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Utilization of Educational Technologies in Teacher Education for English Language in Kenyan Universities: A Preparation for Appropriate Teacher for Today and Tomorrow

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Abstract:
This study was an investigation of the factors militating against the effective use of educational technologies in the education and training of teachers of English in Kenyan universities who are relevant for today and tomorrow. The objective of this study was to establish factors militating against the acquisition and utilization of educational technologies in the education programmes of teachers in the Universities. This study was based on the theory called: Technology Acceptance Model. This theoretical model holds the principles that acceptance of technology is based on its relative advantage, compatibility, ease of use, triability and observability. A descriptive survey research design was adopted to guide this study. This was utilized in the collection of data on existing current educational technologies with intent to obtaining the reasons hindering its effective implementation in the areas of mainstreaming and integration into the teacher education programmes. The study population included fourth year student teacher trainees of English education, lecturers of English and Literature education, heads of the departments of curriculum instruction and educational media and the senior media technician. Purposive sampling was used to sample some of the respondents. Stratified random sampling technique was used to cater either gender among the students followed by the application of simple random sampling technique to cater for individual participants in every gender. Questionnaires, observation and interview were used to collect data. The results were analyzed, presented and discussed as descriptive and explanatory discourse. The findings of this study were varied, some of them were that universities had few current and old educational technologies required for the training of teachers of English; effective training of teachers of English was limited by shortage of training materials, shortage of time, shortage of funds, limited motivation and inadequate space. Finally the universities were slow in implementing the policies in the strategic plans related to acquisition and use of sufficient educational technologies to cater for the ever rising students' enrollment.

Keywords: Educational technology, teacher education, teacher training, information communication and technology

1. Introduction

This study investigated factors that act against the effective utilization of educational technologies during the preparation of teachers of English language in Kenyan universities. The institutions had insufficient new and old educational technologies. Their utilization also was wanting because many factors seemed to cause this drawback.

It is important to understand in this case that education programmes in every country or society should reflect on the dynamic nature of underlying technology. In relation to this, Theodore and Schlechter (1991) stated that teacher education programmes should respond to the public opinion, state initiatives, federal directives, and current thinking in the profession and technological usage. Kenya, like other countries aspires to develop through education conceptions emphasize the use of information communication technologies (ICT). As a result teacher education programmes should reflect the technological mood of times and allocate resources to critical areas of need. In order to understand the role of technology training in both today's teacher education environment and the technology training needs of tomorrow's teachers, it is necessary to provide a perspective on the current context in which technology training occurs. Theodore and Schlechter (1991) further argued that as colleges and universities look to the future it will be critical that staff consider important factors. Briefly, these may be summarised in the following manner: Teachers must be competent designers of instructional systems which will enable them to assist their students to become critical thinkers and information workers:

- Tomorrow's technologically oriented schools will call for new teacher roles and knowledge of technology. This means that teachers will need to be proficient, critical users of technology which includes recognition of technology's limitations and potentials.
- College and University faculty will need to become more knowledgeable and proficient in using technology in order to model effective instructional techniques.

- Pre-service teacher's clinical experiences must be in schools in which teachers and students are actively involved in using technology as a common learning experience. Underwood and Underwood (1990) also noted that computers, software and related technologies are continuously changing and therefore teacher training.

The National Council for Educational Technology of the United Kingdom (UK) defined educational technology as: "The development, application and evaluation of systems, techniques and aids to improve the process of human learning" (Clark, 1983:457). In this case technology viewed broadly, encompasses tools for example audiovisual media and computers, and techniques for example, programmed instruction and simulation games as well as processes such as systematic instructional design. The same Council also enumerated the following as the potentials that can be achieved when modern educational technology is used:

- Improving the clarity and comprehensibility of learning in classroom
- Providing mechanism for greater individualization in learning
- Enhancing the application of new learning to daily life and
- Increasing the instructional productivity of schools.

Technology can turn the whole world into a global village. Unless the training of teachers put emphasis on the modern technology teachers will be overtaken by the events. Maranga (1977) pointed out that teaching has revealed that all things being equal teacher trained in particular skill perform better than untrained teacher. He further noted that quality training can only be received through a programme that is relevant to the needs of its recipients. In this case, teacher preparation in the modern educational technologies is very relevant.

Studies in Kenya by Ogoma (1987), Oslon (1992) and Odanga (2000) observed that a good number of institutions have acquired computers, television, video-tapes, telephone lines, recorders among others but they have not used them for instructional purposes. In the list of instructional resources recommended for English instruction in Kenya secondary school syllabus are modern educational technologies such as computers.

1.1. Statement of the Problem

Education and Training in modern technology is one of the central points in the improvement of quality in Education and other fields of production. Education and training of teachers is concerned with defining the gap between what is happening and what should happen. From this point of view, it would be interesting to establish   the reality of the gap that can be bridged with effective preparation of teachers in the area of modern educational technology.

It appears that many Kenyan secondary schools have acquired computers, television, video-tapes, telephone lines recorders among others, but they may not have used them fully for instructional purposes**.** It is puzzling why this is the situation. This study therefore, established the use of modern technology in the preparation of teachers of English in universities and the factors that militate against the effective utilization of modern technologies in the teacher education programmes in the country.

1.2. Purpose and Objectives of the Study

The purpose of this study was to investigate factors militating against effective use of educational technologies in the education and training of teachers of English in Kenyan universities.

The specific objectives of the study were:

1. To establish the use of educational technologies in the education and training of teachers of English in Kenyan universities.
2. To investigate factors that limits the effective use of educational technologies in the education and training of teachers of English in Kenyan universities.

1.3. Theoretical Framework

This study was informed by the theory of the Technology Acceptance Model (TAM).This is an information system theory that models how users come to accept and use technology. TAM is one of the most influential extensions of Ajzen and Fishbein's Theory of Reasoned Action (TRA).It was further developed by Fred Davis (1989) and Richard Bagozzi (1992).The Technology Acceptance Model (TAM) replaces many of TRA's attitude measures with the two technology acceptance measures namely, usefulness and ease of use. Both Theory of Reasoned Action (TRA) and TAM have strong behavioural elements and they assume that when someone forms an intention to act, they will be free to act without limitations.

The model suggests that when users are presented with new software package a number of factors influence their decision about how and when they will use it namely: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).Perceived Usefulness (PU) was defined by (Davis1989) as the degree to which a person believes that using a particular system would enhance his or her job performance. While Perceived Ease of Use (PEOU) was defined as the degree to which a person believes that using a particular system would be free from effort.

The TAM theory further explain that in the real world there are many constraints, such as limited ability, time constraints, environment or organizational limits or unconscious habits, which will limit the freedom to act. Thus in the light of this theory, this study investigated personal and institutional factors which affect effective utilization of educational technologies in the preparation of teachers in Kenyan universities.

2. Literature review

2.1. Importance of the Modern Educational Technologies to the Teacher

Webb and Kembo-Sure (2000:309) asserted that teacher education has an absolutely vital role to play in the molding of teachers. They stressed that language teacher training is too important to be taken for granted. It is therefore necessary for teacher training institutions to incorporate the modern educational technologies in the language teacher training programme. This would ensure teacher competence in the use and acquisition of modern educational technologies in the field of English instruction. 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 language 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 and Tinsley, 1995).

 According to Veen (1984), teacher decisions whether or not to use computers depends on the basic categories of factors at school level and factors at teacher level. However, teacher factors appear to be more significant than the factors at school level. When teachers are less equipped during the teacher training, they will be less competent in creative acquisition and the use of modern educational technologies at school level.

Teachers fear the use modern educational technologies may replace them. Job security in developing countries is paramount and therefore everybody will do all that is possible to protect their source of daily bread. The introduction of new technologies that is machines in some places have rendered most of the people jobless; hence teachers' fears may be founded after all. However, this fear has been dispelled by Noel (1991). He advised that a teacher remains a teacher and a machine remains a machine. Teachers are trained in human psychology and philosophy which help them in shaping the learner's destiny which machines cannot do. (Noel Williams, 1991): Abenga, (2005) further advised that appropriate technology use can be very beneficial to increase productivity and the credit goes to the teacher.

The use of educational technologies by teachers greatly promotes their professionalism and help them in time management. Parr (1999), Charr-Chellman and Dyer (2000), noted that the current support for and promotion of the use of learning technologies in classrooms, will bring admirable needs and additional focus increased time release for experienced teachers to undertake the professional development. Investigations also show that the innovation and the effective use of technology to promote creativity and social rapport among the teachers and the learners hence making learning more productive.

Underwood and Underwood (1990) observed that technology does not take away the work of a teacher as may be by some speculations. Instead technology increases the effectiveness of the teaching profession for it promotes a teacher from a school to becoming a global teacher. They further noted that technology has brought about the global village learning.Theodore and Shlechtel (1991) stressed that 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 everything in a limited period of time.

A number of scholars have regretted that the preparedness of the teachers in the use of the new technology to teach is full of challenges right from the training institutions to the field is full of challenges and it has lot of expectations as it is observed by(Barasa 2005, Webb and Kembo-Sure 2000 and by Abenga 2005). All of them observed that training is not sufficient, but expected production is very high.This study investigated factors that limit effective use of educational technology in Kenyan universities.

2.2. Relevance of Educational Technology to the Learners

Since most of the world's current curriculam of education promotes student-centred kind of learning and the innovation and the use of educational technologies their use would relieve teachers from being the sources of knowledge to being facilitators. Technologies bring activities, which are miles away to classroom, which otherwise could not have been learnt forever. Teachers and learners also can increase their knowledge from specialist in a distant world through technology. If the use of technology is complementary and not substitutive to the work of a teacher, it imperative, therefore the Kenyan universities should use educational technologies effectively to prepare teachers of English.

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 successful integration will lead to enhanced learning outcomes (UNESCO, 1998). Fox (2005) stated that technology is being fused into the schools and its ongoing is unstoppable, and necessary. Thus school use and access to the new and current technologies is on the rise and more countries have established technology standards for students, teachers and administrators.

UNESCO (1997) reported that educational technology has numerous potentials in the learners, for examples:

- Opening the classroom to more communication opportunities
- Encouraging greater teacher-student and student- student discussion as well as
- Creation of opportunities for tasks that are complex and authentic and connected to projects which may be multidisciplinary and long term.
- Give students more opportunities for multiple ways of discovering, creating and communicating information in various format and voices.

Meanwhile, the educational role of technology has grown tremendously in several ways providing that the use is undeniably important for helping to teach content (Suydam, 1990 as cited in Jarrett, 1998) who acknowledged that:

- Today's technology can offer adolescents a bridge from concrete to abstract thinking enabling them to observe and create multiple representations of mathematical ideas: numerically, graphically, and symbolically.

- Technology has become a very powerful instructional tool to develop abstract thinking, which should be reflected also in assessment. If this is the case how are Kenyan universities taking advantage of educational technology in their preparation of teachers of English?

According to Means and Olson (1997) as cited in Charr-Chellan and Dyer (2000) educational technologies fosters the following:

- Supports students' performances of complex tasks that are similar to those performed by adult professionals.
- Can be integrated into activities that are a core part of the classroom curriculum.
- May be treated as tools to help accomplish a complex task (rather than as a subject of study for its own sake) that engage students in extended and co-operative learning experiences that involve multiple discipline.
- Have been proved to accommodate learning style and to be effective motivation for students with specific learning needs.
- Promote collaborative – team learning.

Reeves (1988) stated that learning achievement is directly dependent on four factors: aptitudes, motivation, instruction, and the psychological environment of the classroom. Important to add is idea from Plomp and Ely, (1996) who asserted that, educational technology focuses on primary mission, that of attainment of the knowledge, skills, and attitudes separated in the curriculum. One wonders, therefore if Kenyan universities are fostering these functions as they prepare teachers of English.

As pointed out in the literature thus reviewed the use of educational technologies have innumerable benefits, this research therefore investigated the availability and the effective utilization of these technologies in preparation of teachers of English in Kenyan universities.

3. Research Design and Methodology

3.1. Research Design
The descriptive survey design was used to guide data collection on the availability and the use of the educational technologies in the training of teachers of English in Kenyan.Descriptive design was chosen because of its appropriateness to ensure that accurate information, that was required for the study was established.

3.2. Study Area
The study was carried out in two universities in Kenya which are familiar to the researcher and have the biggest teacher education schools (faculties) in Kenya.

3.3. Sampling Techniques and Sample Size
This study utilized purposive sampling procedures to select the two universities because of their nature as the largest and the oldest teacher education and training centers. The universities' schools/faculties of education ware chosen on purpose. Due to specialized knowledge, skills and experience, heads of the respective departments of curriculum instruction and educational media, English language education lecturers and technicians in the department of curriculum instruction and educational media were also sampled purposively. Ninety four (94) fourth year student teachers for English and literature were purposively selected based on the fact that they had completed the course work and TP and by then they were doing their final examinations.

3.4. Research Instruments
This study adopted questionnaires and interviews as the instruments for data collection. The Validity and reliability in this study were enhanced by pilot study. This helped to check and ascertain the ability of the selected instruments to bring the desired results. The reliability statistics were calculated reliability was found to be 0.855 and it is argued that if you get a value of 0.7 and above, then the instrument for data collected is reliable (Cranbach 1964). In support to these Koul (1994) states that any results above minimum 0.5 which is a value required judging reliability is said to be reliable. The instruments were found to be reliable.

4. Findings of the study
Limiting factors here means all the forces that were working against the universities from acquiring and utilizing the expected quantity and quality of modern educational technologies despite their outstanding usefulness in the education and training of teachers. Generally the findings from the questionnaires and the interview schedules can be summarized as follows:

- The universities are very slow in the implementation of educational technologies. This has been caused by fully due to continuous the ever increasing enrollments of the students; inconformity with government policy of expanding access to university of education.
- There is shortage of funds to purchase and maintain educational technologies particularly computers. Requirements of funds has been spiraling in an attempt to keep pace
- There was also communication and administrative pitfalls to implementation, hence were a shortage of support staff that was required to organize and maintain educational technologies.
- While some lecturers were incompetent in the use of some technologies. Their numbers also there are too few to monitor the practical lessons closely and this has forced them to use lecture method only.
- It was also established that universities had few educational technologies which most of them were old. This situation therefore usually leads to a long time training students to use them, leading to poor training in the use of educational technologies.

- Another crucial finding of this study was incompetent staff (technicians) who were trained long time ago particularly in the operation of the old educational technologies. They have not been in-serviced on the current technologies and therefore they are heavily challenged in operating the few current technologies. There was also a shortage of experts in the area of new educational technology.
- Limited time for proper training of teachers to operate and use the educational   technologies practically. This is due to work overload in the curriculum that does not allow enough time for the use of technology.
- Large number of students against limited materials and very small space is also another limiting factor in this case.
- Another finding was failure to introduce basic computer training was also another hindrance yet the world is moving to greater heights of computer and internet technology.
- The universities was very slow in implementing their recommendations such as revision of curriculum, installation of more educational technologies to cope with the higher enrolment of students and employ more staff. Such failure has led them to a state of hopeless as far as acquisition and use of educational technologies.
- Lecturers also noted that they were not being given regular training to update them in the use of modern technology which is always changing. This has made them unresponsive and therefore unable to give the best to their students. Thus student teachers of English graduate from universities with knowledge and skills in the use of educational technologies, especially the modern ones.

The findings of this study also established that though, there are a lot of limitations, the students' attitude towards the use of modern technologies is positive and most of them have trained themselves in basic computer skills. The lecturers are also aware of the gap that exist and are pushing the universities to empower them through in-service training. Majority of them have positive attitude towards the full implementation and mainstreaming of the educational technologies especially in the education and training of teachers of English.

5. Discussions of the Findings

The findings proved that the two universities had very few modern and even old educational technologies. Availability of educational technologies was below average yet the student enrolment has enormously expanded. Effective training of teachers of English and Literature was hindered by a variety of factors such as few modern educational technologies, shortage of time, poor motivation, shortage of funds, scarcity of space, incompetent technicians, few numbers of lecturers, and universities were slow in implementing recommended modern educational materials among others. Thus, to make teacher education to be more effective, the programme need to be evaluated so that necessary improvements may be made from time to time. From the findings,it is evident that teacher education programmes should be adjusted to respond to the public opinion, current thinking in the profession and changes in the external environment such as technological change. Training institutions should provide teacher education programmes that reflect the mood of times and allocate resources to critical areas of needs. In order to understand the role of technology training in both today's teacher education environment and the technology training needs of tomorrow's teachers, it is necessary to provide a perspective on the current context in which technology training occurs.

Findings of this study show that educational technologies are powerful tools, which have powerful effects upon children's minds. Information technology is an enabling technology. Their usefulness in the teaching and learning of English and literature include; making learning to become more interesting, enhancing retaining rate, aids the acquisition of skills easily, promotion of collaborative learning, motivation of learners, makes learning student centred and gives students more opportunities for multiple ways of discovering, creating and communicating information in various formats and voices.

Educational technologies also are very useful to teachers. Contrary to the opinion that technology might rob teachers their work, instead technology enrich the work of the teachers. This study concludes from its findings that the teachers role such as providing a favorable environment which is in sympathy with the child's level of cognitive and physical development, provision of scaffold for children's problem solving situation, and providing support when the child is in difficulty to select, remember and plan. Teachers also evaluate learners, shape their attitudes and ensure discipline among the learners which machines cannot do. Technology therefore does not replace the teacher it perfects the work of the teacher. Right from the background of this study it can be concluded that to make teacher training more effective, the training programme need to be evaluated so that necessary improvements may be made from time to time. Teacher education programmes should be adjusted to respond to the public opinion, current thinking in the profession and changes in external environment such as technological change. Training institutions should provide teacher education programmes that reflect the mood of times and allocate resources to critical areas of needs. In order to understand the role of technology training in both today's teacher education environment and the technology training needs of tomorrow's teachers, it is necessary to provide a perspective on the current context in which technology training occurs. Modern educational technologies, which encompassed audio-visual media and computers, have great potential to improve and transform learning in secondary education. This potentiality include improving the clarity and comprehensibility of communication in 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.

6. Conclusions

Modern educational technologies, which encompassed audio-visual media and computers, have great potential to improve and transform learning in secondary education. This potentiality include improving the clarity and comprehensibility of communication in 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 successful integration will lead to enhanced learning outcomes (UNESCO, 1998). Fox (2005) stated that technology is being fused into the schools and its ongoing is unstoppable, and necessary. The universities and all the other education institutions should lead in front by preparing relevant teachers in that direction for today and tomorrow.

7. Recommendations

From the findings, discussions, summary and conclusions above, it is therefore against this background that the recommendations below are made:

- The educators should prepare for a technology- rich future and keep up with change by adopting effective strategies that infuse lessons with appropriate technologies. Assessment must keep pace with effective instructional technology use.
- Educational leaders and various stakeholders should develop a technology vision to support learning goals that are focused on improved teacher training in the use of modern educational technologies. They should share the vision for comprehensive integration of technology and foster an environment and culture conclusive to the realization of that vision.
- Universities should secure the necessary technology resources and ensure that technology integration is treated is an ongoing Endeavour and not isolated from system wide improvement efforts. They should not treat educational as one- time cost.
- Ongoing maintenance support and replacement of software and hardware are large costs that must be added into the budget and be always evaluated.
- Basic training in computer knowledge and skills should be provided to all undergraduate teacher trainees. Computer training should be incorporated to the main teacher training Programmes and more so the teachers should be trained in Computer Assisted Learning (CAL) Programmes.
- The present training programme should be revised and the syllabus should include and emphasize the new educational technologies which are currently desired most, for example the use of computers during training and for professional and personal purposes.
- For the teachers in the field, the government should establish a national centre for technology and teachers education that disseminate new knowledge, develops new knowledge, coordinate and recommend new educational technologies and provides refresher courses to already practicing teaching and lecturers.

7.1. Recommendations for Further Research

The area of research related to the new educational technologies is wide and unexplored. The researcher therefore recommends the following areas for further research:

1. Research should be done to investigate the availability and use of new educational technologies in the training of teachers in other subjects.
2. Research be carried out to investigated the availability and the professional use of new educational technologies, especially computers and internet in the instruction of various subjects in the Kenya Secondary schools.
3. Research should be conducted to find out the disparity in the use of educational technologies among teachers in secondary school.

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