

Kakamega County Kenya.

4. **DECISION**

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines and **APPROVED that the research may proceed ON CONDITION that you incorporate its advice as below.**

5. **ADVICE/CONDITIONS**

Scientific design and conduct of study:

The design should be cross sectional descriptive design. The maps are placed in the wrong place.

Recruitment of research participants:
Indicate how randomization will be attained, to select 30%of the random respondents. Indicate sample size and how they will be recruited.

Care and protection of research participants:
Are the photographs in Appendix F really necessary? What exactly is the outcome of interest in this study? Video recording would be of great importance in this study.

Protection of confidentiality:
Not stated. How will confidentiality be guaranteed? No mention.

Informed consent process:
No mention of consenting.

The above specific conditions must be fulfilled in writing before an approval can be granted. The manner of fulfilling these conditions should be outlined and submitted to Kenyatta University Ethical Review Committee.

When replying, kindly quote the application number above.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

13 SEP 2018

PROF.JUDITH KIMIYWE
CHAIRPERSON. ETHICS REVIEW COMMITTEE

I ..LYCMAS OMARI.....accept the advice given and will fulfill the conditions therein.

Signature..... Dated this day of...13-09-..... 2018.

cc. DVC-Research Innovation and Outreach

Appendix P: Map of Kenya showing the study site

Source: Google Maps

Appendix Q: Map of Kakamega County

Source: Google Maps