



Effects of Online Learning on Students with Disabilities in Public Universities in Kenya

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Abstract:

Online teaching and learning pedagogy creates a community of inquiry where participants interact to jointly construct knowledge. Special education policies and practices that ensure students with disabilities receive a free, appropriate public education in the least restrictive environment are coming under pressure from the rapid expansion of online learning. Study findings demonstrated an increase in the number of Universities providing online instruction with limited anticipated barriers to students with disabilities participating in online learning. As a result, students bring to their university education a wide range of perceptions, attitudes, and prior experiences that may affect their learning outcomes. The purpose of this study was to examine the effects of online learning on students with disabilities in Kenyan public Universities. The objectives of this study were: to determine the effects of online learning model on students with disabilities and to establish strategies that have been put in place to support online learning for students with disabilities in universities. This study employed descriptive survey design. The sample size was made of 150 students sampled from four universities campuses in Kakamega town, Kenya. Stratified sampling, simple random sampling and purposive sampling were employed in the study to sample the participants of the study. A self-report questionnaire was used for data collection. Pilot testing of the instrument was done by administering the questionnaires to 10% of the total sample size. Validity of the research instrument was determined through content validity while reliability was measured by use of Cronbach's alpha. A score of 0.729 was attained thereby qualifying the research instrument as acceptable and reliable. Descriptive statistics were used to analyze the data. Processed data were presented using frequencies, percentages, mean and standard deviations; and summarized in Tables. The study established that online learning model is effective in relation to student to student interactions but denies them opportunity to interact with lecturers frequently. The model enable students to accomplish tasks conveniently, though is inflexible and prone to internet connectivity failures. The study recommends that university management should direct adequate resource to develop online learning technology that is adaptive to needs of all students particularly those with disabilities.

Keywords: *Students with disability, education policies, online learning, Special education, e-learning*

1. Introduction

Education of special needs learners in the society is a global issue. In recent years efforts have been put in many countries to ensure that the right to educational opportunity and rehabilitation is extended to all members of the community (UNESCO, 2005). The current strategies and programmes have not been sufficient to meet the needs of learners who are vulnerable to marginalization. Previous studies on effective strategies in special needs education have established that, inclusive education teaching strategies can be modified to meet the learning needs of those with learning difficulties (Davis & Florian, 2004; Lewis & Norwich, 2005). Online teaching and learning classes' strategy creates a community of inquiry where participants interact to jointly construct knowledge (Borstorff & Lowe 2007). The social stratification theory by Rumberger (2004) focuses on school characteristics, policies and practices. Rumberger argues that structural features of school such as the size, the resources available to the school and access to high quality teachers may influence academic performance among learners. Universities being learning institutions have also embraced inclusive education as was presented in the Salamanca Statement which contained the principle of equal access for all students in mainstream classrooms, and the demand for necessary accommodations and support for meeting the diverse needs of all children (UNESCO, 1994).

According to a Commonwealth guide to implementing article 24 of the UN Convention on the Rights of Persons with Disabilities, inclusion in education is a process of enabling all learners to attain education and participate effectively within conventional school systems, without segregation. It is about shifting the focus from altering disabled people to fit into society, to transforming society and the world; by changing attitudes, removing barriers and providing the right support. The UN Convention on the Rights of Persons with Disabilities requires the development of an inclusive education system for all (UNESCO, 2005). Booth (2005) asserts that the key principles of inclusion are; access, quality, equity, social justice, democratic values, participation, balance between community, compassion and respect for diversity. Today, Universities are providing online learning instructions with limited anticipated barriers to students with disabilities which is a form of inclusive education.

Centre for studies on inclusive education (CSIE, 2002) reported that inclusion focuses on the reconstruction of curricular provision to remove barriers to learning and participation. Learners with difficulties have unique needs and it is vital that their individual strengths and weaknesses are realized. However Mukuria and Korir (2007); and Kiptarus (2005) state that the Individual Education Plan (IEP) and systems of services to provide for the learner's needs are not obvious in Kenya. Without an IEP, the unique special need for the learner will not be made transparent. Philosophical notion of inclusion holds the view that interaction between the learner and his or her socio-ecological environment facilitates or hinders his or her educational development (Peters, 2007).

In Kenya, Persons with Disabilities Act of 2003 aims to ensure that persons with disability issues and concerns are mainstreamed. The Act also provides that no person or learning institution shall deny admission to a person with a disability to any course of study by reason only of such disability, if the person has the ability to acquire substantial learning in that course. Since Kenya

embraced the Persons with Disabilities Kenyan Act of 2003 it has since attempted to adopt inclusive learning practices (Ministry of Education, 2008). Thus, this study attempted to examine the effects of online learning strategies on persons with disabilities with reference to selected universities in Kenya.

2. Methodology

The study adopted a descriptive survey design. According to Creswell (2009), descriptive survey design provides a qualitative or numeric description of trends, attitudes, or opinions of a study population through a sample population, which was essential for achievement of this study. In addition, this design was selected due to its suitability as it is commonly used in preliminary and exploratory studies (Kothari, 2010). The design also allowed the researcher to collect data, summarize, present and interpret it for the purpose of making concrete generalizations and suggestions for further research.

The target population consisted of 1200 students with disabilities in four university campuses in Kakamega town. According to Kerlinger (2004) an ideal sample should be between 10% and 30% of the target population depending on the purpose of data to be gathered and analyzed. The study used a sample of 150 subjects that took part in the study. Since the target population was heterogeneous, stratified and simple random sampling techniques were employed. Purposive sampling was also used to ensure representation by participants from all the five university campuses.

Data collection was by means of a questionnaire. The questionnaire had both open and close ended items. Pilot testing of the instrument was done by administering the questionnaires to 10% of the total sample size. Validity of the research instrument was determined through content validity while reliability was measured by use of Cronbach's alpha. A score of 0.729 was attained thereby qualifying the research instrument as acceptable and reliable. Descriptive statistics were used to analyze the data. Quantitative responses based on Likert scale were coded in the computer using Statistical Package for Social Sciences (SPSS) version 21. Processed data were then presented using frequencies, percentages, mean and standard deviations; and summarized in Tables. Qualitative data that were collected through open ended questions were first classified on the basis of common attributes then tallied to obtain statistical frequencies, tabulated and finally analyzed using descriptive statistics. According to Kothari (2010), this helps to collapse large volume of qualitative data in numerical form for ease of statistical interpretation. The researcher also observed ethical and legal issues in research like the principle of confidentiality, anonymity, and acknowledgement of other people's input throughout the whole study.

3. Results

3.1 Demographic characteristics of the population

The study sought to determine the gender of the study respondents. Nearly two thirds (65%) of the respondents were male and the remaining 35% of them were female. This shows a good representation by gender.

The age bracket of the study participants was also established by the study. The age brackets included: 17-25 years, 26-34 years, 35-43 years, and 44 and above years. Over a two thirds (72%) of the study respondents were between the age group of 17-25 years old. Another 17% of them were aged between 26-34 years. The remaining 11% were above 34 years. This implies that majority of students with disabilities in Universities are below 25 years.

3.2 Effects of Online Learning on Students

The researcher collected data from the respondents regarding the effect of online learning to students with disabilities. The data was collected on a five - point Likert scale. The variables that had a mean close to 3.0 represented 'agree' while those, which had a mean close to 2.0, represented 'disagree'. Standard deviation was used to indicate the extent of variability of the responses. A standard deviation of less than 1.0 shows low variability while standard deviation with 2.0 and above shows high variability among the responses. Table 1 shows the rates of the study participants' responses on a Likert-scale.

Table 1

Effects of online learning on students

Perceived effects of online learning	Frequency	Mean	Std. Dev.
E-learning helps to accomplish tasks more quickly	120	1.13	0.83
E-learning enhances efficiency	120	1.12	0.84
E-learning allows for interaction with other students	120	3.72	1.07
E-learning increases interaction with the lecturer	120	1.63	1.06
E-learning provides flexibility of undertaking studies	120	1.07	0.97
E-learning allows learning at ones convenience	120	3.72	1.11
E-learning makes it easy to become competent	120	3.94	0.98
E-learning makes it easy to do what one want	120	1.91	0.98

As reflected by the study findings shown in Table 1, the study respondents disagreed that use of online learning enabled them to accomplish tasks more quickly (M=1.13) and does not enhance their efficiencies as students (M=1.12).

The respondents agreed that use of online learning allowed them to interact with other students and work together on assignments (M=3.72) but denies them opportunity to interact with teachers and get assisted within reasonable time frames (M=1.63). Further the study found that the use of online learning was inflexible faced with internet connectivity failures (M=1.07), although the students could learn in the most convenient learning style at anytime, anyplace and at their own pace (M=3.72).

On ease of learning, the respondents agreed it was easy to become competent by the use online learning (M=3.94). However, the respondents reported that it was not easy to do what one need using online learning model due to limited access to efficient internet connections (M=1.91).

3.3 Strategies for facilitating E-learning

The respondents also provided information on the availability of strategies and enabling environment to facilitate E-learning by students with disabilities in the universities using a five - point Likert-scale. The variables that had a mean close to 3.0 represented 'agree' while those, which had a mean close to 2.0, represented 'disagree'. Standard deviation was used to indicate the extent of variability of the responses. A standard deviation of less than 1.0 shows low variability while standard deviation with 2.0 and above shows high variability among the responses. The data were analyzed using mean and standard deviation as shown in Table 2.

Table 2

Strategies for facilitating E-learning

E-Learning facilities	Frequency	Mean	Std. Dev
E-learning facilities in my university are adequate	120	2.67	1.24
ICT staff in my university are always available to help students with disabilities	120	2.54	1.27
E-learning facilities in my university are always available to disabled students	120	2.41	1.23
My university provides all students with equal opportunity to access E-learning	120	2.84	1.23
Students with disabilities are supported to access E-learning model	120	2.71	1.22
Academic staff in my university are trained on use of e-learning model	120	3.18	1.20
My university has provided special ICT facilities for students with disabilities	120	2.92	1.33
E-learning environment in my university is user friendly with students with disabilities	120	2.86	1.25
Lecturers provide support to students with disabilities to access E-learning facilities	120	3.12	1.13

On online learning infrastructure, the respondents were in agreement that Information Communication Technology (ICT) facilities to assist students were adequate (M=2.67). The respondents agreed that ICT staff in the university were always available to help students with disabilities to access e-learning (M=2.54). However, the respondents indicated that E-learning facilities are not always available when needed (M=2.41) in the institutions by disabled students.

On institutional policies, the respondents were affirmative that the institutions provided equal opportunities to access e-learning to all students (M=2.84), trained students with disabilities on access to e-learning model (M=2.71) and even trained the lecturers who facilitate the e-learning model (M=3.18).

On provision of e-learning facilities to students with disabilities, the respondents agreed that the university management had provided special ICT facilities for students with disabilities (M=2.92). Also the respondents were confirmatory that e-learning environment in the university is user friendly to students with disabilities (M=2.86) and also Lecturers provided support to students with disabilities to access e-learning facilities (M=3.12).

4. Discussion

The study found that the respondents disagreed that use of online learning enabled them to accomplish tasks more quickly while on interactivity; the respondents agreed that use of online learning allowed them to interact with other students and work together on assignments. However, online learning denied them opportunity to interact with teachers and get assisted within reasonable time frames. These findings concur with the assertion made by Borstorff and Lowe (2007), that e-learning enables student at higher learning institutions to obtain their education alongside pursuing their personal goals and maintaining their study without a need to attend classes or being subjected to a rigid learning schedule. However, the findings are in disagreement with a study conducted by Kennedy and Geoffrey (2012) that found out that majority of students believe that their results would improve with e-learning implementation. This could be attributed to student's familiarity with online learning system used in the Universities.

The study also found that e-learning facilities are not always available to disabled students whenever they required them in the institutions. This shows that the facilities were not adaptive to learners with disabilities. This finding agrees with a study conducted by Collins, Kennedy and Geoffrey (2012) that found, e-learning implementation in developing countries is inefficient due to costs and poor internet connectivity especially in institutions of higher education. Thus, the Universities should lobby for required resources from their partners in order to ensure effective online learning among students with disability.

On institutional policies, the respondents agreed that higher learning institutions provided opportunities for e-learning or trained students with disabilities on access to e-learning model and even trained the lecturers to facilitate the e-learning model. The participants' responses were interpreted to mean that institutional policies on implementation of ICT for e-learning model are not clearly emphasized in the universities. These findings agreed with those of Mumtaz (2000) and Elloumi (2004) who found out that training and availability of technology is the best predictor of technology use.

From the study findings, the university management had not provided special ICT facilities for students with disabilities to use. Further, it was clear that e-learning environment in the universities was not user friendly to students with disabilities. These findings contradicted a claim by Liu and Wang (2009), that management in any learning institution supported integration of technology in teaching and learning by empowering both the staff and students through capacity building. This could be attributed to the region or nation where the studies were carried out; in developed nations ICT management in higher learning institutions is much advanced than developing in nations.

5. Conclusion

The overall results of the study shows that majority of the students are of the view that online learning is effective in relation to student interactions but denies them opportunity to interact with lecturers frequently. The model enables students to accomplish tasks, is convenient and easy to achieve competence. However, it is inflexible and restrictive due internet connectivity failures.

This study also emphasize the need for higher institutions of learning to focus on empowering students with various forms of disabilities to access online facilities with ease. To improve the use of online learning the university management should direct adequate resources to technological facilities and institutional policies on ICT use in the universities. Further research should be conducted on best practices online learning that is inclusive for all students in institutions of learning.

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