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RESEARCH ARTICLE

TEACHERS' AND STUDENTS' APPRAISAL OF THE USE OF INTEGRATED E-LEARNING VIS-À-VIS CONVENTIONAL APPROACHES TO THE TEACHING AND LEARNING OF BUSINESS STUDIES IN KENYAN SECONDARY SCHOOLS

Susan J. Kurgat*

Department of Curriculum Instruction and Educational Media, Moi University, P.O. Box 3900, Eldoret, Kenya

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*Corresponding Author

Susan J. Kurgat

Abstract

Modern technology is essential in fast development of any nation and therefore Kenya's education system must embrace it and move fast with the innovation. Based on a study of selected secondary schools in Kenya, this paper analyses how teachers and students compare the integrated E-learning approach with the conventional approaches to the teaching and learning of Business Studies subject. A descriptive survey research design was adopted. The study was undertaken in the selected E-schools in Kenya. Purposive sampling was used to select the teachers and random sampling technique was used to select the students. A total of three Head teachers, eight Business Studies teachers and 127 Business Studies students participated in the study. Questionnaires and face to face interviews were used to collect data from the sample. Both descriptive and inferential statistics were used to analyze the data gathered in this study. Descriptive statistics included use of frequency tables, percentages and mean scores. Inferential statistics involved Analysis of Variance (ANOVA). From the study findings, one benefit as expressed by the teachers was the use of ICT to support learning experiences that involve more cooperation among learners and teachers within and beyond school and a more interactive relationship between students and teachers. In so doing, richer learning communities are developed. Head teachers should also recognize the need for time to learn and develop meaningful practice. Dedicated time is needed to fully understand and appreciate what ICT can offer, and to undertake the necessary steps to be able to put this into practice.

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INTRODUCTION

The Information and Communication Technology (ICT) tools are not different from any other media resources like chalk-board, models or graphics but are rather complimentary to these resources. They act as superior means through which teachers can effectively perform their instructional duties. Computer, as the main ICT tool, has been described as a vital tool for today's teacher (Olson, 1988). Judd (as cited in Olson, 1988 p. 10) asserts that "A teacher who won't have a computer in his or her classroom is like a ditch digger who won't learn to use a steam shovel. Like a steam shovel, a computer is a tool. It can increase the power a teacher can apply to a learning situation but it does not replace the teacher". In Kenya there has been demand for general computer training in schools. Addressing secondary school head teachers meeting, Eshiwani (1998) amply put it that,

I must submit to you that the school of the 21st century will be schools without walls, books, curriculum and even structures might become irrelevant since learning will be delivered through computers and other modern systems of information technology (*East African Standard*, July 4).

Modern technology is essential for fast development of any nation and therefore Kenya's education system must embrace it and move fast with the innovation. Earlier, electronics such as the Computers, TVs, Radios, Cameras among others were relatively expensive. Schools therefore may not have afforded the innovation, but now prices of these electronics and their software's have dropped to a level that a school can afford. Expenditures on all other media resources such as textbooks can be trimmed and transferred to purchasing these media.

Komen (1991) observes that "to suppose that a brilliant teacher who has a clear concept of the subject, clarity of thoughts and eloquence need not use resources is erroneous". This statement suggests that, it is not good enough to possess the articulatory attributes alone in the teaching process but that there is need to use appropriate media alongside traditional teaching to enhance learning.

Conventional Approach

The conventional instructional method, also referred to as the traditional lecture method, is defined by Miller (1987) as an instructional method in which the amount of verbal interaction between the teacher and the students is minimal. Ayot *et al.* (1987) define it as the instructional method in which a teacher verbally articulates content while students only listen and write down notes. It consists of oral communication on the part of the teacher. Most schools in Kenya heavily rely on the conventional methods of teaching. Rarely are students challenged on critical thinking through the innovative methods of teaching that integrate modern media technologies.

Conventional methods are capable of conveying information not easily accessible to students and reinforce written work through repetition (Griffith, 1982). Griffith also adds that these methods are economical due to its ability to synthesize many sources and can be used conveniently to inform students of the expected results. Gagne (1977) asserts that the conventional methods can be used to establish and augment motivation in order to increase learner achievement levels. The methods partially attempt to provide prompting and guidance to learning.

Conventional methods are limited in several ways. Griffith (1982) states that, the basic disadvantage of these methods is the 'tell all' complex. Teachers using them are at times not aware of the amount of information that can be absorbed in a given period of time. Griffith (*ibid.*) suggests that teachers should not attempt to cover all content in a topic at once but make a few points well through visual illustrations. Whereas the methods can augment motivation to achieve, it is regrettable that it cannot sustain the same.

Moreover, the conventional methods are characterized by one-way communication. Ayot *et al.* (1987) state that these are unable to develop the 'internal closed sensory loop' which means that the students' crucial elements in learning are absent. Lack of student involvement would likely lead to students not being attentive and even the weakest stimulus can drift their attention in class. A further scrutiny on the weaknesses by Thomas (as cited in Mbutia, 1996) reveals that students show a high tendency of declining attention i.e. the proportion of information retained during the teaching and learning declined steadily after an initial settling in period. The implication in this proposition is students being taught twice the same information learned. This may not be possible given time constraints in the Business Studies syllabus coverage. Students may get bored too. This leads to poor learning and consequently poor performance of students in examinations (Makau, 1990; Too, 1996).

These findings show that the conventional method of instruction is inadequate on its own in respect to enhancement of high standards of learning and recall of information. Gagne (1977) asserts that conventional mode of instruction must use media besides oral communication in order to overcome the limitations in the approach. Dahama (1992) advocates that learning is enhanced when teaching aids are integrated and used in instructional programmes. This point of view is illustrated in Table 1.

A study by Karingithi (1988) indicates that visual illustrations have significant role in the learning process due to their ability to enrich learning environment. In support of the preceding views, Komen (1991) argues that visual illustrations arouse interest, stimulate imaginations, discussions and desire to find out more or solve some problems. This encourages the thought, action and participation.

These findings have certain implications to this study. These implications are:

- That teaching and learning which is void of visual illustrations cannot attain optimal learning.

- That higher learning and retention are enhanced when the lesson topic is illustrated with visuals, which are accompanied by verbal explanations.
- That maximal learning and retention is a function of appropriate teaching methods, which are a blend with new innovations (ICTs).

Statement of the Problem

Education and access to information is universally recognized as the most important enabler of empowering societies and individuals to manage future challenges on their own. Provision of quality education, on the other hand, is dependent on more than just teachers and classrooms. The quality of the content taught, the materials used to teach it and the skills that are developed are also of great importance.

Many studies conducted across the globe on use of technology in classrooms have reported that technology can be an effective tool in supporting learning and teaching in a classroom situation. SchoolNet programme in South Africa promotes learning and teaching through the use of ICTs. Strydom (2003) says of the e-Education policy white paper: Every South African learner in the general and education training bands will be ICT capable, that is, use ICTs confidently and creatively to help develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community (p. 13).

This shows that ICT innovations have great potential, particularly with regard to access to information, collaboration and the creation and sharing of ideas.

The realization of these, however, will require new innovations in the methods of teaching. Business Studies is a crucial subject that teaches individuals how to participate in the society in terms of investment of resources. An educated manpower is an essential asset in any country aspiring to attain industrial status.

Good student performance plays a catalytic role in the process of nation development as it presupposes good understanding of how the different structures in business operate. However, enrolment and performance in the subject have been unsatisfactory. KNEC reports (2006-2008) indicate that an average of 44% students take the subject and the average mean score 46.2% respectively. This kind of performance gives a negative picture on the subject and in turn discourages many students from enrolling. This will mean a high illiterate population in Business knowledge in the country.

KNEC report (2007) has further cited a major weakness in the students' performance as lack of mastery of content. Students do not quite comprehend the Business Studies concepts thus give irrelevant responses. Jepkoech (2002) reveals that teachers of Business Studies do not fully utilize the relevant available resources when teaching and heavily rely on conventional methods of teaching such as the informal lecture and discussion methods. The teachers of the subject, in defence, cited a wide syllabus and less time allocated for its coverage. They lamented, therefore, that they are left with no choice but to teach through the syllabus very fast using the conventional methods.

The problem with Business Studies literacy seems to revolve around the understanding of concepts, its retention, and its presentation in an examination context. The problem is worsened by limited time for syllabus coverage and thorough revision in preparation for the national exam, the KCSE. The probable cause of these problems seems to emanate from the instructional approach the teachers are utilizing.

Therefore, if teachers of Business Studies are to improve students' cognitive and affective abilities in the subject, then they must seek an alternative approach to instruction. Studies carried out in the developed countries by Mayer (2001) provide an example of well-grounded multimedia research. These studies revealed that the use of multimedia approach to teaching led to greater learning by students. 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 (DoE, 1998).

Whereas this claim has been advanced in a number of studies, it is difficult to justify, according to Honey *et al.* (2000). They claim that research into the impact of learning technologies on the quality of students' learning outcomes is limited and outdated. A limiting factor has been the difficulty of defining and measuring enhanced learning outcomes attributable specifically to the use of learning technologies. More so the various studies and

reports at the researcher's disposal indicate no studies on the perception of integrated E-learning approach as regards Business Studies. With this limited knowledge about integrated E-learning approach, it becomes imperative to investigate the integrated E-learning approach in the teaching and learning of Business Studies.

Limitations of the Study

The study was limited to the public E-schools only, which are so far known to utilize the integrated E-learning approach. Time and financial resources did not allow accomplishing the study on a larger scale. The study was limited to Business Studies and therefore the generalization of the findings be limited to the subject.

MATERIALS AND METHODS

The research was carried out in three counties in Kenya, namely Nakuru County, Vihiga County and Siaya County. It was necessary to use the three counties in Kenya because the three e-schools are situated in those counties. These schools were part of the schools selected for the NEPAD E-learning project in Kenya. These schools were found appropriate because they were fully equipped with the ICTs necessary for the teaching and learning process. The study used a survey research design. The design is deemed appropriate because the researcher could collect more information through the use of samples. This was a specific survey seeking information on the integrated E-learning approach, the independent variable, which is the e-learning innovation, was not introduced. The variable is already under treatment. The introduction of the innovation could not have been possible by the researcher because it is expensive.

To come up with a quality research, the author opted for a mixed research approach that consisted of both quantitative and qualitative attributes. Mixed research is a general type of research in which quantitative and qualitative methods, techniques or other paradigm characteristics are mixed in one overall study. Specifically, the author settled for a mixed model research in which both qualitative and quantitative research approaches were used within the stages of the research process. The author conducted a survey and used a questionnaire that was composed of multiple closed-ended as well as several open-ended. Within the same stage of study the author too conducted an interview. The quantitative and qualitative aspects of the study arose from the questionnaires administered to the teachers and students of Business Studies as well as interviewing the head teachers of the E-schools and focusing on the same phenomenon.

Three secondary schools constituted the target population for this study. These are three of the six E-schools in Kenya. The E-schools utilises the new integrated E-learning teaching approach. Reconnaissance had been done to confirm that the three had similar E-learning resources. Head teachers, teachers and students of Business Studies in those schools constituted the target population. In the study, Head teachers, Form Four teachers and students of Business Studies were identified as potential members of the sample. Form Four teachers and students of Business Studies were chosen due the fact that the class had utilized the approach longer than any other class. The Form Four Business Studies teachers have had a longer experience using the approach than other teachers in lower classes.

The Form Four students too have used the technologies longer as compared to the other student fraternity. In order to achieve a desired result with minimum costs, the researcher selected all the three Head teachers as well all eight Form Four Business Studies teachers from the three E-schools. A total of 127 Form Four Business Studies students constituted the sample. The sample was 50% of the total Form Four Business Studies students in the three E-schools. The study assumed simple purposive and simple random sampling techniques to get a representative sample. Purposive sampling was used in selecting the three Head teachers and eight Form Four Business Studies teachers. Simple random sampling was used to select the 127 out of the 252 Form Four Business Studies students.

The study used two instruments in collecting primary data, namely questionnaires and interviews. Two types of questionnaires were designed and used. One questionnaire for students was designed and another for the teachers. The instruments were used because they give the respondents adequate time to provide well thought-out responses to questionnaire items. It also makes it possible for large samples to be covered within a short time. Since standardized questionnaires for the study were not available, the author designed the required questionnaires on the basis of objectives, research questions and reviewed literature. The questionnaires used are now presented below.

The questionnaire for the teachers of Business Studies was divided into five themes. Likert types of items were used to solicit responses on the attitudinal statements. Scheduled interviews with the Heads of schools were also used to

back up the questionnaires. This target group who is still the subset of the overall target population was presumed to provide a better point of references beyond just teaching due to their insights and work experience. Interviews were carried out for the sole purpose of supplementing the quantitative data from the filled-in questionnaires. Review of literature has revealed that most findings about effects of new technology on learning are derived from quantitative data with very little or no data on direct observation and/or interviews of the learners. There has been lack of sensitivity to concomitant changes that affect the instructional settings as a result of new technology (Park *et al.*, 1993). The students' questionnaire was intended to corroborate and confirm the information obtained from the teacher-respondents. Apart from collecting information given by the teachers, it also focused on the attitudes of students towards Business Studies as a subject when using the new integrated E-learning approach.

Both descriptive and inferential statistics were used for data analysis. Data was tabulated and frequency tables were generated. Frequencies were converted to percentages to illustrate the relative levels of opinion on the issued items. Descriptive statistics entailed calculation of means scores using the Likert scale. Under inferential statistics, analysis of Variance (ANOVA) was employed to determine the significant differences in students' and teachers' perception towards the new approach. Thus the analysis was focused on testing the null hypotheses. The raw data collected from the Likert type of items were summarized in tables and coded before they were entered into the computer for analysis using the Microsoft Excel spreadsheet.

RESULTS AND DISCUSSION

The interest of the study was to determine which teaching approach was preferred. The teaching approach is a factor that research has shown to affect greatly the teaching and learning process. The analysis presented in Table 2 shows the conventional approaches previously utilized by the Business Studies teachers. The data was sought both from the students and the teachers and analyzed separately as follows:

Students' Perceptions of the Integrated E-learning Approach

Out of 123 students surveyed, 110(89.4%) reported that they were previously taught Business Studies using lecture method. Thirteen (10.5%) said that they learned through discussion method while 53(43.1%) indicated that they learned through a blend of the discussion and the lecture method. No other methods were reported to have been utilized. These findings were as presented in Table 2.

Table 1: Effectiveness of Methods of Instruction

Instructional method	Recall 3 hours later	Recall days later
Lecture	70%	13%
Visuals alone	72%	20%
Lecture and visuals	85%	65%

Source: Dahama, 1992, p. 153

Table 2: Conventional Methods of Teaching previously Adopted

Method	Frequency	Percentage (%)
Lecture	110	89.4
Discussion	13	10.5

Several studies have identified weakness of traditional teaching with no audio-visuals to aid in the teaching and learning process. Griffith (as cited in Mbutia, 1996), states that the basic disadvantage of the method is the 'tell all' complex. Teachers using these methods are at times not aware of the amount of information that can be absorbed in a given period of time. In support of the same a study by Karingithi (1988) indicated that visual illustrations have significant role in the learning process due to their ability to enrich learning environment. Komen (1991) argues that visual illustrations arouse interest, stimulate imaginations, discussions and desire to find out more or solve some problems. This encourages the thought, action and participation.

This finding confirms the students' positive attitudes towards the integrated E-learning approach earlier observed. Students reported the new approach to be informative, stimulating and fun to learn with. The new method too

influenced their perception of Business subject positively. On further inquiry on which approach deemed effective between the conventional methods of teaching and the integrated E- learning approach, 89(72.3%) students reported that integrated E- learning Approach is more effective, 6(4%) felt that there is no difference in learning between the two while 28(22.7%) could not compare.

Table 3 presents the findings on effectiveness of the integrated E-learning approach when compared with the conventional approaches reported.

Table 3: Students Perception of the Integrated E-learning Approach

perception	Frequency	Percentage (%)
Effective	89	72.3
Less effective	6	4
No difference	28	22.7

On cross-tabulation of their reasons with effectiveness, students gave the following reasons: those that think the approach is useful reiterated that the new approach was useful in the following ways:

- Internet extends the information available within the classroom. The internet is rich with information in contrast with textbook information. It allows for greater accessibility of up to date information.
- Formatting tools enabled them to edit, redraft or redraw work more easily and produce output of better appearance as well as saving time.
- It enabled them to work independently at times, especially during researches using on-line materials.
- It promoted collaboration with peers while tackling problems or assignments given.
- It motivated them to learn more because working using machines was exciting.

Those who felt otherwise gave the reason that they had not seen any difference in the teaching and learning process. And those who do not know its effect said they had not used much to see the effect.

From the analyses, it appears that the students find the integrated E-learning approach to be more effective. Effective learning can be enhanced through the use of the ICT resources as reported in a study by Hennessy *et al.* (2005) which gave a summary of the following ICT roles in classroom situation:

- Broadening classroom resources and reference
- Enhancing working processes and products
- Mediating subject thinking and learning
- Fostering more independent pupil activity
- Improving student motivation towards lessons

From the above observations, it can safely be concluded that technology can be a vehicle for engaging students' interest in a subject through the interactive and multimodal qualities of computer-based work. Immediacy of access to resources and relevance of materials would render learning more enjoyable for students. Reduced handwriting requirements and higher quality presentation motivates students and increase students' self-esteem.

Teachers' Perceptions of the Integrated E-learning Approach

To corroborate the students report on the methods used in their classrooms, teachers too gave the following information. Of the 8 teachers surveyed, 3(37.5%) reported that they previously taught Business Studies using lecture method, another 3(37.5%) said that they taught through discussion method while 2(25%) indicated that they taught through a blend of the discussion and the lecture method. No other methods were reported to have been utilized. These analyses were presented in Table 4.

Table 4: Conventional methods of teaching previously adopted

Method	Frequency	Percentage (%)
Lecture	3	37.5
Discussion	3	37.5
Lecture + Discussion	2	25

This observation strongly confirms the methods that were previously used in the teaching of Business Studies discipline. It is quite apparent that teachers did not use any other teaching methods despite a variety of them. A study by Jepkoech (2002) has established that teachers choose to use the conventional methods due to time constraints aggravated by a wide Business Studies syllabus.

Of further interest to the study were the views on whether the new integrated approach is more effective compared to the methods they have previously used. The findings show that the teachers perceived the method to be effective in comparison to conventional methods previously used. Seven (87.5%) of the teachers stated that it was very effective while 1(12.5%) stated that it was less effective. These analyses are presented in Table 5.

Table 5: Teachers perception of the integrated E-learning approach

Perception	Frequency	Percentage (%)
Effective	7	87.5
Less effective	1	12.5
Total	8	100

The teachers who felt that the method was effective gave the following reasons:

- a) The integrated E-learning Approach is student-centred
- b) Method allows cross-referencing.
- c) Reinforces what students know.
- d) Stirs a lot of enthusiasm among students.
- e) Allows more exploration and discovery of content allows students to use most senses learning made more interesting students can proceed on their own allows for more creativity both on the part of teacher and the student.
- f) Content is summarized and stored for retrieval.
- g) Makes one confident
- h) Students are active, curious, excited and happy. This is because students get access to the online educational material and the Encarta encyclopaedia. Some schools also had linkage programme with Oxford library.

The teacher who felt the approach was less effective gave the reason that the method was time consuming. This could be attributed to the lack of literacy skills on ICT integration in his lessons.

The above findings leads to a conclusion that integrated E- learning approach is more superior to the conventional approaches of teaching. This is because it is in agreement with the studies that highlighted the weakness in the conventional approaches to instruction. One cited weakness was the fact that the method is a one-way communication. Ayot *et al.* (1987) state that the method is unable to develop the ‘internal closed sensory loop’ which means that the students crucial elements in learning are absent. Lack of student involvement would likely lead to students not being attentive and even the weakest stimulus can drift their attention in class.

In support of the preceding views, Thomas (as cited in Mbutia, 1996) reveals that students show a high tendency of declining attention, that is, the proportion of information retained during the teaching and learning declined steadily after an initial settling-in period. The implication in this proposition is students being taught twice the same information learned. This may not be possible given time constraints in the Business Studies syllabus coverage. Students may get bored too. This leads to poor learning and consequently poor performance of students in examinations as cited by Makau (1990) and Too (1996).

From the foregoing, it can be safely concluded that the integrated E-learning approach is more effective as compared to conventional approaches to teaching.

CONCLUSION AND RECOMMENDATIONS

One benefit as expressed by the teachers was the use of ICT to support learning experiences that involve more cooperation among learners and teachers within and beyond school and a more interactive relationship between students and teachers. In so doing, richer learning communities are developed. Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and

respecting the abilities and contributions of their peers. Cooperation is a structure of interaction designed to facilitate the accomplishment of a specific end product or goal through people working together in groups. ICT provides good support for team-based project work. The use of ICT to support collaborative and cooperative learning is extrapolated to the support of learning communities.

Head teachers should, therefore, recognize the need for time to learn and develop meaningful practice. Dedicated time is needed to fully understand and appreciate what ICT can offer, and to undertake the necessary steps to be able to put this into practice. The head teacher has to plan for a well staged implementation process. Any new development passes through a series of stages and the characteristics of these stages, and the period of time required to move through them, must be recognized. Head teachers should encourage collaborative development and refinement of pedagogic strategies involving use of ICT in subject teaching through recognition of the changing needs and practices of teachers.

The staged process must consider the needs of those who will be expected to adopt use of ICT and recognise that these needs change over time, as people's use of ICT develops. Similarly it must recognise that different practices may be associated with the different stages of use, some of which may be transitional and need support to develop.

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