USE OF EDUCATIONAL RADIO BROADCASTS IN KENYA: THE CASE OF SECONDARY SCHOOLS IN MOLO SUB COUNTY.

BY

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DECLARATION

DECLARATION BY THE CANDIDATE

This Thesis is my original work and has not been presented for a degree in any university. No part of this proposal may be produced without prior permission from the author and/or Moi University.

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DEDICATION

I dedicate this work to my parents, Henry Njoroge and Emily Mumbi who motivated me to enrol for a Masters degree. To my son Henry Njoroge, nephews and nieces, may this be a motivation for them to achieve greater academic heights.

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ABSTRACT

Radio is an important resource for education which has received considerable interest worldwide. In Kenya, for example, distance learning through radio has been used for a long time in primary schools. This study examined the use of radio as an instructional medium in Molo Sub County secondary schools in Nakuru County, Kenya. The study was guided by the innovation of dissemination theory by Fullan which highlights six factors which should be thought of before an educational technology is put in place. These factors were: clarity of the technology, observation, complexity, comparative advantage over other technologies, triability, and the cost of the technology. The study questions sought to establish the availability of relevant instructional materials that support the use of educational radio broadcast, the level of awareness of the teachers on the use of the broadcasts, the competence of the teachers on the use of Educational Radio Broadcasts (ERBs), the attitude of the teachers on the use of Educational Radio Broadcasts and to find out the support of the principals on the use of Educational Radio Broadcasts in their schools. The target population was 432 teachers drawn from 26 secondary schools in the sub county. Stratified random sampling was used in order to get all categories of schools in the in which 34% of the schools were selected as sample schools. Simple random sampling was used to get 202 teachers in the sample schools. The principals of each sample school were purposively selected for interviews. Secondary data was used as a review of literature and was sourced from written records in libraries. The principals and subject teachers formed the group where the primary data was focused. Quantitative and qualitative methods were used for data analysis. The results of this study indicate lack of awareness of the ERBs among the teachers, there was also shortage in supply of support materials from Kenya Institute of Curriculum Development (KICD) and lack of a clear policy on the use of educational media as a setback in the attempt to use the ERBs in secondary schools. The study also noted that the teachers were not adequately trained on the use of ERBs and this influenced their attitude on their utilization. It is expected that the results of this study will influence the attitude of all stakeholders in education towards the acceptance of educational radio broadcasts. The study will help the KICD to improve aspects of radio lessons produced at their institute. Teachers training institutions will also use this study to improve their courses in the area of education related technology, especially on the use of instructional radio. This study is also expected to motivate the Ministry of Education through the principals to supply more relevant support materials to the schools.

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LIST OF ABBREVIATIONS

ECDE Early Childhood Development Centre

ECT   Education Communication Technology

EFA- Education for All

EMS   Educational Media Service

ERB   Educational Radio Broadcast

ERP   Educational Radio Programmes

ICT   Information Communication and Technology.

KBC   Kenya Broadcasting Corporation

KCSE Kenya Certificate of Secondary Education

KCPE Kenya Certificate of Primary Education

KICD Kenya Institute of Curriculum Development

KIE   Kenya Institute of Education

MOE   Ministry of Education.

PTTC Primary Teachers Training Colleges

RLAP Radio Language Acquisition Project

SMASSE   Strengthening Mathematics and Sciences in Secondary Education

TAC   Teachers Advisory Centers

WSR   World Space Radio

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Introduction to the Chapter

This chapter discusses the background of the study which highlights arguments from different scholars on the use of broadcasts for schools; the historical development of school broadcasts in Kenya is also outlined. The chapter also discusses statement of the problem, purpose and objectives of the study, research questions, assumptions, rationale, significance, scope and limitations of the study. The theoretical framework which is derived from the work of Fullan (2001) is also discussed.

1.1 Background of the Study

The radio is one of the most affordable educational technologies available for use in education and development in developing countries. In Kenya, millions of people listen to radio each day to get in touch with the current news and for entertainment purposes. According to Butcher (2003) radio has been used in education ever since it became available. It has persevered through the winds of change and its relevance is still visible in the domains of education. Witich and Schiller (1962) noted that during the last decades, some educators thought that the radio would be entirely submerged under the wave of motion- picture and television, this has not happened.

The need to use audio aids in teaching to make learning interesting and improve understanding has been stressed by many authors. Odera (2006) stated, "No techniques of communication should be neglected or left untried. Sometimes the most unlikely aid may

be the most effective," (pg76). On how people learn, she said, "…We know that a large percentage of all things we learn are direct results of audio and visual aids experiences and that, it is for this reason alone that no one concerned with the communication principles and ideas or with teaching and training in any form can afford to neglect the use of audio and visual methods".

Using audio teaching aids in the classroom can improve the teacher's performance. Parr, (1999), comments that, "…when a teacher offers different pathways for students to learn… More students find success in school, using audio in schools for instance has the advantages of engaging auditory learners, adding novelty to activities and using music and mnemonics for memorization". (pg17).

According to Ellsworth (2001) radio programmes are an important option for improving educational quality on schools in most developing countries. Since the radio is relatively a low-cost technology, it can have broad coverage and greater impact on learning. A particular benefit of radio broadcast is its ability to improve classroom practices by exposing teachers and learners to different pedagogical skills.

Gutelman (2001) indicates that nowadays a great deal of the instruction in developing countries is given via radio or with considerable assistance from radio. From the educational point of view, radio has great advantage over television in that the audience can be exposed to the same message several times a day through repeat broadcasts of the same lessons.

Furthermore, Ball (1994) notes that it is time now for radio educators to rethink their role in the educational system-asking, first, what radio can do that other media cannot, with

special reference to the single sensorial path, hearing; and second to review most critically the relationship between radio and instructional materials.

Broadcast to schools in Kenya started in 1963 when the school broadcasting division of the ministry of education was established. It was expanded in 1976 into an Educational Media Service (EMS) whose mandate was to produce and broadcast educational materials to schools through what was then the Voice of Kenya (VoK).For that reason; it was absorbed into the Kenya Institute of Education (KIE) which later changed to the Kenya Institute of Curriculum Development (KICD) in 2013.

The EMS was equipped with facilities necessary for the production of educational programmes. It was mandated to develop curriculum and curriculum support materials, both in print and electronic formats. The EMS thus produced the school radio broadcasts to support key areas within the curriculum, difficult areas for both learners and teachers within individual syllabuses, health, environmental education and other emerging issues for schools and general public, New and innovative methods of learning and teaching in specific subject areas.

In 1992, VOK, which later became Kenya Broadcasting Corporation (KBC) obtained corporate status and increased the cost of transmission. The ministry of education could not therefore meet the high cost of airtime through the exchequer. Consequently in 1995, broadcast to schools through the KBC was discontinued. Nevertheless, programmes continued to be produced and disseminated to schools in the form of compact disks and cassettes. This dissemination through audio cassettes was however not effective due to inaccessibility of some areas and expansiveness of the country.

The Ministry of Education Science and Technology (MOEST) through the KIE considered alternative modes of transmitting radio programmes to schools and settled for broadcasting via world space satellite (Afristar) which uses digital audio receivers. The workability of broadcasting to schools through world space was piloted in selected schools in 2001 and after proving the project was viable, it was rolled out to other schools in 2002. The KIE produced broadcast content while the world space transmitted them through the satellite.

Principals in all the schools issued with a receiver were inducted in the operation and utilization of radio programmes during teaching and learning process. They were expected to induct the other teachers on how to operate the receivers. The world space transmitted directly from the satellite and a clear signal was received in all parts of the country. All educational institutions could receive the programmes as long as they had a world space receiver.

It was envisaged that through the project, all primary schools, secondary schools, Primary Teachers Training Colleges (PTTC), Teachers' Advisory Centers (TAC) and educational offices would be supplied with receivers. By 2006, about 16,000 primary schools had been supplied with world space receivers. A monitoring exercise carried out by KIE in 2004 revealing the following challenges. The receivers were complex to operate, High cost of dry cells in schools not connected with electric power, High cost of maintenance since only KIE had technician who could repair the receivers, High cost of subscription fee, for 30,000 receivers the MOE would pay 238 million per year.

Owing to these challenges, KIE in collaboration with MOE initiated consultative meetings with KBC in a bid to revive the educational broadcasts through the national broadcasting channel. As a result of this consultative meeting, the KIE broadcast to schools commenced through KBC English service on 29th January 2007. The programmes target learners during the school term while during the school holidays they target the general public. The programmes aired during the school term are mainly based on the school syllabus while those aired during the schools holidays cover topical pertinent issues in the society. Broadcast through KBC was advantageous since it was cost effective and the reception could be done using ordinary radios which are affordable and easy to operate. The signal is received in most parts of the country. Maintenance of the ordinary radios could be done by the local technicians.

It is therefore against this background that the study is aimed at looking at the use of these radio broadcasts by secondary school teachers to supplement their teaching.

1.2 Statement of the Problem

The Kenya Institute of Curriculum Development (KICD) through Educational Media Service develops broadcast content which is transmitted through the National broadcaster- Kenya Broadcasting Corporation (KBC) on week days from 8.25 am to 5.00 pm. The broadcast content is mainly on the formal school curriculum. It also covers pertinent issues in the society such as HIV and AIDS, environmental education, drug preventive education and life skills. The programmes are developed through a panel system made up of practicing teachers and other specialized people in specific areas.

These programmes cost hundreds of millions to sustain them throughout the year. The government of Kenya however is committed to ensuring that the use of information communication technology (ICT) in education is accessible to all Kenyans. During the launch of educational digital TV and radio channel at the K.I.E Nairobi, on March 30th 2010, the then president of Kenya, Mwai Kibaki said "… all these initiatives are being undertaken as part of the overall strategy to integrate ICT in education and provide quality primary and secondary education to all Kenyans". During the launch the K.I.E director Lydia Nzomo remarked, "… the institute has finalized arrangements to run a 24/7 audio and TV channel aimed at enriching and supplementing classroom teaching covering languages, sciences, Arts, Agriculture and applied sciences". Sennit (2010). (pg17)

The elected Jubilee Government in Kenya pledged to support the integration of ICT to boost education in the country. Through its manifesto in the uchumi (economy) pillar, it promised to increase human resource capacity in ICT through improved ICT education in schools and training teachers. (Gachie, 2013).

Given that the radio has demonstrated effectiveness as an important technology, there is need to look on how it is used in classrooms in the secondary schools. Studies have shown that these programmes are underutilized by teachers in the schools. Odera (1996) noted that, many teachers of secondary schools in Kenya do not make use of this important media. She observed that radio has become well established and wide spread; yet, it seems that insufficient educational use is being deterred by the repeated use of other media, which, however, have the major defect of coping with such widespread distributions for a long time to come.

Eshiwani (1983) observed that there is much to be done to motivate the teachers to embrace the use of educational radio. Scholars, Molenda & Smaldino (2002), also noted the value of radio technology and recommended its use to increase and improve learners' imagination and listening skills. They recognised the importance of radio as a medium that relies on a single sense (hearing) and with which listening is the only method of learning.

It is therefore for this reasons that this research is aimed at looking at the use of live educational radio by secondary school teachers as a medium of instruction.

1.3 Purpose of the Study

The purpose of this study was to assess the use of radio broadcasts in secondary schools in Kenya. The study then made necessary suggestions and recommendations to the authorities concerned as far as the use of educational radio broadcast are concerned.

1.4 Objectives of the Study

The main objective was to investigate the use of educational radio broadcasts in secondary schools in Molo Sub County. The specific objectives were:

i) To establish the availability of instructional materials that supports the use of Educational Radio Broadcasts.

ii) To determine the level of awareness of secondary school teachers on the use of Educational Radio Broadcasts.

iii) To examine the competence of secondary school teachers in the use of Educational Radio Broadcasts.

iv) To establish the attitude of secondary school teachers on the use of Educational Radio Broadcasts.

v) To determine the support of the principals on the use of Educational Radio Broadcasts in the school.

1.5 Research Questions

The main research question was; how are the educational radio broadcasts used in secondary schools in Molo Sub County? Specifically:

i) What is the status of the availability of instructional materials that support the use of Educational Radio Broadcasts in secondary schools?

ii) What is the level of awareness of secondary school teachers on the use of Educational Radio Broadcasts?

iii) What is the level of competence of secondary school teachers on the use of Educational Radio Broadcasts?

iv) What is the attitude of secondary schools teachers towards the use of Educational Radio Broadcasts?

v) What support do the principals give on the use of Educational Radio Broadcasts?

1.6 Assumptions of the Study

The following study assumptions were made.

i) That interview questions and the questionnaire used would be adequately understood and interpreted correctly by the respondents.

ii) That there was cooperation from the teachers and principals of secondary schools in providing information relevant to this research.

1.7 Justification of the Study

The Ministry of Education through the KICD spends a lot of time, manpower and money on the preparation and production of Educational Radio Programmes to be used by teachers and learners in order to enhance learning. The broadcast takes almost all the days broadcast in the national broadcaster channel – KBC (English service). This important resource should not be ignored or remain underutilized. Although most of the topics dealt with are available in other sources such as text books, audio-visual and other printed media. The radio as a teacher supplement should not be neglected or remain underutilized.

The ERPs are appropriate resource especially in instances where there is low teacher-student ratio. A teacher may be able to teach one class and leave the other to listen to a radio programme, in that way, the teacher attends two lessons at the same time. Since the ERPs are prepared in line with the school syllabus, it can be used to occupy the learners in the absence of the teacher. The learners who miss classes due to illness, lack of school fees or due to other reasons may also find the ERPs handy since with a cheap transmitter radio which is available in most households, the learner may tune to the broadcasts and listen to them from their homes.

Radio programmes are especially effective when teaching pronunciation which is a major challenge for second language learners. Pronunciation lessons are prepared by specialists of a language who can pronounce words clearly and correctly (KIE 2004). There has been a continuous outcry over poor spelling in the written English in the National examinations, some of the spelling problems emanate from poor or faulty pronunciation

of words. A teacher who is also affected by mother tongue influence when pronouncing words may resort to use radio programmes when teaching pronunciation because teachers with best articulation skills are used to produce the programmes.

There is therefore a need to assess how the ERBs are used in secondary schools with a view to identifying any problems and challenges that hinder the effective use of the broadcasts.

1.8 Significance of the Study

The study focused on the use of Educational Radio Broadcasts (ERBs) in secondary schools. Factors which include the availability of resources, awareness, teachers' competence, teachers' attitude and the role of school principals in using the ERBs was of importance to the study. The findings of this study will therefore be of use to various stakeholders in the education sector. The teachers and students are likely to be sensitized on the importance of ERBs as teachers supplement. Their attitude towards them is expected to be influenced and find these programmes helpful in improving the quality of teaching and learning or moving away from the normal teaching where the teacher uses chalk, blackboard and textbook.

Through radio, master teaching in such diverse fields as science, social studies, art, music, language, safety education and can provide enriching experiences for both the pupils, in the form of additional useful information or techniques and the teachers as models to be followed (Wittich & Schuller, 1992).

This research may also motivate principals and administrators of schools to equip schools with adequate audio aids such as radios which facilitate the ERPs to be used in their schools.

The KICD which produces the ERPs will also benefit from the findings of this study since it will be able to evaluate the utilization of the service and determine the success of the programme.

Teacher training institutions such as universities and teachers training colleges are likely to be inspired and give more emphasize on educational technology courses during the teacher training sessions to ensure that the trained teachers appreciate the technology as a positive tool for enhancing learning in the classroom.

1.9 Scope and limitations of the study

1.9.1 Scope of the study

The study assessed the use of ERBs in secondary schools in Kenya and focused on availability of instructional materials that supports the broadcasts, the level of awareness of secondary school teachers, their attitude and the support the principals give on the use of ERBs. The researcher considered the ERPs prepared by KICD and aired live through KBC English service. Specific interest was on how these programmes were used to enhance teaching and learning in the classrooms. Questionnaire, interview and observation were the main instruments of collecting data. The respondents were the secondary school teachers and principals. The study was at based Molo Sub County, which has been created recently from the former Nakuru District.

For the purpose of the study, County schools, Sub County schools and private schools were considered. The assumption is that all categories of schools have the ability to afford the necessary facilities required to use the radio as an instructional media.

1.9.2 Limitations

It was expected that the tools of research used, mainly the semi- structured interviews and the questionnaires, would be properly understood and interpreted by the respondents. However, this was a limitation as some of the respondents did not return or fully respond to them, hence making the results inadequate based on non-response or improper responses.

1.10   Theoretical Framework

This study was guided by the innovation dissemination theory by Fullan (2001) which captures the main features that should be put into consideration when adopting innovations such as educational radio broadcasts. According to the theory, six fundamental components of the implementations are highlighted. The first of these is clarity which brings to fore the importance of bringing on board those who will be implementing the innovations with the view to helping them understand its application within their setting. The theory also exposes observations which require the would be adopters to clearly see the features of these innovation.

Closely related to clarity and observation is the element of complexity which refers to the extent of ease of use of the innovation among the would be adopters. Fullan (2001) also identifies comparative advantage which refers to the extent to which the technology-based instruction is better than another in terms of greater students' achievement or in teachers' ease of use. Trial on the other hand refers to the implementation of the innovation in small increments prior to a major commitment. The last but still important of the theory cost which states that, where there are other innovations that can yield similar results, the lower cost options generally have the advantage.

Fullan (2001)also notices that there are different structures of innovative process presented in the process of educational innovation implementation and can be looked at in three phrases. The phrases starts with initiation where the important decision to implement the innovation is made, the second phrase is the implementation where the idea is put into practice, the final phrase is the institutionalization whereby the question arises whether the innovation will become a part of the system or it will be rejected. The education implementation phrases are seen as mutually interrelated elements. They supplement each other and are realized as a sustained cycle of educational implementation.

He also observed that the innovation implementation cycle is a sustained flow where stages and cycles are closely interrelated. When realizing it, the results of each phrase become the background of the other. He thinks that logical sequence of innovative process is not linear and has definite limits of termination. It may recur and influence the creation of new innovations. This reflects the dynamic nature of innovative process.

The radio has demonstrated all the components discussed by Fullan (2001). It has shown its clarity in that the users are able to understand its application. It is also observable and all users are able to see its features. Its complexity has been seen on the simplicity of its use. The radio has also demonstrated its advantage in education compared to other media. It has also been tried by experts before it was implemented in the classrooms. The cost of the radio as an educational media is relatively low compared to the cost of other media.

The six guidelines advanced by the innovation dissemination theory (Fullan 2001) and the three phrases are definitely a call for a well thought out plan for the implementation of the educational radio broadcasts.

1.11 Definition of Operational Terms

Attitude   Positive or negative emotional reaction towards a specific subject

Awareness   State of knowing or understanding of a subject, issue or situation

Competence   The knowledge and skills in the methodology of teaching

Educational Radio Broadcast   Transmission and distribution of information to learning institutions through the radio

Educational Radio programmes A series of instructions presented on the radio at a scheduled time.

Instructions   A set of organized knowledge aimed at facilitating learning toward identified objectives, delivered either by an instructor or other forms.

Instructional materials   A variety of items that are designed to serve as major tools for assisting in the instruction of a subject.

Learning   Receiving instructions with a view toward preparing a person with specific knowledge, skills, or abilities that can be applied immediately upon completion. It can also be seen as a change in stable relationship between a stimulus that is made, either covertly or overtly.

Media   Any material equipment or instrument that facilitates the transfer of information.

Support material **Any** media or teaching aid whose purpose is to complement or

support the use of educational radio broadcast.

Teaching   An act of stimulating, guiding, directing and encouraging students to

acquire the desired knowledge and skills in a desirable way.

Broadcast catalogue A booklet designed to indicate the relevance of particular

broadcast lessons, support materials required, the activities to be

undertaken by the learners and the expected role of the teacher

during the broadcast.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section deals with general review of literature related to the study as derived from past research studies, books, reports, journals, primary sources and the internet. The literature review will be presented under several sub-headings in relation to the variables of the research topics

2.1 Relevance of educational technology to teaching

Modern educational technologies, which encompass audio, audio-visual media and computers, have a great potential to improve and transform learning in secondary education. This potentiality include improving the clarity and comprehensibility of communication in the classroom, providing mechanism for greater individualization in learning, implementing curriculum reforms, enhancing the application of new learning to daily life and increasing instructional productivity of schools.

The integration of learning technologies into high school classrooms is being promoted and supported around the world. Underlying the promotion and support are claims that will lead to enhanced learning outcomes (UNESCO, 1998).

Fox (2004) stated that technology is being fused into the schools and its ongoing is unstoppable, and necessary. Thus, schools use and access to the new technologies is on

the rise and more countries have established technology standards for students, teachers and administrators. He observed that technology has numerous advantages such as opening the classroom for more communication opportunities, encourage more teacher-student and student-student discussion ,share the authority as more resources are brought into the classroom, create opportunities for tasks that are complex and authentic and connect to projects which may be multidisciplinary and long term, give students more opportunities for multiple ways of discovering, and lastly, it helps in creating and communicating information in various formats and voices.

According to Means and Olson (1997), as cited in Charr-Chellan And Dyer (2000) the use of educational technologies fosters the adolescents a bridge from concrete to abstract thinking enabling them to observe and create multiple representation of mathematical ideas; numerically, graphically and symbolically. They note that technology has become a very powerful tool to develop abstract thinking which should be reflected also in assessment. They also note that technology supports students' performances of complex tasks that are similar to those performed by adult professionals. They further state that technology promotes collaborative team learning especially in motivation for students with special needs.

Reeves (2002) stated that learning achievement is directly dependent on four factors; aptitude, motivation, instruction, and physical environment of the classroom. Important to add is the idea from Plomband (1996) who assert that though in a given society schools perform a number of functions in addition to instruction in the curriculum, educational

technology focuses on primary mission, that of attainment of the knowledge, skills and attitudes separated in the curriculum.

Several scholars (Wittich & Schuller, 1992; Dale, 1994; Kim & Kellough, 1974; Wend, 1975;Walken, 1983 and Hills, 1986) agree the use of educational technology in learning makes learning more interesting, learning is retained longer than that acquired by verbal teaching, learners acquire different skills, greater benefits can be obtained from the use of multiple-media technology.(Ramiszowski,1988).

Solomon (2003) states that media use in the instruction is very motivating to the learners and very stimulating hence better learning. During educational conference in Nairobi, experts who included education ministers from Africa agreed that if fully utilised, technology can reduce the cost of education and boost efficiency (Daily Nation June 8, 2007).

A lot of research conducted by experts all over the world has proved beyond doubt that the use of educational technologies has innumerable benefits; this research therefore studied how secondary school teachers in Molo Sub County use educational radio broadcasts to supplement their teaching.

2.2 The importance of modern technology to the teacher education

Teacher education has absolutely vital role to play in the molding of the teacher, (Webb & Kembo, 2000). They assert that language teacher education is too important to be taken for granted. It is therefore necessary for teacher training institutions such as Moi University to incorporate the modern educational technologies in the teacher training

programme. This will ensure teacher competence in the use and acquisition of modern educational technologies in the field of instruction.

Fullan (1992) suggested that training should not be one shot workshops, but rather ongoing experiences so that teachers can be kept up to- date with ever-changing technologies. Teachers need follow-up training sessions to ensure that they keep abreast with current technologies. Hence, teacher training is crucial and these programmes must adequately prepare teachers with skills necessary to integrate technology in their classes. Moreover, they must learn to work smarter and have a vision to implement ICT in their classes. Having vision requires strategic planning, risk-taking and decision making, imagination and commitment. In addition, teachers need to have a clear understanding of what to change as well as how to change (Bennis, 1990). Therefore, they need to become lifelong learners and develop their skills and abilities to overcome their fear of being the captain and focus on leading the ship. In other words the teachers must work to become transformational leaders.

The evolution of education and the need for generalizing and integrating new technologies, make teacher training a pivotal point. Teacher education must incorporate both knowledge acquisition and pedagogical competencies for effective instruction.

The introduction of new technologies in teaching needs some reflection about the educational system of education of tomorrow and the nature of the school (Watson & Tinsley, 1995). Fears seems to exist among teachers whether the use of modern technologies would replace them, job securities in developing countries is paramount and therefore everybody will do all that is possible to protect his/her source of daily bread.

The introduction of new technologies such as machines in some places has rendered most of the people jobless.

"e-learning involves application of different technologies such as interactive white boards, videos, radios … for example in south Africa we have a project where schools that are 15km away have only one math teacher" (Daily nation June 8; 2007p14). One of the leading educational technologists said in educational conference in Nairobi.

Delegates in the same conference who included education ministers agreed that technology if it is fully utilized can reduce the cost of education and boost efficiency. A teacher remains a teacher and a machine remains a machine. Teachers are trained in human psychology and philosophy which help them in shaping learners' destiny which machines cannot do.

Scientific researchers have proved successfully that human resources are needed to design, purchase, implement, develop, maintain, administer, evaluate, monitor, support and (in some cases) compensate for the technology resource. Furthermore what technology can teach well and what human can teach well are sometimes quite different things (Noel Williams, 1991).

Appropriate technology use can be very beneficial to increase productivity and the credit goes to the teacher. To be effective when using technology, teachers need to be highly involved by interacting and providing feedback to students. (Byroom, 2001; Clement & Salama, 2003; Kulik, 2002; Mann, Shake Shaft, Beeker & Koffkame 1998; Valdez & Rack 1999) as cited by Abenga (2005). The effective of technology and students' access

to knowledge is determined by the pedagogical knowledge and skills of the teacher. He even became more direct when he stated that without strong teacher knowledge of ways to use technology; a lot of precious time can be wasted.

The use of educational technologies offers administrative relief. The teachers will greatly promote their professionalism and help them in time management Parr (1999). Charr-Chell & Dyer (2000), noted that the current support for and promotion of the use of learning technologies in classroom, will bring admirable needs and additional focus increased time for experience for teachers to undertake professional development.

Investigations show that the innovation and effective use of technology promotes creativity and rapport among the teachers and learners hence making learning more productive. Technology does not take away the work of a teacher as may be thought by speculations. Instead technology increases the effectiveness of teaching profession for it promotes a teacher from a school to become a global teacher (Underwood and Underwood, 1990). They further noted that technology has brought about a global village of learning. In the storage of facts, machines can remember facts more than human beings and therefore machines will relieve teachers from the unnecessary work trying to remember in a limited period of time (Theodore & Schechter, 1991).

Most of the world's current curriculum of education promotes student centered kind of learning and the innovation and use of educational technologies will relieve teachers from being the centers of knowledge to being resourceful. Technologies bring activities, which are miles away to classroom which otherwise could not have been learned forever. Teachers and learners can increase their knowledge from specialist in a distant world

through technology. If the technology is complementary and not substitutive to the work of a teacher, then what makes the teacher not to use modern technology effectively?

In conclusion, it is a fact that teacher training programmes play an important role to provide the necessary leadership in training pre-service and in-service teachers to deal with the current demands of society and economy. They should model the new pedagogies and tools for learning with the aim of enhancing the teaching learning process. Moreover, teacher education institutions and programmes must help teachers to understand how the new technologies can best be used in the context of the culture, needs, and economic conditions of their country. Hence, building the capacity of teachers in the utilization of ICT for education requires long-term continuous development of the lead trainers, sharing of knowledge among teachers, partnerships and collaboration among educators and organizations, and support from principals and administrators. These factors must be available in order to create changes in the classroom. Therefore, both teachers and trainers require ongoing support and opportunities to experiment with new skills and strategies over time.

2.3 Availability of resources for teaching and learning

The major concern of education planners and providers the world over is to attempt to put in place systems that will provide learners with acceptable and quality learning experiences. The belief is that with provision of quality experiences, desired knowledge, skills and attitudes are more likely to be learned. Bett (2008) noted the importance of interaction between the students and media resources in teaching and learning. Curriculum developers point out that no curriculum can be effectively implemented in the absence of adequate teaching-learning resources. Consequently, resources must be made available.

Abagi (1993) stresses that there is no sense in having a demanding curriculum without the necessary resources both human and physical. Apart from the government and private sector taking active role, teachers and pupils must be innovative in designing and developing resources.

Teachers and students can take an active role towards making the teaching-learning resources available. They can do this through improvisation using local resource. In most cases, aids made by the teachers and students are often more effective than those commercially produced, designed for other situations. This is because commercially prepared materials are aimed at a wide range of grade levels so that there is potentiality large market for the products. (Romiszowki, 1998).

The Republic of Kenya (1988) states that the provision of quality and relevant education and training are dependent on among other things, the supply of other equipment and

teaching materials. The availability of resources implies that the teacher's work is made easier for he can easily select what he requires from the available materials. This is further supported by Maranga (1993) asserts that resources and methods of instruction, among others, affects the amount of learning that takes place. Therefore effective learning demands that resources are made available to the students. The extent to which teaching resources are used varies from school to school. Some expensive items of equipment are available in some schools but remains most of the time locked up in stores or cupboards (Kafu, 1976). This brings out the problem of underutilization of the existing resources. There is need to increase use of the available resources of teaching before more fiscal investments are made. The teachers have to be well prepared in the use of both the existing and new media they are likely to come across in their everyday teaching. It is important to provide in-service courses to keep the teacher informed about the recent developments in instructional technology. This is quite relevant especially for teachers who were not specifically trained to teach the subjects.

Gage (1999) conceived professional qualification of a modern teacher as that of having to develop and utilize 'the science of the art of teaching': meaning that the teacher must have sufficient repertoire of knowledge and skills, experiences and insights, the artistic creativity from which to draw hunches to enable planning and creation of unique learning environment and experiences which are necessary for each particular lesson and group of learners.

Borich (2006) rightly asserts that experience is an important basis for further professional development of a teacher since the teacher widely draws from his or her experience to improve his or her effectiveness and to counter problems encountered in teaching

This view is also held by Solomon (2003) who says that such a post of professional programme given to teachers during their period of employment is crucial in a teachers' professional development because it helps to fill the gap left by the college training, to enlarge and refine teachers' knowledge and skills and support innovations or test of new curriculum, methods and materials for instructions.

Planning lessons is extremely vital for good teaching. Borich (2006) stress serious planning before the teacher enters a class to teach. Tudor (1990) also observed that properly planed pre-reading activities improved learner's comprehension.

Many secondary schools in Kenya are experiencing acute shortage of the necessary instructional resources. The KIE noted with concerns that when there are limited resources and learners share the few available, the slow learners fail to acquire the related skills as fast as the fast learners (KIE 1990) there is therefore need to improve resource materials which are not available

Although it is evident that there is a shortage of resources in the schools, there should be optimum use of the available resources including human resource if good performance is to be achieved (RoK, 2005). Ngala (1997) says that where teachers are scarce, principals blame poor performance on this. But according to Good (as cited in Ngala, 1997). It is

clear that utilisation of the resources available is more important than the quality of resources.

2.4 The radio as an instructional media

In his abstract of the book "audio visual aids for teaching English," Ramji (2005) states that good teachers have always recognized that education and life are one and have used everything at their command to vitalize the learning process through the five senses. In his endeavor, the use of audio and visual aids has always been an integral part of education from traditional devises to modern technology ones like radios, movies, tape recorders and televisions. These devices enable the teacher to enrich and supplement the curriculum in providing perceptual and auditory experience making learning easy for students.

Radio lessons as a resource material of the audio nature, can effectively supplement the classroom teacher and enrich the teaching and learning in the classroom, this is because students respond to information differently, Zimmer (2006) identifies that it is often to our advantage as teachers to use many different formats and models to teach the subject matter of our lessons. This is why teachers use some combinations of lecture, texts, graphics, audio, visual and audio-visual resources for conveying information.

In Kenya today, the syllabus puts a lot of emphasis on learning for life. A lot of emerging technologies have been embraced in the teaching profession. K.I.E (2006) suggests various resources that a teacher can use to facilitate instruction. These include mainly radio broadcasts, audio tapes, and audio visual materials among others. The ministry of

education does not restrict teachers to the use the K.I.C.D produced materials only. It suggests that the teacher can make own audio programmes with the class or other resource persons. It also suggest that the teacher can innovatively and creatively take advantage of radio programmes aired by the national broadcaster or other broadcasting stations that can appropriately enhance the teaching of a given aspect of learning.

The syllabus emphasizes that for a teacher to effectively help the learner acquire proficiency in any subject taught, it is appropriate to use both human and non-human resources. It is important to sort out the radio stations and programmes to get the best for teaching the desired content to meet the set objectives depending on the level of the student. Even when this happens, the likelihood is that there will be no consistency and uniformity. This type of task has been made simple for the teachers by the K.I.C.D by providing programmed radio broadcasts and other audio materials in form of audio tapes. The broadcast content is mainly on the formal school curriculum. It also covers pertinent issues in the society such as HIV and AIDS, environmental education, drug preventive education and life skills. The programmes are developed through a panel system made up of practicing teachers and other specialized people in specific areas. K.I.E also provides guidance on how to use this radio broadcast along with the broadcast timetable (K.I.E, 2006).

2.5 Significance of educational radio broadcasts

The modern school broadcast is carefully planned audio -learning experience which utilizes resources beyond those available in the usual classroom situation. Because these broadcasts are usually prepared by excellent teachers and subject experts, schools radio

programs make possible outstanding and unusual learning experiences (Wittich & Schuller, 1992). These scholars also identified several advantageous characteristics of radio programs for classroom use:

i.   Radio can bring carefully planned teaching experiences into any classroom that is equipped with a receiver.

ii.   Radio can bring outstanding demonstrators, teachers, and other experts into the classroom.

iii.   Radio is inherently interesting and challenges the attentive listening of learners.

iv.   A well- planned classroom radio lesson is in itself a valuable in-service training experience for the teacher who listens.

v.   The classroom use of radio not only is a listening activity but on occasions invites participation of the learners.

On the other hand, Ball (1994) pointed the strengths and weakness of school broadcasting and says that one of the strength of schools broadcasting is that it is directed at an organized audience in a classroom, whereas, conversely, one of the weaknesses of a radio element of correspondence courses is the very absence of organized listening. Educational radio has been successfully used in many countries at village level by using organized groups of listeners.

Importance of educational broadcasting cannot be over emphasized for accelerating the pace of national development in general and for bringing about qualitative as well as quantitative improvement of education in particular. This is felt more significance in developing countries (Mohanty,1992).

Similarly, Levesnon and Stasheff (1952) described that the measure of broadcasting's specific contributions to education can be gauged only by its relation to the general objectives of education. The contributions, though they overlap, may be grouped as follows:

Broadcasts are Timely: Radio presents and interprets the event while it is current and before it becomes history, whereas Text-books and even magazines cannot do that.

Broadcast conquers space: Radio's ability to transmit the spoken word with the speed of light is vital significance in modern life. With radio, the most isolated classrooms can hear the world (Dale, 1994).

Broadcast can give pupils a sense of participation since the qualified teacher knows that direct, more than indirect experiences are productive of learning. According to Borich (2006), the carefully selected pupil activity, the well-planned field trip, the practical problem which grows out of a felt need-all these are participatory in natural and effective educationally. Radio can help to opening the doors of the classroom to the world outside.

Broadcasting can be an emotional force in the creation of desirable attitude. Radio is thought of frequently as a teaching aid which can accelerate the accumulation of facts.

However, facts alone are not the aim of education. The decisive factor is what the leaner does with the facts (Levenson & Stasheff, 1992).

Broadcasting can add authority to the teacher. Few teachers, however conscientious they may be, can hope to be experts in every phase of the subject matter they teach. The occasional appearance of an authority, whose material is planned to relate to the interests, needs, and capacities of pupils, can be of active assistance to the teacher. Skillful use was made of authoritative information which held the listener's interests. The classroom visit of an authority made possible through radio has been used effectively in various subject fields. (Dale,1994).

Broadcasting can integrate the learner's Experience, the correlation of the child's activities in school with those he undergoes after school has become increasingly difficult. Kinder (2009) said that another aspect of integration which the teacher faces is the coordination of the knowledge obtained in various classrooms. Many other programs of this nature have shown how radio can contribute to an amalgamation of what the child may consider unrelated knowledge.

Broadcasting can challenge dogmatic teaching, Levenson and Stasheff (1992) pointed out that passive learning and dogmatic teaching are much too common in many classrooms. Several local stations have broadcast discussion and school-presented programs have been fine demonstrations of radio's capacity to encourage a more scientific attitude toward social problems. Broadcasting can be used to develop discrimination.

People can be roughly divided into two classes, the sponge minded and the critical minded. The sponge- minded absorb with equal gullibility what they see at the movies, what they read in the newspaper, what they hear over the radio. They are the passive viewers, readers, and listeners. The critically minded are active, not passive, in their reception of the printed and spoken word or the motion picture they constantly ask: It is true? Where is your evidence?

Skillful teachers in many parts of the country have used radio to help attain such goals. Broadcasting can help in continuous curriculum Revision since no curriculum worthy of the name can remain static while an ever-changing society makes new demands upon its members. Constant and continuous curriculum revision is an accepted ideal in modern education (Tyler, 1949). It has been found that with the use of the radio and adequate teacher guides, curricular revision is more than a "scissors and paste" technique. As the teacher and her class utilize the program which introduces a new topic or changes the emphasis of old material, the revision means something to her (Levenson & Stasheff, 1992)

Broadcasting can 'up-Grade' teaching skills in that industry's recent and successful use of teaching aids to improve skills while on the job has been followed with great interest by administrators. In a few communities radio has been used in the school with a similar purpose in mind, namely, the improvement of teaching methods. Those who have felt that radio can demonstrate good teaching, as well as contribute the other values described earlier, hold this point of view that radio is a primarily an agency of distribution.

Broadcasting can interpret the schools to the community. Another service which broadcasts, audio or video, can render the schools derives from their unique ability to interpret school activities to the public. Public relations broadcasting by schools do not imply high pressure salesmanship. An effective program serving this end can be in good taste and yet good listening.

Broadcasting Offers closer observation of individual children. It provides the teacher with a chance for closer observation of individual children, their listening habits, their ability to comprehend, and their special interest. There is another aspect of radio to consider. For many centuries teaching was done largely by means of a teacher's Voice. Today, sound has once more come into its own through the great influence of radio.

Broadcasting offers a service to handicapped children. (Levenson & Stasheff 1992) in the discussion identifies the contributions made by the radio to the handicapped children who must remain at home. In every community there are shut-in children who because of illness or injury cannot attend school. For them a radio service that is both interesting and informative is of immense value educationally and perhaps therapeutically as well.

To sum up, as an important medium, radio will help improving the standards of education and it should not be neglected any longer in the interest of better quality and massive expansion of education in the country. Educational radio broadcasting is a useful means of providing learning experiences for a large number of students. It has been an especially helpful resource for remote, isolated schools.

2.6 Teachers' attitude towards educational radio broadcast utilization

A review of the Psychological literature reveals diverse definitions of attitudes. Allport (2004) defined it as a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. Other researchers define attitude as a positive or negative emotional reaction toward a specific situation. Moreover, Fishbein (2007) defined attitude as a learned predisposition to respond to an object or class of objects in a consistently favorable or unfavorable way.

Achieving a meaningful use of technology in the field of education can be influenced by many factors. One of these factors is teachers' attitudes towards the use of technology in teaching and learning process. Research shows that the success of technology use in the educational settings largely depends on teachers attitudes toward technology use (Albirini, 2006).

James (2001) claims that there are three reasons for investing in technology, the first is to increase students ability and interest in applying authentic settings, that has been identified as learning and tasks that students should know and able to do. Secondly it acts to prepare students for success in a technology centered world of work, and lastly to prepare students to manage and use information so they can be productive lifelong learners and responsible citizens. Furthermore, integrating technologies in learning classrooms has been shown to promote teachers and students' performance and motivation.

Murphy (1995) summarizes the learning outcomes that result from the use of technology in classroom as social growth, problem solving, peer teaching, independent work, and exploration. Technologies have played a dictating role in the field of education. Researchers have shown technology integrated into mainstream classrooms support higher-level learning and thinking skills among students. The scholar stressed that the teachers efforts to get better outcomes are tied up in the attitude towards the selection of the delivering media.

Attitude assessments may be either global (e.g. attitude towards the school and the educational system) or specific (e.g. attitude toward a particular task, text, child, or curriculum). In either case, most attempts to measure teacher attitude have suffered from inadequate predictive validity, or the inability to forecast what the teacher with a particular attitude actually does in the classroom. Research studies generally have shown that correspondence between attitude and teacher performance in the classroom can be low and non-significant (Borich, 2006).

However, Riitho (2001) identifies that there are important factors which affect the use of educational radio in Africa. There is for example, the attitude towards time. One might almost say that Africans control their time whereas the Western world allows time to control them. For to them wasted time is wasted money. But Africans have a more relaxed attitude towards time. Meetings and broadcasts are not necessarily expected to be on time.

The use of attitude data for measuring teacher effectiveness, therefore, has had to rest on the assumption that attitude (e.g. positive felling about teaching) are related to their

behaviors (e.g. more organized lesson plan) that are one or more steps removed from the actual process of teaching. The measurement of teacher attitude in defining effective teaching is more indirect and less credible than is direct observation of the classroom practices that a "good" attitude is supposed to represent (Borich, 2006).

Romiszowiski (1998) identified various factors which have an influence on selection and use of media in teaching and learning. He noted that lack of media resources affects teachers' choice of a particular media, secondly accessibility of media, and teachers' attitudes towards the use of media, and lack of maintenance and repair of electronic media.

Albirini (2006) conducted a study to investigate the attitudes of teachers in Syrian high schools toward technology in education. Both quantitative and qualitative methods were employed to collect data. He found that the teachers had positive attitudes toward technology use in education.

In conclusion, the success to the radio program is highly dependent on the attitude and behavior of the classroom teachers. The classroom teacher is a vital part of any properly conceived broadcast. In fact, it is more proper to look at a broadcast as part of lessons. However, unless a teacher has had specific instruction in the technique of using radio broadcast, he will often regard the broadcast lesson a substitute for him, when he switches the radio on, he can 'switch himself off.

2.7   Related research in Ghana, India

2.7.1 Related research in Ghana

Adeniji (1997) carried out a basic study on teachers' perception of the use and effects of teaching aids in Winneba basic and secondary schools. The action research took a survey sample of teachers with several years of teaching experience of between 3 and 25 years. The aim was to get information on teachers' perception of the use and effects of learning aids in teaching. From the interviews conducted, teachers claimed that learning aids reduce their chalk and talk method. The common types of audio visual aids used were radios of portable sizes. The study recommended that devices like radio should be used by all teachers in order add the practice of technology to the training of teachers physically. His study results mainly dwelt on the use and the technological merits and convenience of the radio. This study aimed at finding out whether educational radio programmes as a reliable resource is used effectively by teachers of secondary schools and factors which influences them to use it.

2.7.2 Related research in India

Mohanty (1992) carried out a survey on radio and TV in education in Delhi, India. The survey found out that the radio programming and utilization had not yet been integrated with the teacher education curricula at various institutions and that educational technology had not yet been given its rightful place in teacher educational programmes. It recommended that this needed to be done to improve teachers, competence.

One of the pioneering research studies on radio broadcasts for schools was undertaken in India between 1954 and 1955 by Kumar. As reputed in his master's degree thesis work, the investigator conducted two surveys, one in the then state of Delhi and the other in the state of Bombay. The main methods of his study were field visits in Delhi during

listening hours and correspondence questionnaires in Bombay. The following were his major findings of his survey in Delhi, 92 out of 323 schools listened to radio broadcasts, reasons for not listening being that the syllabus was overloaded and there were many extra curricula activities. The survey of broadcasting through the questionnaire reflected that 402 out of 800 schools listened to broadcast, reasons for not listening being cited as time inconvenience, many extra-curricular activities, dull and fast presentations of radio lessons and too much time wasted in musical interludes.

Whereas Kumar's study identified the challenges of time inconvenience, many extra curriculum activities, dull presentations and too much musical interlude, this study will seek to find out how these challenges among others affect the use of radio broadcast in Molo Sub County.

2.7.3 Related research in Kenya

Odera (2007) carried out a study to bring into light the contribution of world space radio in improving the quality of teaching and learning at distance in primary schools in Kenya. (World space radio broadcasts to schools were recently introduced to supplement and improve classroom teachers' work and quality of education at distance. Radio lessons are broadcast during normal school hours by W.S.R in conjunction with the K.I.E.)

The study was carried out in primary schools in Nyando district in Nyanza province. The study adopted a survey research design, in which a semi- structured interview was used on boys, girls and mixed primary schools. Semi-structured interview was used to collect

data from principals and classroom teachers. Her study is similar to this since they both used descriptive survey and both employed the use of semi-structured interviews.

According to the findings of the study, the scope and mode of using radio in the school relies on the class teacher and heavily on the principals whose role in the exercise determines the effectiveness, efficiency and shapes the manner in which radio broadcasts are used in the school. The principal is the one responsible for providing media responsibility. If WSR are to be used effectively, the teacher's role must be spelt out clearly.

The overall findings showed that students learn from radio lessons and teachers also benefitted from well researched programmes that help improve their teaching. Many teachers reported that the programme developed new knowledge, listening skills and pronunciation of words. The study recommended that the developing countries like Kenya should invest heavily in radio technology for distance education.

Whereas Odera's study aimed at examining learning in primary schools in Nyando District, Nyanza province, this study seeks to find out the use of educational radio broadcasts in Molo Sub County.

In another research, Odera (2007) did a research to investigate on learning Kiswahili language by radio in secondary schools in Nyakach, Nyando District in Kenya. Her objectives were to find out the extent to which school radio lessons were used in teaching and learning Kiswahili language, and to determine if radio lessons help to improve teaching and learning Kiswahili language. Simple random sampling

technique was used to sample 120 Kiswahili teachers. She collected data using questionnaires and semi-structured interviews. The main findings in her research indicated that teachers valued the use of radio lessons in teaching Kiswahili language because it helps to improve spoken and written Kiswahili. It also found out that the radio is very effective in teaching and learning language at a distance.

Odera (2011) conducted yet another study with a purpose of finding out if teachers in primary schools use broadcasts radio programmes to assist them in teaching and learning the language. The study was based on a descriptive survey. The area of study was Kisumu district and saturated sampling technique was used to select a sample of participants. Data was collected by use of questionnaire for pupils and teachers, while semi-structured interview was used to collect information from principals. The main findings indicated that most teachers were not listening to the school radio broadcasts. Very few of them used radio lessons citing various problems, such as lack of resources, broadcast time tables and teachers guide notes, negative attitudes and large number of pupils in the class. Those, who listened to English radio lessons, valued them very much and noted how it has helped to improve the pupils spoken English and performance in Kenya certificate of primary education examination.

Abuli, Wellington and Odera (2013) researched on the impact of chemistry radio broadcast in secondary schools in Vihiga County, Western Kenya. Their objective was to find out the impact and factors influencing the use of school broadcasts in teaching and learning chemistry in Vihiga county secondary schools. The study used descriptive survey design. They found out that there was lack of adequate awareness

and publicity about the school's radio broadcasts. They also found out that chemistry radio broadcasts had very little impact on teaching and learning of chemistry in Vihiga county secondary schools because of poor awareness promotion structures.

Oggot & Odera (2012) evaluated factors influencing teachers' attitude towards language material selection, development and use in early childhood education programme, their study involved 68 teachers in ECDE centers in Gem District who were randomly selected. Data was collected through questionnaires. The researchers found out that teacher in Gem district held positive attitudes towards language material selection, development and use irrespective of their ages. They also observed that high and low academic qualifications influenced teachers' attitudes positively and negatively respectively with regard to language material selection, development and use. They also noted that Professional qualifications influenced positively language material selection, development and use in the Early Childhood Development and Education programme. On teachers' experience, they noted that teaching experience had an influence in language material selection, development and use in the Early Childhood Development and Education Programme.

Studies by (Eshiwani (1983), Walugere (1980), Mainje (1980),Obiero (1980), Osodo (1985), Chimerah (1982), Murphy (1980) and East African Publishing House (1970) as cited by Eshiwani(1983) on mass media and distance learning were reviewed. Out of the nine studies five were concerned with the effectiveness of instructional radio broadcasts. Eshiwani (1983) evaluated the effectiveness of the Radio Language Arts Project programmes in Kenya. The RLAP programmes consisted of 195radio lessons

covering an entire curriculum in English for Standards One, Two and Three. Results of the evaluation showed clearly that in general the performance of pupils who had participated in the RLAP was above average for Standards one to three. The Radio Language Classes performed substantially and statistically better than control school. This was true for reading and oral communication. RLAP seems to have been effective in the area of reading and speaking English in Standards One to three. The attitudes of teachers and Headmasters towards RLAP were positive.

Based on the above results, Eshiwani recommended that: Both direct radio broadcast and cassette tapes be made available for schools which will need to use the RLAP approach. In-service courses for teachers planning touse the RLAP approach be organized as soon as possible. The Kenya Institute of Education study the lessons learned from the RLAP for improving some aspects of other radio lessons produced at the Institute and vice versa. The Ministry of Education, Science and Technology initiate discussion between the Kenya Institute of Education, The Jomo Kenyatta Foundation and the School Equipment scheme to advise the Ministry on the production and distribution of support materials for radio lessons (printed materials as well as tapes). The printed materials should be produced cheaply and bound.

Osodo found that radio-history lessons were not only effective, dynamic, stimulating and educative, but they were also popular with the teachers and pupils alike. This approach was found to be a dynamic method of imparting knowledge skills and attitudes to the pupils in primary schools. Based on these findings, Osodo recommended that the taped radio-lessons should be reviewed from time to time in

order to make them current and more relevant to the syllabus. The supply of teachers notes, visual aids, etc. they should be regular. Schools with many in large stream should be supplied with at least two radio sets.

There should be a close contact between central planners and those in classroom situations -the teachers, and teachers should try to assess their pupils regularly.

Mainje and Obiero separately evaluated the effectiveness of radio lessons in the teaching of English in grades III and VI respectively in two rural districts of Kenya. Both researchers found that one of the limiting factors in making radio lessons effective was lack of training and preparedness on the part of teachers in the utilization of the radio. The other limiting factor was the non-availability or short-supply of support materials. A third factor that seems to limit the effectiveness of radio lessons is poor reception from the broadcasting stations.

Walugere (1980) in his study on the effectiveness of radio programmes in science teaching in Uganda came to the same conclusions as Osodo and Mainje. He found that radio lessons were effective in teaching science in Uganda when the programmes were properly utilized. However, he noted that in Uganda "the supporting materials are poorly distributed and are lacking in schools. In some cases radios are not enough to cater for the need of students and teachers.

Majority of teachers do not prepare lesson plans for radio lessons, and do not follow up the lessons. At the same time, pupils are not adequately prepared for the radio lessons, thus, the programmes are not efficiently utilised because few pupils can

follow without the help of the teachers. Therefore, the programme utilization is low." Walugure concludes from his findings that: For maximum utilization of the radio programme, there should be:

a. Sufficient and relevant training for both Radio and classroom teachers.

b. More and relevant support materials should be supplied to schools, these include not only the broadcast to school notes, but also other support materials or usual aids.

c. The Radio Programme should pay special attention to pupils' activities/experiments during the lesson; pupils should be encouraged to participate fully during the lesson.

2.8 Policy initiatives on ICT integration is schools

The recent government initiatives to integrate ICT into Kenya secondary schools are highlighted in the session paper no. 1 of 2005, the current policy framework for the ministry of education. The document recognizes the role of ICT in promoting economic development. It emphasizes that the government appreciates and recognizes that an ICT literate workforce is the foundation on which Kenya can acquire the status of a knowledge economy. The session paper points out that the MOE's policy on ICT is to integrate ICT education and training into education and training systems in order to prepare the learners and staff today for the economy of tomorrow and therefore enhance the nation's ICT skills. The document enumerates the government's strategy for enhancing ICT in schools as follows:

Develop a national ICT education policy strategy, work with stakeholders to ensure the implementation of the NEPAD e- school initiative, promote expanded use of ICT as a tool for effective management, research and development at all educational levels, develop a policy on the provision of adequate infrastructure at all levels of education and training by bringing out together the efforts of all stakeholders, promote public and private sector investment in ICT with the education and training sector, provide computers to primary schools, secondary schools and teachers training colleges.

The policy initiatives stipulated in the *session paper no.1 of 2005* led to the development of *the national ICT strategy for education and training in June 2006.* This strategy document was prepared by the MOE in collaboration with stakeholders from the public private, civil society and development partner sectors. It outlines how ICTs will be adopted and utilized to improve access, quality and equity in the delivery of educational services in Kenya.

The strategy plan states that its main objectives is to ensure that systematic efforts are made towards strengthening adoption and use of ICT in education with a view of achieving EFA by 2015 in tandem with the National and international commitment.

The document considers that ICT has considerable potential to support implementation of free primary education and free secondary education and addressing emerging challenges such as overcrowded classrooms, high pupil-teacher ratios particularly in densely populated and semi-arid areas, shortage of teachers on certain subjects and relatively high cost of learning and teaching materials.

The *national ICT strategy* document outlines the priority of ICT in education as follows: Establishment of ICT policy framework, provision of digital equipment, connectivity and network infrastructure, technical support, harnessing emerging technologies, digital content development, capacity building, partnership and resource mobilization, research and development, legal regulatory framework, monitoring and evaluation.

Each of these areas are reviewed in the document to determine the challenges, appropriate responses and expected outcomes.

2.10 National ICT in education policy

Perhaps the greatest challenge in the process of ICT integration in Kenya has been the lack of a comprehensive national ICT policy in education. There have been a number of attempts over the past 15 years to develop an ICT integrated policy and the culmination of the efforts has been the development of the National ICT strategy for education and training in June 2006. This current educational policy on ICT is embedded in the three documents namely: E-Government strategy, National ICT policy and Session paper no.1 of 2005

Makau (1990) underscores the necessity to have a sound ICT policy in order to ensure success of ICT integration. He says that it is necessary for the whole school staff to be aware of the ICT p potential in the curriculum management, school administration, information exchange within the school and with partners of the school, and for information retrieval, both for learners and teacher's needs. It is the responsibility of the principal to organize this information to be available, as a first step.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction to the chapter

This chapter describes the area of study, methodology, the research design, the study population, the sampling procedures, the research instruments, the validity and reliability of the research instruments. The procedure of data collection and analysis and ethical issues are also presented.

3.1 Location of Study

The study was carried out in Molo Sub County, which was created from the former Nakuru district found in Nakuru County. Molo Sub County borders the following Sub Counties: Kamara to the West, Njoro to the North, Rongai to the East and Olenguruone to the South.

Molo Sub County was chosen because it is a semi-urban Sub County which would present the both conditions of rural schools as well as urban schools. The research conducted could then be used to generalize the situation of the whole country. The researcher agrees with KIE (2005) that it is such rural areas that can benefit greatly from school radio broadcasts as the schools here are under privileged in many aspects such as limited range of contacts, poor in creative and intellectual resources, under financed as the community is poor resulting in few learning materials, un uniform and varying back of the children level of education, and generally a traditional bound and static rural community life.

Molo Sub County has 26 secondary schools out of which 4 are county, 14 are Sub County, and 8 private schools. The county schools have more than two streams, with a relative student's population of between 350-850 students each. The Sub County schools are either single or double streamed with students enrolment of between 350-800 students each, most private schools are single and double streamed with students' enrolment of between 300-450 students each.

Nakuru County has been performing relatively well in the Kenya Certificate of Primary Education (KCPE) but the case has not been the same when it comes to Kenya Certificate of Secondary Education (KCSE). Studies therefore should be conducted to determine the drop in the performances in the secondary schools. This study discussed how technology has been embraced in these secondary schools and more specifically the radio broadcasts.

3.2 The Research Design

A research design is an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the purpose with economy and procedure. It is the conceptual structure within which research is conducted; it constitutes the blue print for data collection, measurement and analysis of data.

The study used descriptive survey research design. Descriptive research describes the state of affairs as it exists. The researcher reports the findings (Kombo & Tromps, 2006). Kerlinger (1996) points out that descriptive studies are not only restricted to fact findings, but may often result in the formation of important principles of knowledge and solution to significant problem.Descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho, 2003). It can be used when collecting peoples' attitudes, opinions, habits or any variety of

educational or social issues (Orodho & Kombo, 2002).When using a descriptive survey method the researcher should ensure to:

Construct questions that will solicit the desired information

    i.   Identify the individuals that will be surveyed

   ii.   Identify the means by which the survey will be conducted

  iii.   Summarize the data in a way that provides the designed descriptive information.

By using qualitative research methods, researchers are able to collect data and explain phenomena more deeply and exhaustively (Mugenda & Mugenda, 1999). According to Creswel (2003), qualitative research takes place in the natural setting. The researcher goes to the site to conduct research.

This study assessed the use of educational radio programmes prepared by the KICD and aired through the national broadcaster K.B.C. Information was collected through the use of questionnaires and interviews from the selected study sample after which data was analyzed using appropriate data analysis method.

3.3 Study Population

A population is a group of individuals from which the study sample will be drawn. The research population for this study comprised of 432 teachers and 26 principals drawn from the 26 schools in Molo Sub County.

The teachers were selected as respondents of the study since their role is very important in the effective utilization of the radio programmes. They are charged with the tasks of classroom instruction and therefore their attitude defines which instructional materials they can use to help accelerate the learning process. They can encourage and motivate learners to learn effectively using radio programmes to meet their needs.

The principals on the other hand were selected since they supervise the teaching activities by ensuring that the schemes of work and the lessons plans are prepared at the right time. They also make requisitions for the required instructional materials and ensure that such materials are put into proper use. Therefore, their contributions played a key role on whether to use any kind of instructional aid and the effectiveness of such aid.

The interest of the study was on the use of educational radio broadcasts in secondary schools in Molo Sub County. All categories of schools in the sub county were considered with the assumption that they could afford all what it takes to facilitate the educational radio broadcasts.

3.4 Sampling Procedures

The researcher used stratified random sampling to ensure that all the categories of schools i.e. County, Sub County and private schools were represented in the sample. A list of the 26 secondary schools was obtained from the Sub County Education Office to act as sampling frame. Using this list, a study sample of nine schools were selected which represented 34% of the study population out of the nine schools, two were county, five were sub county two were private schools; they were randomly selected from school clusters developed as per the category.

From the study population, 202 teachers were selected from the sampled schools using simple random sampling procedure. In determining this sample size, the researcher was guided by Krecjie and Morgan (1970). These scholars provided a table which shows the relationship between the sample size and the total population. Guided by the above mentioned table, the researcher found out that with the total population of 432 teachers, a sample of 202 was adequate to serve as respondents of the study.

In every sampled school, the principal was purposively selected for the purpose of interview. The principals were important in this research since they are tasked with the role of supervising the teaching activities by ensuring the provision of required instructional materials is done on time and is put on proper use. They would be expected vital information which helped in the research especially concerning the attitude of teachers towards the Educational Radio Broadcasts.

3.5 Research instruments

Research instruments are the data collection methods that the researcher would use to carry out the study. The researcher combined interview schedules, questionnaires and structured observation. All these data collection instruments, used together, ensured that enormous data with in depth details was obtained, each instrument enhancing the others validity and reliability. Robinson (1993) observed that, since every method has limitations, it is good to use more than one method to achieve some accuracy. Data collection methods in qualitative inquiry should be interactive and humanistic. The methods adopted in this study were interactive.

3.6 Interview schedules

An interview schedule is the guide an interviewer uses when conducting an interview. It has two components: a set of questions designed to be asked exactly as worded, and instructions to the interviewer about how to proceed through the questions. (Michael, Allan& Tim, 2014).The semi-structured face to face interviews were conducted to all the principals of the sampled schools. The use of semi-structured interviews gave room for flexibility. The interview was expected to give an in depth data from head of schools on

the position of the use of radio broadcasts in their secondary schools. It also enabled the researcher to clarify and elaborate his enquiries hence get more and clearer responses.

3.7 Questionnaires

A questionnaire is a research instrument consisting of a list of questions that a number of people are asked to respond to so that information can be collected from them about something (Michael, Allan & Tim, 2014). The scholars noted the advantage of this tool since it can collect responses from a big population within a considerable short time. However, it has the limitations of the respondents failing to adequately understand some information; the researcher may also impose meaning when developing the questionnaire.

Self-completed questionnaires were distributed to subject teachers of every sampled school. They were handed to the teachers personally by the researcher after requesting them. Questionnaire method was used on teachers because it was easier to get responses from them in a short period bearing in mind their large numbers. Interviews would be time consuming, given that the principals would be interviewed. Questionnaires gave divergent views, ideas and opinions from the teachers. It also gave them adequate time to give well thought responses.

3.8 Structured Observation

Structured observations are systematic observations that generate numerical data which is entered into an observation schedule. The data obtained can be used to reveal patterns and generate frequencies Michael, Allan & Tim (2014). The researcher went in the study schools and observed the kind of facilities that were available to support the use of ERBs. The researcher took notes of the kind of facilities available in the schools that were

necessary for the use of radio programmes, records of work covered and schemes of work were also assessed to establish whether the teachers created time for radio programmes in their respective teaching subjects. He also observed the preference of the use of other media in teaching as compared to the use of ERBs.

3.9 Reliability and Validity of the Research Instruments

3.9.1Validity

Validity is used to determine whether research measures what it intended to measure and to approximate the truthfulness of the results, Kvale,(1996).The researcher analyzed the content of the questionnaires and interview schedules to ensure that the items were relevant to the .research objectives. The lecturers and supervisors in the Department of Curriculum Instruction and Educational Media in Moi University were requested to analyze the research instrument and advice accordingly. The content of the instruments were validated which ensured that they responded to the objectives of this study. Pilot testing was carried out to reduce the ambiguity of questions, usage of language and appropriateness of question items.

3.9.2 Reliability

An instrument that consistently gives the same result every time it has been used is considered to be reliable (Kvale, 1996). To ensure reliability, the researcher carried out a pilot study in the neighbouring Kamara sub county to establish whether the instruments were clear and whether they generate relevant, adequate and desired information. From the outcome of the pilot study, relevant and necessary changes and adjustment were done on the tools.

The questionnaire was first administered to 5 teachers of the two pilot schools; the same was repeated after two weeks. The researcher then calculated the correlation coefficient of the instrument using the Pearson correlation technique and found it to be 0.68. According to Best(2005), if the coefficient of reliability is greater than 0.60 then the instrument is reliable. The validated results were then used in the study.

3.10 Ethical considerations

Before carrying out the study, the researcher ensured that the dignity and wellbeing of the teachers and principals who were respondents were considered and protected. The research data was also kept and remained confidential throughout the study period. The researcher also obtained the consent of the teachers and principals to participate in the study after briefing them on his intended use of the findings.

3.11Dataanalysis

This is the process of bringing order, structure and meaning to the mass of collected data (Mugenda & Mugenda 1999). In qualitative study, data collection and analysis should go hand in hand. After data was collected, the interview schedules were transcribed and discussed qualitatively through analysis of emergent themes. Qualitative research is interpretive. Data was first organized and processed by identifying and correcting any possible errors. It was then coded and analysed using descriptive statistics. The quantitative data analysis was done using SPSS and interpretation involved the use of percentages and means. Some of the percentages and means were used to draw charts giving pictorial representations of the findings. Overall, the findings were summarized according to the objectives of the study and theoretical framework.

CHAPTER FOUR

DATA PRESENTATION INTERPRETATION AND DISCUSSION

4.0 Introduction

This chapter gives a detailed presentation and discussion of data collected. This will be preceded by a brief description of the samples and methods of data collection used. Questionnaires were the main instruments used to collect data from the teachers; semi-structured interviews and observation were also used to secure data for the study.

4.1 Background information

Before looking into the main areas of the study, it was of crucial importance to understand the demographic characteristics of the respondents as this will inform the discussion of the findings. The background information was analysed by looking at various variables which included: category of school, gender, educational background and number of years in service as presented in Table 4.1

Table 4.1 Background Information of Respondents

No	DESCRIPTION OF ITEMS	RESPONSES	No.	%
1	Category of school	County	2	4
		Sub County	5	62
		Private	2	25
		Total	**9**	**100**
	Principals gender	Male	6	67
		female	3	33
3	Teachers gender	Male	137	68
		Female	65	32
		Total	**202**	**100**
4	Educational background	Masters	9	4.5
		Bed	74	36.4
		Other degrees	27	13.6
		Diploma	27	13.6
		PGDE	46	22.7
		Other certificates	19	9.1
		Total	**202**	**100**
5	Number of years in service	0-5	69	34.1
		5-10	55	27.3
		Over 10 years	78	38.6
		Total	**202**	**100**

From Table 4.1, it is evident that majority (62%) of the sample schools were district schools. This is occasioned by the fact that these schools form the majority of the schools in Molo Sub County as well as in the whole country. The county schools were represented by 4% and 25% from private schools. In addition, it was established that 68% of the respondents were male compared to 32% female respondents.

It was also established that majority (36.4%) of the teachers had a bachelor of education degree and 22.7% had a post graduate diploma in education. It was also established that 4.5% had gone further and attained masters degrees in the field of education. Majority of those who had other degrees, diplomas and certificates were either working in the private schools which are not very strict on employing professional teachers or those that are employed by Board of Management(BOM) in public schools. The study therefore obtained data from all categories of teachers in the teaching fraternity which is represented in figure 4.1.

Figure 4.1 Education backgrounds of respondents

It was also established that 38.6% of the respondents had a working experience of over 10 years, 27.3% had worked between 5-10 years while 34.1% had a working experience of less than five years.

4.2 Availability of instructional materials

The first objective of this study sought to establish whether there exist necessary instructional and support materials which could support the use of ERBs in schools. It is worth noting that the choice to use ERBs would greatly depend on the availability of instructional materials at the disposal of the teachers and as Bett (2008) stresses,no

curriculum can be effectively implemented in absence of adequate teaching and learning resources. In view of this, the researcher through the questionnaire asked the respondents whether the schools had a working school radio; whether the radios were in good working conditions and whether the schools receive clear KBC signals. He also made observation of the above guided by the observation schedule. Their responses were presented in form of a Table 4.2

Table 4.2 Availability of Radio in the School

Position of school radio	Responses					
	Yes		No		Total	
	F	%	F	%	F	%
Does the school have a radio	119	59	83	41	202	100
Is the radio is in good working condition	89	75	30	25	119	100
Does the school receive clear KBC signal	79	66	40	34	119	100

The research found out that majority of the schools (59%) had a school radio which could be used for ERBs, only 41% of the schools did not have a school radio. The radio is one of the basic requirements that a teacher thinks of when he wants to use ERBs in his lessons. The fact that 41% of the schools did not have radios was in a way a bottleneck in the efforts of using this technology for instructions in the classrooms. Republic of Kenya(1988) stresses that '„, the availability of resources implies that the teachers' work is made easier for he can easily select what he requires from the available materials.'

It was also found that majority of the radios available (75%) were in good working condition and only 25% were not in a condition to be used for the ERBs. The researcher

also found out that 66% of the schools which had a radio received clear KBC signals while 34% of the schools did not have clear signals.

The researcher also sought to know how the schools which had radios used them in their schools. The researcher used in a questionnaire item responded by the teachers to get the following responses as presented in Table 4.3

Table 4.3 How the Teachers Use School Radios

Teachers' use of the radio	F	%
Entertainment	51	43.2
Listen to news	19	15.9
Listen to educational programmes	16	13.6
Never uses	19	15.9
Other uses	14	11.4
Total	**119**	**100**

Form Table 4.3, only 13.6% of the teachers admitted to using the school radio for academic purposes, however, majority of the radios in schools (43.2%) are used for entertainment purposes. 15.9% of the respondents used the radio to listen to news. The research also found out that 15.9% of the respondents never use the school radio in any way while 11.4% used the radio for other purposes which included listening to their favourite vernacular stations.

These findings imply that the use of ERBs is not properly implemented in the secondary schools. It is not encouraging to find that 41% of the schools do not have a radio. Some radios in the schools were not working and the principals did not bother to repair them. This may be due to the fact that they were not used in the purpose that they were bought for. This was not surprising given that 11.4% of the teachers never used the radio in any way and had nothing to comment on them.

This study agreed with Kafu (1976) who found out that some expensive items of equipments are available in some schools but remain most of the time locked up in stores

or cupboard. He further stresses that there is need to increase the use of available resources of teaching before more fiscal investments are made.

Availability of other support materials

The radio programmes cannot be used without the supplement of other teaching aids. The teacher needs to make prior arrangement with the full knowledge of what he wants to achieve from the broadcast. Some of the requirements he needs to arrange include the catalogue which shows what other aids should be used to complement the lesson and the role of each participants of the broadcast, broadcast timetable, convenient classrooms and adequate source of power.

In getting responses to this question, a questionnaire item was presented to the teachers requiring them to respond. The principals were also asked to respond in the interview schedule which materials they had provided to support the use of ERBs. The researcher also observed and came to terms with actual facts in the schools. Their respondents were illustrated in Table 4.4.

Table 4.4 Availability of Other Support Materials

Responses

Availability of support materials

	Yes		**No**		**Total**	
	F	%	F	%	F	%
a) KIE broadcast catalogue	0	0	202	100	202	100
b) 2012 broadcast timetable	20	0.9%	80	90.1	202	100
c) Convenient classrooms for radio lessons	133	65.9	69	34.1	202	100
d) Adequate source of power	80	90.9	18	9.1	202	100

From the findings in Table 4.4, it is surprising that no teacher from Molo Sub County received the broadcast catalogue in the year 2012. It is also noted that only 0.9% received the KIE timetable in that year, however, 65.9 % concurred that there are convenient classrooms where the radio lessons could take place and 81.8% agreed that there is adequate power which could be used to run the radio.

The teachers noted that they are never supplied with learning materials that could motivate them to use radio broadcasts in their lessons. Most teachers agreed that if they are provided with working radios which are used for the purpose of radio lessons, they could incorporate the broadcasts in their lessons, they noted that in schools where the radios exist, they are mostly used for other purposes like entertainment and this makes it hard for a teacher to either listen to the broadcast or avail the radio for the learners in the class.

Analysis of the above information reveals that almost half of the schools in the district lack radio sets for listening to the schools broadcasts despite the high availability of electricity power, generators, solar panels or dry cells as sources of power in the schools. Clearly, this hampered the extensive use of radio to teach in secondary schools in the district. In addition, due to lack of support materials such as timetables, radio sets, teachers guide notes, students' pamphlets and visual aids it was hard for teachers to plan for the radio lessons in advance, be able to conduct pre-broadcast, during broadcast and after broadcast activities. Abagi (1993) stated that curriculum developers point out that no curriculum can be effectively implemented in the absence of adequate teaching-learning resources. Consequently, resources must be made available.

The principals were asked which steps they had undertaken to implement the use of the radio in their schools. This question was asked since it is the principals who were supposed to implement national educational policies and prepare teachers and students for such changes in the curriculum innovation. In order to implement national policies, the principals are expected to formulate school policies and provide for their implementations.

The data obtained was analysed and showed that the principals had not taken serious measures. Some said that the teachers have access to the school radio which they could use if they so wish. Others stated that they had delegated the office of the academics with the mandate of advising them on which media the teachers would want to use. The principals affirmed that if the teachers requested for materials to use in the radio lessons, they would avail them.

From their responses, the principals distanced themselves from their responsibilities of supporting and encouraging the teachers on the use of the radios. They did not perform their supervisory role to ensure that the school resources which include the radio were properly used to enhance teaching.

In view of this, there is a serious shortage of basic support materials for the use of school broadcasts, these contributed to the negative influence on the choice to use these broadcasts to supplement the teaching and learning process.

4.3 Teachers' Level of awareness on the use of ERBs

The researcher sought to know the level of awareness of the teachers and the principals on the live ERBs prepared by KICD and aired through KBC. The researcher understood that awareness was an important variable since only the teachers who have an understanding of the existence of live broadcasts could make use of them in their classrooms.

The researcher posed a question to the teacher respondents on whether they were aware of the KICD radio broadcasts to school. Out of the 202 teachers who responded to the questionnaire, only 91 admitted that they were aware while 111 claimed that they were not aware that the broadcasts still exist. Their responses were represented in Figure 4.2

Figure 4.2: Teachers' Level of Awareness of ERBs

How the Respondents Got Aware of ERBs.

The researcher went further and asked the teacher respondents who were aware of the live broadcasts how they came to know of their existence. This question sought to know the extent to which KICD had conducted the publicity and awareness of their

programmes. The tool which was used in getting responses to this question was a questionnaire item which was responded to by the teachers and an interview question posed to the principals. From the findings, 40.9% of those that were aware of the existence of the broadcasts heard about them through the radio as they were scanning through the stations, 11.4% read posters and pamphlets while31.8% heard from their fellow teachers, the other 15.9% got aware of the broadcast through other ways. Their responses were represented in Figure 4.3.

Figure 4.3: How Respondents Got Aware of ERBS

The researcher went further and asked the respondents who were aware of the broadcasts whether they listen to them, 13.6% listened to the programmes always, 18.2% listened to them sometimes while 56.8% rarely listen to them, and 11.4% of the respondents do not listen to the programmes although they are aware that they exist.

When asked whether they are aware of other broadcasts aired by other radio stations, 40% of the respondents claimed they were aware while 60% were not aware. This study supported Abuli et al (2013) who did their research on the Impact of Chemistry Radio Broadcast in Secondary schools in Vihiga County and found out that there was lack of adequate awareness and publicity about the schools radio broadcasts. This problem hinders the extensive utilization of the programs.

Majority of other stations which air school programmes were mainly vernacular radio stations which had children programmes during the weekends, the respondents noted that those programmes were meant for entertainment and were not necessarily educative,

however, they noted that QFm had a programme on Saturday morning 'kamusi ya changamuka' which was beneficial to Kiswahili learners

Majority of the teachers who listened to the broadcasts were language teachers. The researcher however noted that most of the principals, 5out of 9 were aware of the KICD radio broadcasts. 30% of them claimed that they had used them in their lessons. The principals had an advantageous opportunity of exposure to the broadcasts compared to the teachers since they were priviledged to attend several workshops and seminars.

4.4 Competence on the Use of ERBs

The question of how skilled the teachers were was also of interest to the researcher, a skilled teacher is always ready and able to use the resources at his disposal to spice up his lesson. The researcher sought to know whether the respondents had undertaken any training on the utilization of ERBs. This was done through posing a question concerning the same in the questionnaire.

Out of the respondents,65% admitted that they were had undergone training on how to use the ERBs in their lessons, 35% responded that they have not been trained on their use as presented in figure 4.4

Figure 4.4: Teachers Training on the Use of ERBs

From the responses, 56.6% of the respondents had their training while they were studying at their universities and teachers training colleges, the in service training had benefited 22.7% while media seminars and workshops had benefited 9.1% of the respondents. The rest 11.4% had undergone other training like SMASSE and were taught on how to make use of educational broadcasts. This was presented in figure 4.5

Figure 4.5: Place of Training

Training is very instrumental since it elicits the urge of the teachers to learn more and employ the knowledge they have learned in actual use. A trained and experienced teacher has a bank of knowledge which he can withdraw and use it for the benefit of enriching his lessons. Gage (1999) asserts that 'conceived professional qualification of a modern teacher as that of having to develop and utilize 'the science of the art of teaching.' The trained teachers therefore can creatively use unique environments where learning can take place.

Although 65% of the teachers responded that they took training on educational radio utilization, they noted that the training was not enough. In the comment section of the questionnaires, most teachers underlined that they only had one course 'instructional media' that they had learned in the use of educational radios while in colleges. In some teachers training universities and colleges, this course by itself is not sufficient for educational radio utilization as the instructions are not supported by adequate practical activities.

The finding supports Mohanty (1992) who conducted survey of radio and television use in Indian education system, he found out that radio programming and utilization had not yet been integrated with teacher education curricula and that education technology had not yet been given its rightful place in teacher education programme.

The teachers also raised issues of lack of frequent seminars and workshops which could encourage them on the use of radio programmes, they found out that the in-service training does not target the majority of the teachers; they noted that the principals always

selected specific teachers who were close to them to attend the training on behalf of the rest.

The researcher wanted to know how skilled the teachers were on the specific items of preparation and employment of a radio lesson in class. A question was posed and was presented on a three tier scale with three variables as follows: TS- Totally Skilled, SS-Somehow Skilled and NS-Not Skilled. This was discussed in Table 4.5

Table 4.5: Teachers Competence on Aspects of ERBs

	TS		SS		NS	
Skills possessed by the teachers						
	F	%	F	%	F	%
a) Making schemes of work incorporating ERBs	50	25	110	54.5	44	20.5
b) Making lesson plans incorporating radio broadcasts	55	27.3	115	56.8	32	15.9
c) Conducting a radio lesson class	50	25	115	56.8	37	18.2
d) Evaluating learners after a radio lesson class	46	22.7	48	54.5	110	22.7
e) Making audio tapes using the school resources	32	15.9	32	15.9	138	68.2

From the Table 4.5, it is evident that majority of the teachers have an average knowledge of incorporating radio technology in their everyday teaching activities. A bigger percentage (68.2%) could not make their own audio tapes for use in the classrooms. The choice to use radio broadcasts is highly dependent on the training of the teachers, the

teachers heavily emphasized that KICD needed to provide training through symposia, workshops and seminars which would enable them to properly utilize the educational radio programs in their lessons.

This average training was considered as a de-motivating factor in the use of radio broadcasts and as Abenga (2005) puts it, effective technology and student access to knowledge is determined by the pedagogical knowledge and skills of the teacher. He noted that without strong teacher knowledge of ways to use technology, a lot of precious time could be wasted.

4.5 Teachers' attitude

The fifth objective of this study was to find out the attitude of the teachers on the use of ERBs. The researcher wanted to find out if this influenced them on the choice to use educational broadcasts in their lessons. It is important to note that the teacher will only be interested to use a technology which appeals to him. Albirini (2006) noted that the success of technology use in education settings largely depends on the teachers' attitude towards the technology.

In determining this, the researcher prepared a questionnaire with several items in regards to attitude which the teachers were required to respond. Since the questionnaires consisted of variables on a four point scale, the following scale value was assigned to each of the four responses as follows: Agree(A)-4, Tend to Agree(TA)-3, Tend to Disagree(TD)-2, Disagree(D)-1.The findings were analysed using SPSS and tabulated in Table 4.6.

Table 4.6: Teachers' attitude on the use of ERBs

		A	TA	TD	D	MEAN	SD
a) Educational radio broadcasts are effective instructional media in improving quality of teaching.	F	101	55	14	32	3.1	0.6
b)	%	50.0	27.3	6.8	15.9		
c) The school timetable fits well with the schedule of radio broadcasts in K.B.C.	F	41	23	55	83	1.8	-0.7
d)	%	20.4	11.4	27.3	40.9		
e) The time allocated for radio broadcast lessons is adequate.	F	37	18	41	106	1.9	-0.6
f)	%	18.2	9.1	20.4	52.3		
g) Educational radio broadcast have relevant educational content	F	46	110	18	27	2.9	0.4
h)	%	22.7	54.5	9.1	13.6		
i) The structure of the syllabus encourages the use of ERBS.	F	41	23	55	83	2.1	-0.4
j)	%	20.4	11.4	27.3	40.9		
k) ERB lessons are cumbersome to prepare	F	37	37	46	83	2.1	-0.4
l)	%	18.2	18.2	22.7	40.9		
m) ERBs encourages the learners to participate in the lesson	F	55	83	18	46	2.7	0.2
n)	%	27.3	40.9	9.1	22.7		
o) The role of a teacher in class can be replaced by use of ERBs.	F	18	0	42	142	1.1	-1.4
p)	%	9.1	0%	20.5	70.4		
q) It is easier to prepare other teaching aids than to prepare radiobroadcast lesson.	F	101	65	18	23	3.3	0.8
r)	%	50	31.8	9.1	11.4		
s) ERBs are outdated	F	27	14	46	115	1.8	

							-0.7
technologies and are not relevant in the current world.							
t)	%	13.6	6.8	22.7	56.8		
u) The school encourages performance by mean score and radio lesson cannot help me achieve that.	F	110	60	9	23	3.3	0.8
v)	%	54.5	29.5	4.5	11.4		

4.5.1 Educational radio broadcasts are effective instructional media

This question was asked in order to understand whether the teachers could rely on the broadcasts in their lessons. Their response had a mean of 3.1 and SD of 0.6 which indicated that they tended to agree that the broadcasts are effective instructional media. Odera (2007) in her research in learning Kiswahili by radio lessons in Nyando district affirms that the teachers value the use of radio lessons in teaching because it improves the quality of spoken and written language.

The views of the teachers were supported by most of the principals (57%) who in the interview reported that radio programmes are useful in teaching students. They noted that it breaks the monotony of the usual classes where the learners mostly depend on the teachers. One of the principals said " student are always anxious when they see the teacher carrying the radio to their classes, I usually see them excited and I assume that they also learn from the radio lessons."

Another principal commented; "the programmes have been helpful to me because I do not have enough teachers. Some teachers use the radio programmes when they do not have time to prepare for their lessons since they use those which are already prepared by the radio programmes." The research's finding agreed with KIE (2014) who observed that a radio is a cost effective way of providing education in developing countries where

finances are scarce. Students and teacher ratio can be raised without necessarily increasing teachers' pay pack.

The findings were also in agreement with Odera (2007) who in her research found out that students learned from the radio lessons and teachers also benefitted from well researched programmes that help improve their teachings.

4.5.2 The school timetable fits well within the schedule of KICD radio broadcasts

Owing to the fact that the KICD plays the broadcast throughout the school days, the study wanted to know if the schools timetables are aligned to be in consistence with the broadcast timetable. The respondents scored a mean of 1.8 which is a SD of -0.7.this shows that they disagreed that the timetable fitted well with the live broadcasts. The researcher observed that most schools commenced their lessons at 8:15AM and closed the day lessons at 4:00PM while the broadcast timetable runs from 8:30AM up to 4:50pm. It was consequently not possible to use the normal lessons to use the broadcasts since they cut across the lessons and other school programmes especially those which are aired after 4PM. An interested teacher would usually borrow lessons from fellow teachers in order to catch up with the live broadcast which could not be possible in all cases.

4.5.3 The time allocated broadcast is adequate

Radio broadcasts are usually allocated twenty minutes on air after which the presenters leave the exercise for the learners before they go off air. It was observed that the teacher required more time in the pre-broadcast stage to prepare the learners for the lesson and ensure that the programme will run without interruptions. Their responses got a mean of 1.9 and a SD of -0.6 which shows that they disagreed.

4.5.4 Educational radio broadcast have relevant educational content

The question of relevance of the materials broadcasted by KICD was of concern to the researcher. The question got a mean of 2.9 from the responses of the teachers. This meant that they tended to agree that the content was relevant. ERBs are prepared by a team of experts in various fields and therefore there is no doubt that the quality of the broadcast is well researched and relevant to the curriculum.

4.5.5 Educational radio broadcasts are cumbersome to prepare

Most of the teachers 40.9% and 22.7% disagreed and totally disagreed respectively that it is a cumbersome work to prepare for radio broadcast lessons, on the other hand 18.5% and 18.5% agreed and totally agreed respectively. It was found that if the teachers are supplied with resources, it would be very easy for them to prepare for the broadcasts.

4.5.6 ERB encourages learners to participate in the lesson

This question sought to know if the use of ERBs interfered with the normal students' participation in the classroom. For every media the teacher uses in the class, there should be considerations on whether it will encourage the learners to interact with it in order to obtain maximum advantage from it. If learners cannot participate through question and answers or appealing to their senses, it may not be of any use in the class.

Fox (2004) found out that technology in education has the potential of opening the classroom for more communication opportunities thereby enhancing teacher-student and student-student discussions. This view is also echoed by Means and Olson, as cited in Charr-Chellan and Dier (2000) who states that technology promotes collaborative learning.

This research agreed with the above authors since with a mean of 2.7 and a SD of 0.2 the respondents tended to agree with the proposition.

4.5.7 The role of a teacher in class can be replaced by the use of ERBs

Some teachers have a notion that technologies can be used to replace their role in the classrooms and fear that they may lose their jobs, this was however not the case with their perception of ERBs in the schools. With a mean of 1.1 and SD of -1.4, the teachers disagreed that they could be replaced by radios. The research supported Noel (1991) who stresses that what technology can teach well and what human can teach well are sometimes quite different things, Human resources are needed to design, purchase, implement, develop, maintain, administer, evaluate, monitor, support and (in some cases) compensate for the technology resource.

4.5.8 It is easier to prepare other teaching aids than to prepare for a radio broadcast lesson

50.0% and 31.8% agreed and totally agreed respectively to this question, this maybe occasioned by the facts already identified by this research that there are few resources to support the use of radio in the class; therefore many teachers may shy away from using it. Other teaching aids that the teachers use include realia and print media.

4.5.9 ERBs are outdated technologies and are not relevant in the current world

Technologies are evolving at a faster rate and there is emergent of more advanced educational media including the audio visual technologies and recently the emergence of computer assisted media. This question sought to know whether the teacher feels that the radios are still relevant in the current technological advanced era. The research found out that the teachers disagreed with this question with a mean of 1.8 and SD of -0.7,

The findings supported the views of Witich and Schiller (1962) who observed that some educators thought that the radio would be entirely submerged under the waves of motion pictures, a phenomenon which has not happened.

4.5.10 The school encourages performance by mean score and radio lessons cannot help to achieve that

It is believed that the competition for academic performance in our Kenyan schools is more emphasized than the holistic development of the learners; the teachers are therefore quick to choose other media that are likely to help them attain quick results using less involving ways in what can be seen as rote learning. That could be the reason why print media such as revision papers are widely used for revision of exams in order to get quick academic achievements.

The radio broadcasts are planned and timetabled quite in advance and cannot be suitable for schools which are rushing against time to get quick results and improve their mean score. This research supported this notion with a mean of 3.3 which implies that they agreed they are more pressed to achieve better examination results using the cheapest means.

4.6 School policy on ICT

Out of the 9 schools in the study sample, only one school had a school policy encouraging teachers to use radio broadcasts in their lessons and actually had their broadcast timetable incorporated in the school timetable. The teachers cited lack of a clear school policy on the use of educational media as a factor that led them not to consider using radio as an optional media.

Furthermore, none of the teachers in the study sample was incorporating the radio programmes in their lessons plans. The teachers gave various reasons for not planning for the use of radio in their lessons with most of them (53%) citing lack of a school policy on radio use. While some of the teachers (48%) thought that radio lessons are not useful in teaching of the subject to students, giving reasons such as:

1) The programmes interfere with the school timetable;

2) The radio lessons should be incorporated in the syllabus

3) That radio programmes are not good for students because they cannot easily visualize the concepts being taught, and the students' questions cannot be answered immediately.

These comments actually indicate that some of the teachers lack knowledge about the usefulness of instructional radio broadcasts and how to use them in their lessons.

The teachers noted that the provision of support materials could be very instrumental in encouraging them to use the ERBs; one of them said, "I do not even have the timetable, I don't know when my lesson will be broadcast, how you expect me to use the radio?" They noted that the principals too don't put emphasis on provision of the materials.

The principals were asked if their schools have a policy on the use of educational media. The findings proved that no school had formulated a policy and so there was no written policy document which bound the teacher on the use of ERBs. This made their usage to be unmonitored and unrealistic. Although there were no written policies, the principals had an idea on what would be included in the written policy document

The researcher asked the principals to give reasons why they did not have a policy in the use of ERBs. In response, one principal said "we give the teachers the autonomy to choose the media which will be appealing to them, if a teacher in his own volition chooses to use a radio, he can forward to me what he needs me to assist him facilitate that and if the school is in a position, I would gladly facilitate." The principals agreed that although the use of the radio in the school was minimal, there was a need to come up with a policy which will guide its implementation in the schools.

Both the teachers and principals appealed to the KICD to be more vibrant in giving publicity to their programmes. It could be prudent if they organized and invited teachers for seminars and workshops through the Sub county Education officers.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter gives a summary of the findings and the conclusion from the study, the researcher also gives the recommendations and suggestions for further research on areas that this research could not fill.

5.1 SUMMARY OF FINDINGS

Kenya is fortunate enough to have a well-established Educational Media Services which broadcasts educational contents for schools throughout each day of the school. The broadcasts are aired every week day through the national broadcaster KBC.

The study looked at various aspects concerning the use of educational broadcasts in secondary schools in Molo Sub County. They were the availability of support materials, level of awareness, level of competence and how the principals influence the use of educational radios in schools. Other factors which came up in the study were also considered by the researcher.

The research found out that availability of support materials was a great challenge in the utilization of ERBs. The teachers were not supplied with enough radios for use. It found out that one radio in a school with more than one stream is not adequate to serve the whole school. The fact that 41% of the schools did not have a radio at all was a clear indication that ERBs have a long way to go before they are implemented in the schools. It

was also identified that other support materials such as broadcast catalogue and timetables were missing in the schools. However, 90%of the schools had a reliable source of power such as electricity, solar panels, generators or dry cells.

The reception of KBC signals also posed a challenge as teachers in some remote schools were forced to struggle with the radio antennae in order to get clear KBC signal reception. In some schools, the reception was significantly poor. The quality of the radio purchased for schools also played a great role in determining the reception of KBC signal. All these factors influenced the teachers negatively on their choice to use radio broadcasts in their lessons.

In addition, the research also found out that KICD failed in its role of ensuring that the support materials including broadcast catalogues and timetables are availed to schools on time. None of the schools received the catalogues and it is only 0.9% of the schools that had a broadcast timetable. This proved that teachers could not prepare for the lessons in advance since they did not know what is required of them.

The research also found out that the training the teachers had undergone was not sufficient since most teachers attended the initial training on the use of radio in their teacher training colleges and universities. Very few of them attended further training thereafter. Sensitization was poorly conducted by the KICD. The level of awareness was also a setback in the use of ERBs, 53% of the respondents were not aware that the broadcast still exist and therefore they have never bothered to use them.

However, the teachers still believed that the radio is a very important educational technology in education since it is affordable, it is easy to use and can provoke enthusiasm in class. They observed that the emergence of other advanced technologies

such as visual, audio visual and computer assisted learning cannot replace the importance of the radio.

The principals noted that lack of a clear national policy on the use of educational media has hindered them from compelling the teachers to use them. They therefore left the mandate to use the radio at the discretion of the subject teachers. The principals also failed to formulate policies which could govern the use of educational media in their schools.

5.2 Conclusion

In conclusion, the radio is one of the oldest technologies in education which has attracted studies from scholars all over the world. In Kenya it has been in use since 1963 after the independence. It has been preferred against other educational media. The innovation of dissemination theory highlighted six factors that should be put in place before adopting a technology; these factors are importance of the technology, observation of its features, complexity, comparative advantage, trial and the cost of the technology. From the findings of this study against the factors by Fullan (2001), there is every reason that educationist should prefer to use the radio since its advantage surpasses its cost.

The study revealed that there was a notable inadequacy of resources which supports the use of ERBs. Absence of school radios in the schools was an indication that the use of the live broadcasts could not be utilized in the schools. It was also found out that most teachers preferred to use the radio for entertainment rather than for educational purposes. There was also the concern on awareness and publicity about the school's radio broadcasts appeared to be the major reason for the low extent of use of the radio broadcasts. This is because very few principals and teachers in the study sample reported

having attended the publicity and sensitization seminar on the use of educational media. The kind of publicity that educational radio broadcasting required involved the elements of sensitizing of teachers, which is essentially a combination of the interest and evaluation stage in the process of adoption of an innovation. Sensitization involves telling teachers how the use of radio is important in the teaching and learning process so that they can decide whether to try it. However, in the case of Molo sub County secondary schools, the findings indicated that the KICD radio producers and the entire broadcast radio distribution system failed in this role of publicizing the school radio broadcasts. The reasons for this failure call for further research.

On the level of competence of the teachers, research found out that most teachers are not adequately trained to conduct lessons using the broadcasts. Only 35% responded that they are well trained to use the broadcasts. Most of the trained teachers received their training from various universities and colleges and only 9.1% were trained through seminars and workshops.

Majority of the teachers had a positive attitude towards the broadcasts; they felt that the quality of the broadcasts was good and that the radio was still a relevant technology which cannot be ignored amidst the emergence of more advanced technologies. They however raised issues with the amount of time allocated for the broadcasts which they felt it was too short. The issue of timetabling and the over emphasis on attaining high grades was also influencing the use of the broadcasts negatively.

The other major concern was the findings on lack of school policy on the use of radio, the schools lacked a written policy on the use of educational media at large and this affected the principals in their role of supervising how such media are used in their respective

schools. Lack of the necessary radio materials also was another factor that the researcher established; those materials were missing in most schools and made it difficult for the teachers to use the radio. Insufficient knowledge and skills on the use of school radio programmes was also a key factor.

In overall, some aspects of instructional technology have been poorly conducted by the Kenya Institute of Curriculum Development. The study therefore recommends that effective promotional activities for the radio lessons should be carried out by the producers and curriculum developers in order to encourage schools to use the programmes.

5.3 Recommendations

This research sought to assess the use of ERBs in secondary schools in Molo Sub County. It found out that there was inadequate availability of instructional materials that support the use of ERBs in schools. The level of awareness of the programmes was also poor, the teachers agreed that they were averagely trained to use the broadcasts. Although the principals supported the programmes, they did not do much to ensure they are utilized by the teachers in their schools. It was however noted that the teachers had an encouraging attitude towards the programmes.

Based on the findings from the study, the following recommendations were made.

1) The KICD should avail the support materials such as broadcast catalogue, timetables and broadcast notes to schools. They should also support some school in the purchase of radios in order to promote their programmes.

2) The KICD should conduct a rigorous public awareness on the existence of the ERBs. This should be conducted through frequent seminars, symposia and advertisement through electronic and print media.

3) The teacher training colleges and universities should review their courses and put necessary emphasis on education technology courses. This will equip the teachers with adequate skills which will help them in utilization of educational media such as the radio.

4) The principals should steer the formation of school policies which should guide the teachers on the use of education media. This will assist in making follow ups on the progress of integration of technology in teaching in their schools. The principals should support the use of ERBs by supplying the schools with good radios and other support materials which will encourage the teachers to choose the radio as a teaching aid.

5.4 Suggestions for Further Research

In the course of this study some very important issues emerged. These emerging gaps need to be filled. That is why further research is necessary in the following areas:

a) Relationship between the use of ERBs and performance in secondary schools in Kenya.

b) A study on policy of ICT integration in the management of secondary schools in Kenya.

c) Teachers' attitude towards integrating technology in secondary schools.

d) A study into the factors influencing the integration of ICT in secondary schools in Kenya

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APPENDICES

APPENDIX 1: QUESTIONNAIRE FOR SECONDARY SCHOOL TEACHERS

Dear Respondent,

You have been chosen to participate in this study which seeks to investigate the factors influencing the utilization of educational radio broadcast produced by KIE. As a teacher, your honest information will be of great contribution to the improvement of teaching in secondary schools. Your response will be treated with utmost confidentiality and will be used only for the purpose of this study.

Your willingness and cooperation is highly appreciated.

 (Tick as appropriate)

I. General information

    1) Name of school …………………………………………………………………

    2) Category of school: a) County   ▭

                                      b) Sub County ▭

                                      c) Private   ▭

3) Number of years in service: between a) 0-5 ☐

b) 5-10 years ☐

c) Over 10 years ☐

4) Gender   a) Male ☐

b) Female ☐

5) Education background   Masters ☐

BeD ☐

PGDE ☐

Other Degree ☐

Diploma ☐

Other (specify)……………………………

7) Teaching subjects: ………………………….and…………………………………

II. Availability of support materials

1) Does the school have a radio?   Yes ▭   no ▭

2) Is the radio in good working condition?   Yes ▭

                                                 No ▭

3) Do you receive the KBC signal   yes ▭

                                                 No ▭

4) If yes, how clear is your radio reception   a) very clear? ▭

                                                 b) Clear ▭

                                                 c) Faint ▭

                                                 d) Not clear ▭

5) How else is the radio used in your school? a) For entertainment ▭

                                               b) Listen to news ▭

                                               c) Listen to other programmes ▭

                                               d) Others (specify) …………………………

6) Does your school have any of the following?

		YES	NO
A	KIE broadcast catalogue		
B	2012 Broadcast timetable		
C	Radio lesson room		
D	Adequate source of power		

7)Which other relevant teaching aid does your school have that can support radio

broadcast?...

....

8) Which support materials would you want to be provided with to support you in using

the radio broadcasts?...

....

III. Attitude

Indicate to which extent you agree or disagree with the following statements. Use the key

provided below:

A- Agree;   **TD-tend to disagree**

T A-tend to agree;   **D - disagree**

	A	TA	TD	D
Educational radio broadcasts are reliable instructional media in improving quality of teaching.				
The school timetable fits well with the schedule of radio broadcasts in K.B.C.				
The time allocated for radio broadcast lessons is adequate.				
Educational radio broadcast have relevant educational content				
The structure of the syllabus encourages the use of ERBS.				
ERB lessons are cumbersome to prepare				
ERBs encourages the learners to participate in the lesson				
The role of a teacher in class can be replaced by use of ERBs.				
It is easier to prepare other teaching aids than to prepare radiobroadcast lesson.				
ERBs are outdated technologies and are not relevant in the current world.				
The school encourages performance by mean score and radio lesson cannot help me achieve that.				
I prefer making my broadcasts at school rather than listening to those aired by KBC				

Please give explanations for your responses above

……

……

……

……

IV. Level of awareness

1) Do you listen to KIE radio broadcasts   Yes

No

2) If yes how often   a) daily basis

b) Sometimes

c) Rarely

d) Never

3) Which subjects do you listen to?

....

4) If no in 1 above, why?

……

…………………………………………………………………………………………………..………

5) How did you know of the broadcast?

      a) Heard in the radio

      b) Through posters and pamphlets

      c) From fellow teachers

      d)Through other ways,(specify)…………………………………………

      ……………………………………………………………………………

      ……………………………………………………………………………

      ……………………………………………………………………………

6) Are you aware of other ERBs done by other radio stations?

      Yes   no

7) On which radio station are they aired?

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

8) Which specific subjects of those ERBs aired by other stations do you listen to?

....

....

....

V. Level of competence

1) Have you ever taken any educational radio utilisation training or participated in media workshops

Yes ☐   no ☐

2) If yes, what type of training did you take?

        a) In the university ☐

        b) In the in-service training ☐

        c) Through media seminars ☐

        d) Others (specify) ☐

3) How do you think the training helped you in using the educational radio programs?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

4) Indicate which level you are skilled in the following areas. Use the key provided below.

TS- Totally Skilled.   **SS-Somewhat Skilled**   **NS- Not Skilled**

		TS	SS	NS
a)	Making schemes of work incorporating radio broadcasts			
b)	Making lesson plans of radio broadcasts			
c)	Conducting a radio lesson class			
d)	Evaluating learners after a radio lesson class			
e)	Making audio tapes using the school resources			

VI. Other factors

1) How does the principal influence you on the choice to use ERBs?

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

2) What other factors do you think influence you in using the educational radio broadcasts?

………………………………………………………………………………………………

………………………………………………………………………….................................

....

....

3) Does your school have a policy on ICT integration in teaching?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

4) How does lack of a policy influence your teachers on the use of ERBs in teaching?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

5) What are your comments on the radio lessons from KIE as far as teaching is concerned?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

6) How can the KIE improve on their broadcasts to schools?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

APPENDIX 2: OBSERVATION SCHEDULE

	Good	**average**	**Not good**
Structure of the classroom			
Quality of the radio			
Reception of the signal			
Inclusion of radio lessons in the school timetable			
Teachers use of the radio			
Presence of other support materials			

APPENDIX 3: INTERVIEW SCHEDULE FOR THE PRINCIPALS

Introduction

My name is Peter Njoroge, I am undertaking a study on the use of educational radio broadcasts in secondary schools in Molo District, more precisely those produced by KICD and aired through KBC.

You are one of the principals Chosen to participate in this study and I thank you for accepting to help me with information. As we go on with this discussion I will be noting down some points. May I also assure you that the information you will give will be treated with confidentiality and will be used for this study only? Your information will be of great use in improving teaching not only in this school but also in the country at large. You are free to ask questions and raise issues pertaining to this discussion as we proceed. Now sir/madam,

1. How long have you been in this school as the principal?

2. Are you aware that KICD prepares radio broadcasts for schools?

3. As a teacher, have you ever used them in your lessons?

4. How useful were they in your lessons?

5. What are your comments on the teachers' use of ERBs in your school?

6. Which steps have you taken to ensure that the teachers use the broadcasts?

7. Do you have an educational policy on the use of educational media in your school?

8. Do you presence or absence of a policy would influence the adoption of ERBs in your school?

9. Which facilities that support the use of ERBs do you have in your school?

10. In your opinion, what do you think influences the teachers on their choice to use ERBs?

APPENDIX 4: TABLE FOR DETERMINING SAMPLE SIZE

Table 3.1

Table for Determining Sample Size of a Known Population

S	N	S	N	S	N	S	N	S	N
10	10	80	100	162	280	260	800	338	2800
14	15	86	110	165	290	265	850	341	3000
19	20	92	120	169	300	269	900	346	3500
24	25	97	130	175	320	274	950	351	4000
28	30	103	140	181	340	278	1000	354	4500
32	35	108	150	186	360	285	1100	357	5000
36	40	113	160	191	380	291	1200	361	6000
40	45	118	170	196	400	297	1300	364	7000
44	50	123	180	201	420	302	1400	367	8000
48	55	127	190	205	440	306	1500	368	9000
52	60	132	200	210	460	310	1600	370	10000
56	65	136	210	214	480	313	1700	375	15000
59	70	140	220	217	500	317	1800	377	20000
63	75	144	230	226	550	320	1900	379	30000
66	80	148	240	234	600	322	2000	380	40000
70	85	152	250	242	650	327	2200	381	50000
73	90	155	260	248	700	331	2400	382	75000
76	95	159	270	254	750	335	2600	384	100000

Sample Size   Source: Krejcie & Morgan, 1970   Note: N is Population Size; S is Sample Size

APPENDIX 5: KICD TIMETABLE

APPENDIX 6: RESEARCH PERMIT

APPENDIX 7: RESEARCH AUTHORIZATION

15/3

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNO...

...LOGY

Telephone: 254-020-2213471, 2241349
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...w.ncst.go.ke

P.O. Box 30623-00...
NAIROBI-KENYA
Website: www...

...h April 2012

Our Ref: NCST/RCD/14/012/338

1...
Date:...

Peter Kihiu Njoroge
Moi University
P.O. Box 3900-30100
Eldoret.

RE: RESEARCH AUTHORIZATION

...ity to carry out research on " A study
... of educational radio broadcasts in
...rict," I am pleased to inform you that you
...take research in **Molo District** for a period

Following your application for autho...
of factors influencing the use
secondary schools in Molo Dist...
have been authorized to unde...
ending 31st July, 2012.

...eport to **The District Commissioner and the**
... **Officer, Molo District** before embarking on the

You are advised to ...
District Education
research project.

...on of the research, you are expected to submit **two hard**
... **one soft copy in pdf** of the research report/thesis to our office.

On completio...
copies and

...R. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

D...

Copy to.

The District Commissioner
The District Education Officer
Molo District.

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development."