E-Learning and Disability Mainstreaming

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Abstract
The study sought to establish the determinant of disability mainstreaming in e-Learning in Kenya School of Government, Kenya. The independent variables of the study were: Accessibility to Technology, Management Support, Technical Competencies and Mode of Delivery and the dependent variable was Disability Mainstreaming in e-Learning. The study was conducted in the Kenya School of Government. The study employed a Cross-Sectional Descriptive Research Design also known as statistical research and the population was sampled through stratified random sampling. Structured questionnaires and observation schedules were used to collect data. Data gathered was analyzed and presented using descriptive statistics, processed by Microsoft SPSS Version 20.0 and presented using graphs, pie charts, tables and percentages. The study reviewed literature on the dependent and the independent variables of the study Results of this study indicated that Accessibility to Technology, Management Support, Technical Competencies and Mode of Delivery determined Disability Mainstreaming in e-Learning .The need for management support, budgetary allocation and faculty empowerment was found critical and recommended in the study.
Key Words: *e-Learning, Learners with Diverse Needs, Disability Mainstreaming, Persons with Disabilities(PWDs), Synchronous, Asynchronous.*

Introduction

E-learning or electronic learning is becoming a major and leading mode of distance learning. It has become a popular way of learning in the world and it's predicted that the world market for e-learning would exceed 60 billion USD by 2020. (Fichtenet et al, 2009) Majority of users of e-learning access the internet for education, training or school work. e-Learning refers to a range of ICT used by facilitators when teaching courses entirely in classroom, entirely online or a

combination of both. E-learning includes (but not limited to) use of the internet (Course web pages, lecturers delivered live,CD-ROMS and presentations tools -PowerPoint).
As more and more learners get engaged to e-Learning curriculum, course developers, facilitators and other key stakeholders are finding that the enrolment of learners is becoming increasingly diverse. Among these learners demanding and accessing education through e-Learning a certain percentage will be students with diverse learning challenges.
Such learning challenges will include visual, hearing, limited language (English proficiency) and other challenges related to mobility and others with multiple disabilities. The stakeholders of e-learning have a great opportunity to minimize any challenges that are related to e-learning and ensure that the concerns of Persons With Disabilities and other diverse learners are addressed .This calls for the need to embrace disability mainstreaming in e-Learning.

Statement of the Research Problem

Despite the various government intervention strategies on PWDs and especially the needs of learners with diverse needs, there still remains a gap on how the various concerns for such learners can best be addressed and especially through eLearning. Many PWDs have failed to access education and training through e-Learning due to various barriers ranging from environmental, technological and attitudinal factors. The current situation is that many learners with diverse needs have been left out in education and training thereby experiencing unemployment, under employment, discrimination, stigma and social exclusion. The ideal scenario is that PWDs need to enjoy equal rights and opportunities in the society and become actively engaged in social, economic and political spheres and contribute towards the attainment of Kenya Vision 2030 and the Sustainable Development Goals. The study therefore seeks to address the gap between the current scenario and the ideal situation by exploring the key factors influencing disability mainstreaming in e-Learning.

e-Learning and Disability Mainstreaming

According to United Nations report on Persons with Disabilities, PWD's constitute approximately 650 million persons of the total global population, that is, 10% of the world population. It's estimated that 80% of PWDs live in developing countries such as Kenya. An indication that all of us are affected either directly or indirectly. In the past, Society has viewed PWDs as objects of charity, medical treatment and social protection. Majority of PWDs have continued to face high rates of illiteracy, unemployment, underemployment, stigmatization, discrimination & lower occupational mobility. UN Convention on the rights of PWDs provides a paradigm shift and views PWDs as persons capable of claiming their rights, making decisions on free and informed consent & being active members of the society. The Kenya government through the Kenya Constitution 2010, Article 54 stipulates the rights of PWDs, and these rights apply also to learners with disabilities. This has led to establishments of systems and structures to ensure implementation of such concerns of PWDs.

Disability mainstreaming in Kenya has been embraced as a strategy for making PWDs concerns, experiences an integral dimension of the design, implementation, monitoring and evaluation of policies & programmes in all political, economic and societal spheres so that individuals and learners with disabilities benefit equally and inequality is not perpetuated. The ultimate goal is to achieve equality (GOK, 2003). It's not about creating separate programmes but inclusion into existing programmes. This means that the needs of disadvantaged people need to be taken into account. It is a process of assessing the implications for disability people of any planned action, including legislation, policies and programmes, in all areas and levels. It entails incorporating the concerns and situations of learners with disabilities into all actions including e-learning. All learning institution need to take into account special needs of learners with challenges , use of facilities, no person should be denied admission on account of his/her disability. To this end, Kenyan government has taken various intervention strategies towards this worth cause by signing of Performance Contract between organization leaders and government: formulating a disability mainstreaming strategies, establishing disability mainstreaming committees, training staff in disability awareness & provision of services to PWDs and submitting biannual report to National Council for PWDs.

The Conceptual Framework

The study conceptualized that Accessibility to Technology, Management Support, Technical Competencies and Mode of Delivery Influences Disability Mainstreaming in eLearning. This relationship is shown in Figure 1.

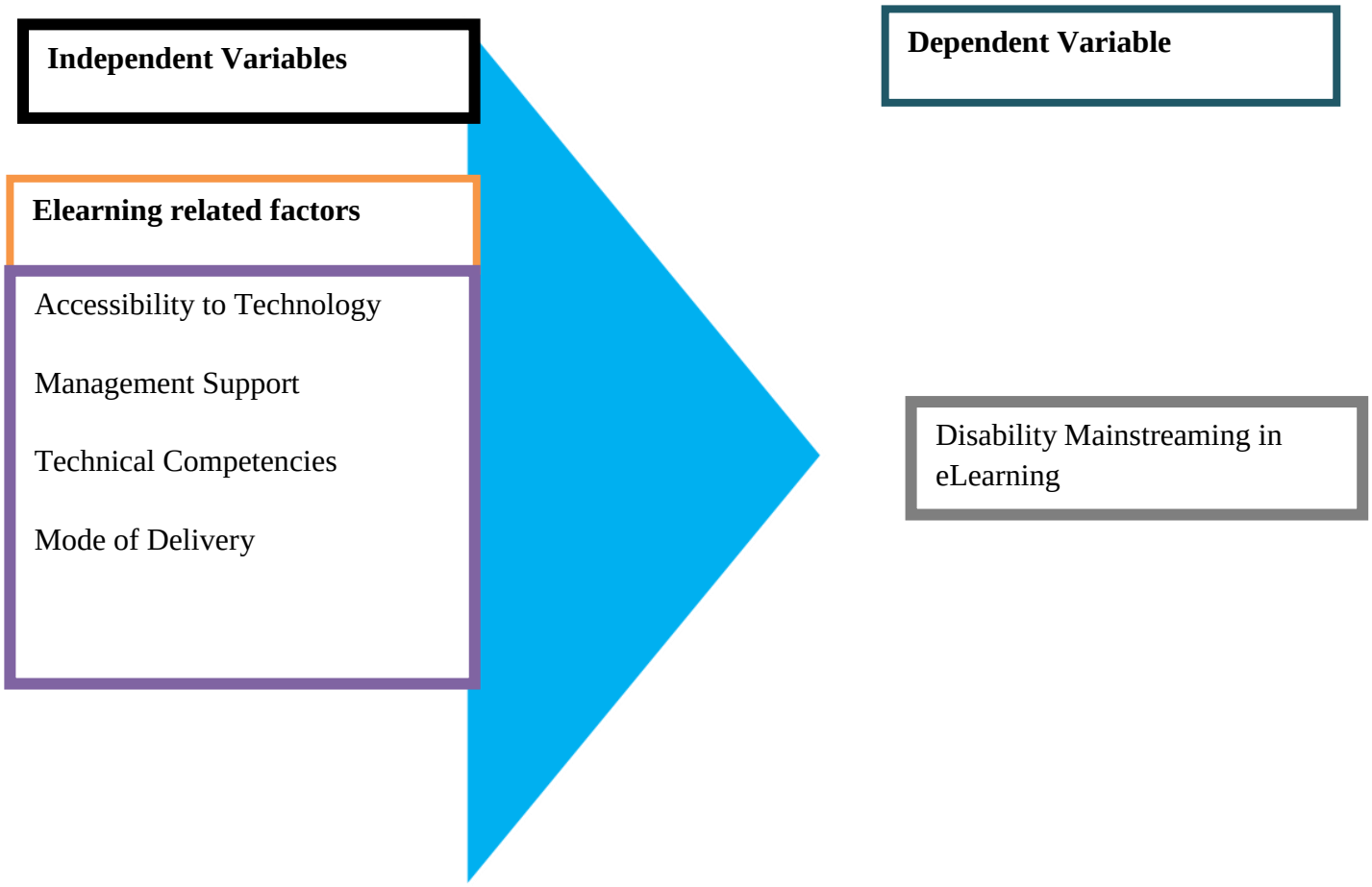


Figure 1: Conceptual Model

The Specific Objectives

1) To establish how **Accessibility to Technology** influence Disability Mainstreaming in e-Learning
2) To determine how **Management Support** influence Disability Mainstreaming in e-Learning
3) To determine how **Technical Competencies** influence Disability Mainstreaming in e-Learning
4) To investigate how the **Mode of Delivery** influence Disability Mainstreaming in e-Learning

The Research Questions

1) How does **Accessibility to Technology** influence Disability Mainstreaming in e-Learning?
2) How does **Management Support** influence Disability Mainstreaming in e-Learning?
3) How do **Technical Competencies** influence Disability Mainstreaming in e-Learning?
4) How does the **Mode of Delivery** influence Disability Mainstreaming in e-Learning?

Methodology

The study employed a Cross-Sectional Descriptive Research Design also known as statistical research and the population was sampled through stratified random sampling to get a sample size of thirty five (35). Structured questionnaires and observation schedules were used to collect data. Data gathered was analyzed and presented using descriptive statistics and analyzed using Microsoft SPSS Version 20.0 and presented using graphs, pie charts and tables.

LITERATURE REVIEW
Disability Mainstreaming

The variable was studied as a criterion or outcome variable (dependent variable - Cooper & Schindler, 2009; Kumar,2009; Kothari;2009).The variable was measured, predicted and monitored and it was expected to be affected by the manipulation of the independent variables of the study, namely, accessibility to technology , management support, technical competencies and mode of delivery. There are various models in Disability Mainstreaming. This study explored the mainstreaming and the Rights Based Model. The mainstreaming model (Jones and Webster, 2004) has five (5) interconnected elements; Organizational commitment (Core); Sensitization; Workplace mainstreaming; Programme mainstreaming which entails inclusiveness, equitable, non-discriminatory, and Policy mainstreaming. The need for meaningful involvement of people directly affected and gender must also be incorporated as part of every element as shown in Figure 2.

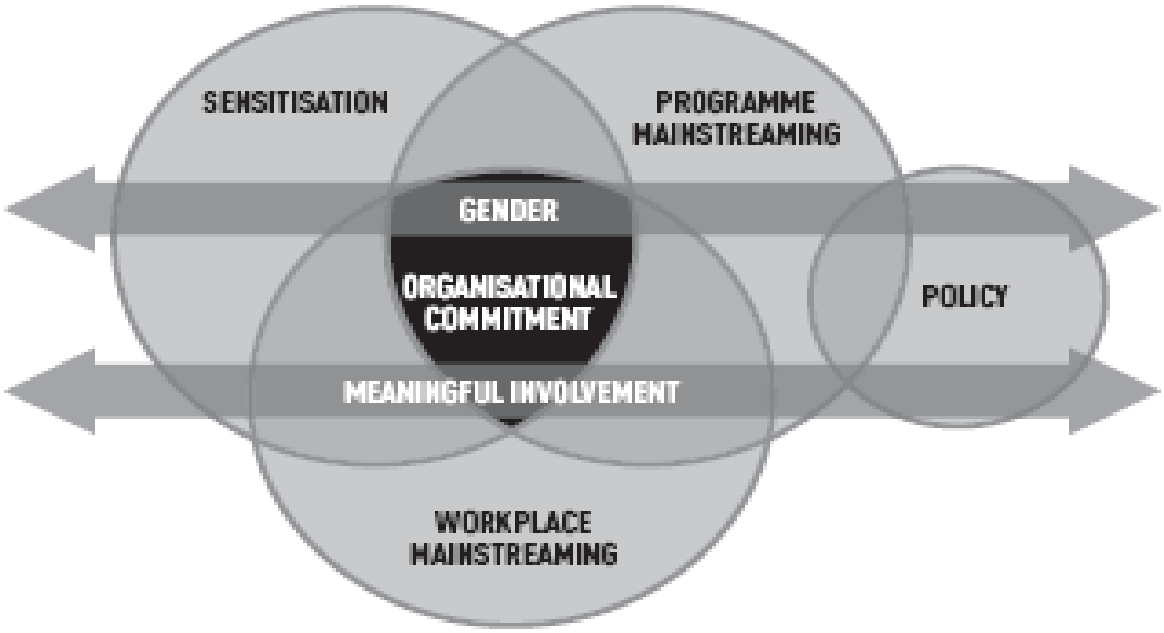


Figure 2: Mainstreaming Model

Source: (Daniel Jones and Li Webster, 2004- A Handbook on Mainstreaming Disability)

The Social (Rights Based) model puts emphasis on letting people with a disability decide what is best for them; instead of having non-disabled people take that decision for them. Rights-Based approach is a shift from a development approach based on charity and voluntarism to one that recognizes that all people enjoy equal rights and as such have a right to adequate services, fair treatment by the State and a voice in everything that affects them. This is possible through structuring the e- Learning environment to ensure that they accommodate the concerns of learners with diverse needs. This will have the benefit of leveling the playing ground for those experiencing diverse challenges thus making e-Learning more accessible and flexible for all learners.

E-learning can be used as a strategic tool to assist in engaging and enhancing the learning opportunities for learners with disabilities. Such students need to be engaged with diverse e-Learning applications including a global perspective in order to enable and assist them in exploring the possibilities of pursuing not only work and training within one's country but also globally or virtually. e-Learning can also be used as a strategic tool for breaking down current educational barriers faced by people with disabilities in educational institutions.

In a study carried out in Canada, all professors interviewed indicated that they had taught at least one student with disability during the last three years where they used some form of e-learning. The students interviewed indicated the various disabilities/impairments among students: Learning disabilities (40%); hearing impairments (13%);difficulty using hands/arms (12%); visual impairments (low vision,11%,); speeds or communication impairment (3%); totally blind (1%);and mobility impairments/wheelchair user (23%).

Accessibility to Technology

Griffins (2004), describes assistive technology as any technology that people with disabilities use to help them in their daily lives whereas accessibility to technology is when people with disabilities can use it easily. Access to electronic and information technology can help students with disabilities to prepare for and succeed in life, such access has the potential to maximize independence, productivity and participation in academic programs and employment. In addition, for those who have the interest and aptitude, advanced technology skills can open doors to high tech career fields that were once unavailable to people with disabilities. (Rowland, 2002)

Rowland (2002) specifies that technology can help students with disability to: Maximize independence in academic and employment tasks; Participate in classroom discussions; Gain access to peers, mentors, and role models; Self-advocate; Gain access to the full range of educational options; Participate in experiences not otherwise possible; Succeed in work-based learning experiences; Secure high levels of independent living; Prepare for transitions to college and careers; Work side-by-side with peers; Master academic tasks that they cannot accomplish otherwise; Enter high tech career fields; and Participate in community and recreational activities.

There are three (3) goals that implementers of any e-learning programme should meet; all individuals with disabilities have access to technology that promotes positive academic and career outcomes; People with disabilities learn to use technology in ways that contribute to positive postsecondary academic and career outcomes and self-determined lives and there is a smooth transition of availability of technology for all people with disabilities as they move from secondary to postsecondary to career environments.

The creation and promotion of universal design of electronic and information technology facilitates learners with disabilities to gain access to empowering technology and selection of appropriate technology and provide ongoing support for students with disabilities at various levels in the educational and career preparation process. The role of parents, educators and service providers in encouraging students with disabilities to use technology to self-advocate, perform daily tasks independently, and move toward self-determined live was found to be core.

Management Support

Several approaches are been put in place by the management to address the concerns of learners with diverse needs. A recent trend evident in e-Learning is shifting the focus of services to learners with diverse need. This shift is seen as encompassing several advantages. One is improving integration for learners with disabilities. A second advantage is that such approaches mobilize existing support networks in order to sustain long-term needs of learners. In other words, the economic and practical difficulties of achieving ongoing support for learners with severe disabilities are shared, in part, by having management and government provide it (Rhodes, Sandow, Mank, Buckley, & Albin, 1991).

Yet a third advantage is that it encourages the stakeholders to respond to the needs of learners with disabilities in a similar manner that they respond to the needs of other diverse groups in e-Learning. Thus, this approach promotes the view that learners with disabilities should not be seen as necessarily unique in requiring eLearning accommodations (Fabian & Luecking, 1991).The management needs to assess the implications for learners in institutions that are enabled but differently of any planned action, including legislation, policies and programmes, in all areas and levels. It is about incorporating the concerns and situations of learners with disabilities into all actions including e-Learning. Management need to embraces infrastructure adjustments to accommodate e-Learning needs for learners with diverse needs, develop and implement e-Learning supportive policies

Technical Competencies

According to the Kenya Constitution (GoK, 2010) article 54, a person with any disability is entitled to access educational institutions and facilities for persons with disabilities that are integrated into society to the extent compatible with the interests of the person; to use Sign language, Braille or other appropriate means of communication; and to access materials and devices to overcome constraints arising from the person's disability. e-Learning can promote the inclusion of students with various disabilities (Di Iorio, et. al, 2006).

Online courses provide enhanced opportunities for people who, because of climate, health, transportation or physical accessibility, experience barriers to attending classroom-based courses. Similarly, in traditional classes students who have print impairments can access course notes and handouts on the course website without assistance, so long as these are designed to be accessible. (Debenham, 2002).

Bissonnette, 2006 posits that a key concern is that faculty and individuals accountable for supporting and implementing e-learning within postsecondary institutions, in the rush to integrate technology into teaching, fail to think about the accessibility needs of students with various disabilities. For example, those in charge of supporting and deploying e-learning generally do not confirm ahead of time whether newly purchased academic software is compatible with adaptive software that reads what is on the screen to individuals with print impairments.

Ezziane, 2007 indicated that during the past few years, skill in using ICTs has become mandatory in postsecondary education and the workplace. A recent investigation shows that computer use on the job is associated with higher salaries for employees both with and without disabilities (Canadian Council on Social Development, 2004), and that for people with disabilities, this is especially important (Kruse, Krueger, & Drastal, 1996). Abrami et al. (2006), who recently showed how important e-Learning initiatives are in Canadian postsecondary education, also noted that very little is known about the e-Learning needs and concerns of students with disabilities.

Mode of Delivery

There are various barriers to inclusion for learners with disabilities in e-Learning, such barriers include: Negative attitude towards PWDs; Physical barriers; Lack of information some to do with use of brailles or sign language interpreters; Poverty and lack of education. For e-learning initiatives to succeed, organizations and educational institutions must understand the benefits and limitations of different e-Learning techniques and methods.

Research can support practitioners by studying the impact of different approaches on e-learning's effectiveness. Two basic types of e-learning are commonly compared, asynchronous and synchronous.

Until recently, e-learning initiatives mainly relied on asynchronous means for teaching and learning. However, recent improvements in technology and increasing bandwidth capabilities have led to the growing popularity of synchronous e-Learning. Asynchronous e-learning, commonly facilitated by media such as e-mail and discussion boards, supports work relations among learners and with teachers, even when participants cannot be online at the same time. It is thus a key component of flexible e-learning. In fact, many people take online courses because of their asynchronous nature, combining education with work, family, and other commitments. Asynchronous e-Learning makes it possible for learners to log on to an e-learning environment at any time and download documents or send messages to teachers or peers. Students may spend more time refining their contributions, which are generally considered more thoughtful compared to synchronous communication.

Synchronous e-Learning, commonly supported by media such as videoconferencing and chat, has the potential to support e-learners in the development of learning communities. Learners and teachers experience synchronous e-Learning as more social and avoid frustration by asking and answering questions in real time. Synchronous sessions help e-learners feel like participants rather than isolates

e-Learning has got various benefits to learners including learners with diverse needs, such as: availability of online course notes; helping in understanding course content; Allows use of adaptive technology; Saves money and time; helping in understanding course content and Ability to own space or learn from work/home. Implementation of e-Learning has various challenges some related to the learners with diverse needs and others related to facilitators of e-Learning. Such challenges include: Technical difficulties or lack of knowledge of how to use e-learning for diverse learners with Learning disabilities; Inaccessibility of websites/course managements systems specific for learners with mobility or physical challenges; Poor use of e-Learning by professionals/facilitators some experiencing difficulty in connecting to website/course management systems; Inaccessibility of audio/video materials for learners with hearing impairement;Inaccessibility of course materials & notes/website/Content Management System and materials through PDF specific for Visually impaired and Inflexible time limits to complete activities built into online exam and assignment for urgency of the assignments ((Canadian Council on Social Development, 2004).

RESEARCH FINDINGS AND DISCUSSIONS

This research findings and discussions presents the analysis and presentation of the results on the demographic information of the respondents involved in the study, outlines the influence of the studied independent variables: accessibility to technology, management support ,technical competencies and mode of delivery and on disability mainstreaming in e-Learning The collected data was analyzed by use of descriptive statistics where mean values, standard deviation, and proportions were assessed and presented in graphs, pie charts and tables.

General Information of the Respondents

The information shows the observed key characteristics of the respondents such as their academic qualifications, knowledge on e-Learning and disability mainstreaming and teaching experience.

Age of Respondents

The study enquired about the age of the identified respondents and the outcomes are as presented in Figure 3.Majority of respondents were in the age bracket of 41-50 years while the least were in the age bracket of 21-30 years this being in their youthful age.

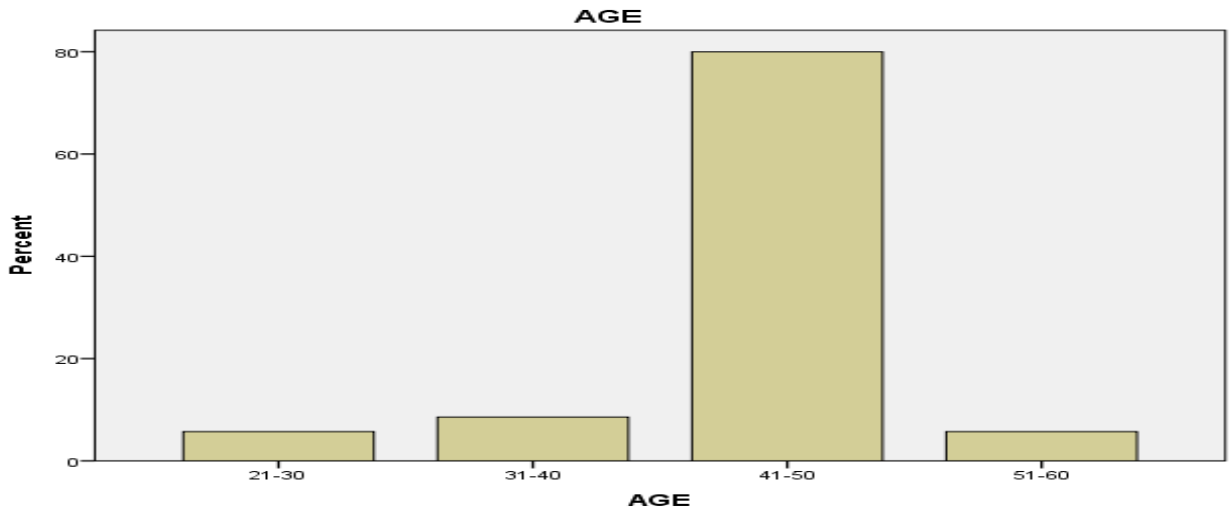


Figure 3: Age of respondents

Highest Academic Qualification

Table 1: Highest Academic Qualification

Highest Academic Qualifications	Frequency	Percentage	Cumulative Percentage
Degree	2	5.7	5.7
Masters	31	88.6	94.3
PhD	2	5.7	100.0
n	**35**	**100.0**	

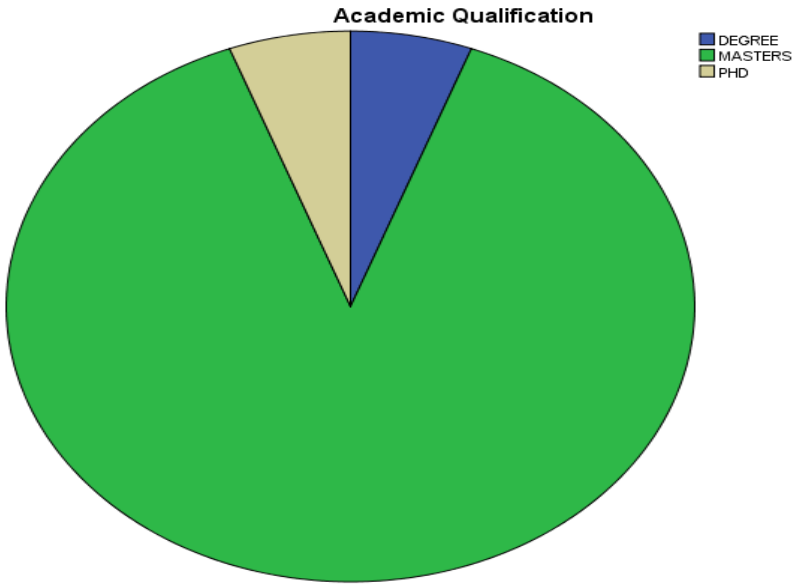


Figure 4: Highest academic qualification

Cumulatively 95% (33) of the respondents possessed a masters and PhD as tabulated in Table 1 and the least had a degree 5 %(2). This is a positive sign as it demonstrates that the school had faculty members with requisite skills and knowledge to train participants.

Gender of Respondents

Table 2: Gender

Gender	Frequency	Percentage	Cumulative Percentage
Female	8	22.9	22.9
Male	27	77.1	100.0
n	**35**	**100.0**	

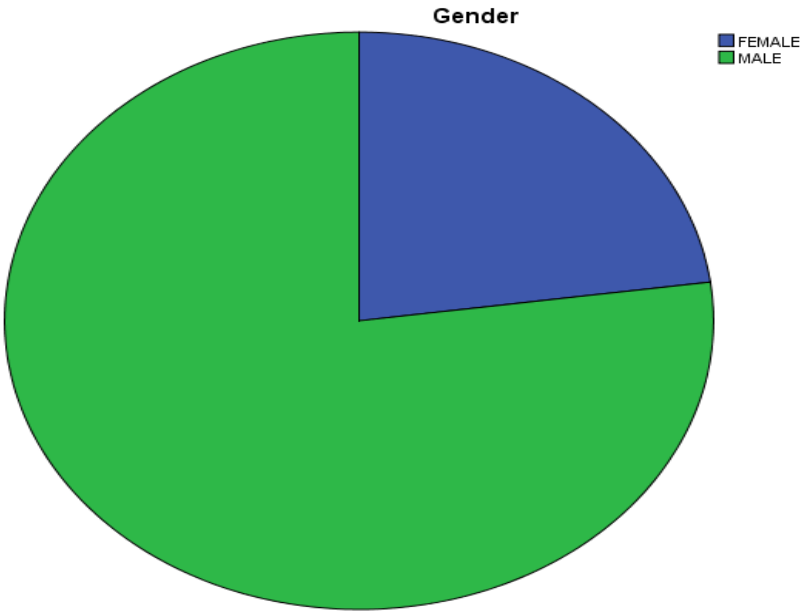


Figure 5: Gender Representation

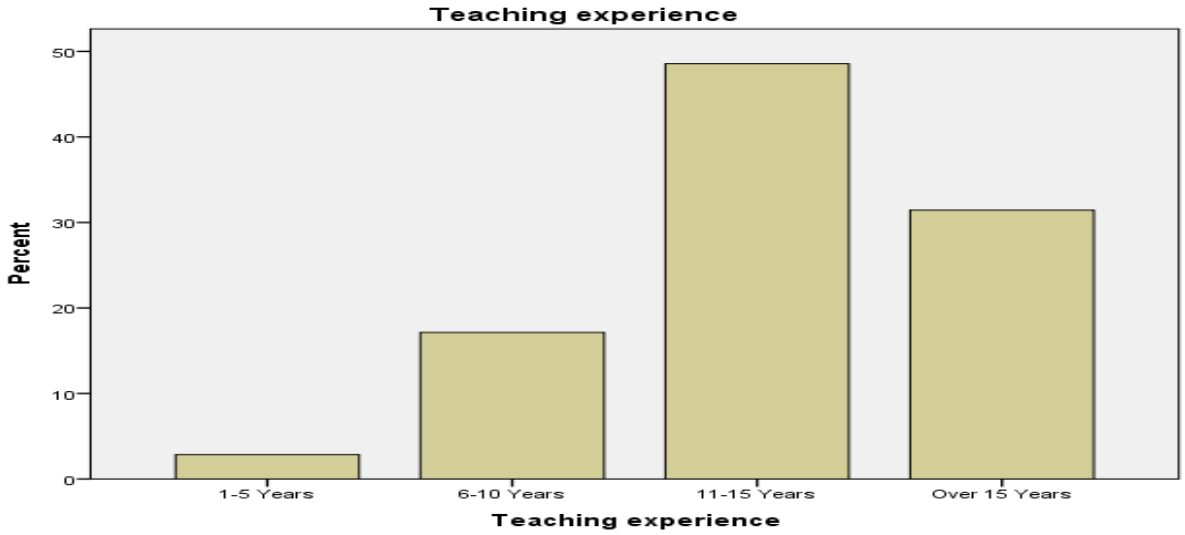
The results in Table 2 shows the gender of the faculty members, 77.1% (27) were of the male gender and 22.9%(8) represents faculty of the female gender. This gender representation is in line with Kenya Constitution 2010 which stipulates that any positions and appointments in the public service should not be more than two thirds of the same gender.

Teaching Experience

Table 3 shows the teaching experience of the respondents .The study findings indicated that majority, 48.6% (17) of the faculty members had 11-15 years teaching experience while 2.9%(1) had 1-5 years teaching experience. When the respondents were asked to rate their knowledge on elearning and disability mainstreaming on where it was high, Moderate or low, over 60% indicated that it was low.

Table 3: Teaching Experience

Number of Teaching Years	Frequency	Percentage	Cumulative Percentage
1-5 Years	1	2.9	2.9
6-10 Years	6	17.1	20.0
11-15 Years	17	48.6	68.6
Over 15 Years	11	31.4	100.0
n	**35**	**100.0**	



Specific Objective 1:

The first objective of the study was to establish the influence of accessibility to technology on disability mainstreaming in e-Learning. Various indicators of existence on accessibility to technology in the school were applied. These included; access to the Internet, technology that aids writing for learners with diverse needs, software that reads on the screen, adaptable mouse that aids learners with diverse needs and refreshable Braille displays for learners with visual impairment. Respondents commented on their extent of agreement on these technologies presented to them on a Likert scale where: (1) presents strongly agree; (2) agree; (3) neutral; (4) disagree; (5) strongly disagree. The outcomes are as shown in Table 4.

Table 4: Accessibility to technology and Disability Mainstreaming in e-Learning

Statements on Accessibility to Technology	n	Min	Max	Mean	Std
I connect to the internet through institutional LAN	35	1	1	1.00	0.000
I use personal gadgets to connect to the internet	35	1	5	1.91	1.314
I rarely have reliable internet connectivity	35	1	5	3.69	1.255
I have technology that aid in writing for learners with diverse needs	35	1	4	2.77	1.003
There are software that reads what is on the screen for learners with diverse needs	35	1	3	2.09	0.702
There are large screen monitors that aid learners with diverse needs	35	1	4	2.34	0.998
My organization has adaptable mouse that aid learners with diverse needs	35	2	5	2.97	0.985
There are refreshable Braille displays for learners with visual impairment	35	2	5	3.37	1.215
n	**35**				

From Table 4 it was evident that faculty members connect to the Internet through the institutional Local Area Network (LAN), this is so because the mean was 1 and the standard deviation was 0, which means all faculty members strongly agreed that they all connect to the internet through the institutional Local Area Network. On the question on whether the respondents had reliable internet connectivity the mean was 3.69 and a standard deviation of 1.255, an indication that the respondents felt that internet connectivity was a challenge to their day to day operations.

To determine whether the respondents had devices that aided in writing for learners with diverse needs the responses, it was observed that there was a mean of 2.97 and a standard deviation of 0.985. This was an indication that there was limited accessibility to technology that aided learners with diverse needs. The findings of this study agree with the scholarly works of Rowland, 2002 that held that appropriate technology can help students with disability to: Maximize independence in academic and employment tasks; Participate in classroom discussions; Gain access to peers, mentors, and role models and enhance self-efficacy.

Specific Objective 2:

The study aimed at establishing the influence of management support on disability mainstreaming in e-learning. Various indicators of existence of management support in the institution were applied. These included: budgets for e-learning programmes, concern and plans for e-learning programmes for all learners including learners with diverse needs, implementation of e-learning programmes for learners with diverse needs, evaluation of e-learning programmes including programmes for learners with diverse needs, partnering with other organizations for continuous improvement of e-Learning programme for learners with diverse needs, embracing infrastructure adjustments to accommodate e-learning needs for learners with diverse needs and developing and implements e-Learning supportive policies for learners with specific needs. Respondents commented on their extent of agreement on these indicators presented to them on a Likert scale where: (1) presents strongly agree; (2) agree; (3) neutral; (4) disagree; (5) strongly disagree. The outcomes are as shown in Table 5.

Table 5: Management Support and Disability Mainstreaming in e-Learning

Statements on Management Support	n	Min	Max	Mean	Std
The management budgets for e-learning programmes	35	1	4	2.63	0.910
The management is concerned and plans for e-learning programmes for all learners including learners with diverse needs	35	1	5	2.91	1.222
The organization implements e-learning programmes for learners with diverse needs	35	2	5	2.80	0.932
The management evaluates e-learning programmes including programmes for learners with diverse needs	35	2	5	2.83	0.954
Management partners with other organizations for continuous improvement of e-learning programme for learners with diverse needs	35	1	4	2.37	0.808
Management embraces infrastructure adjustments to accommodate e-learning needs for learners with diverse needs	35	1	4	2.49	1.147
Management develops and implements e-learning supportive policies for learners with diverse needs	35	1	5	2.89	1.255
n	**35**				

As presented in Table 5, it was observed that the management partners with other organizations for continuous improvement of e-learning programme for learners with diverse needs at a mean of 2.37 and standard deviation of 0.808. The close collaborative relationship between two or more organizations with the intent of accomplishing mutually compatible goals that would be difficult for each to accomplish alone are key in elearning activities (Allen 2012; Pearce & Robinson, 2009)

However the study established that the management develops and implement programmes for learners with diverse needs at a mean of 2.89 and standard deviation of 1.255. There is need for the management to assess the implications for learners that are enabled but differently, of any planned actions, including developing legislation, policies and programmes, in all areas and levels (Fabian & Luecking, 1991).

Specific Objective 3:

The study also sought to establish the influence of technical competencies on disability mainstreaming in e-learning. Various indicators of existence of technical competencies in the institution were applied. These included: learners have the requisite skills and knowledge sets to use e-learning platforms, learners can comfortably access e-learning materials, facilitators have skills and knowledge to engage in e-learning application software for learners with diverse needs, facilitators have hands on experience on handling content management system, programme designers always design e-Learning programmes that address needs of diverse learners, programme designers involve stakeholders in designing e-Learning programmes for learners with diverse needs, and Programme designers have e-learning competencies. Respondents commented on their extent of agreement on these indicators presented to them on a Likert scale where: (1) presents strongly agree; (2) agree; (3) neutral; (4) disagree; (5) strongly disagree. The outcomes are as shown in Table 6.

Table 6: Technical Competencies and Disability Mainstreaming in e-Learning

Statements on Technical Competencies	n	Min	Max	Mean	Std
The learners have the requisite skill sets and knowledge sets to use e-learning platforms	35	2	4	2.89	0.718
The learners can comfortably access e-learning materials	35	1	4	2.43	0.917
The facilitators have skills and knowledge to engage in e-learning application software's for learners with diverse needs	35	1	3	1.83	0.618
The facilitators have hands on experience on handling content management system	35	1	5	2.09	1.197
The programme designers always design e-learning programmes that address needs of diverse learners	35	1	3	2.43	0.698
The programme designers involve stakeholders in designing e-learning programmes for learners with diverse needs	35	1	3	2.51	0.702
The programme designers involve programme designers with e-learning competencies	35	1	3	2.03	0.923
n	**35**				

As presented in Table 6, it was observed that most of faculty members felt that the facilitators had skills and knowledge to engage in e-learning application software for learners with diverse needs at a mean of 1.83and standard deviation of 0.618. However majority of the faculty members felt that the learners did not have the requisite skill and knowledge sets to use e-learning platforms at a mean of 2.89 and standard deviation of 0.718. The findings of this study concurs with research work of Bissonnette, 2006 who posited that a key concern in e-learning is that faculty and individuals accountable for supporting and implementing e-learning within postsecondary institutions, in the rush to integrate technology into teaching, fail to think about the accessibility needs of students with various disabilities.

Specific Objective 4:

The last objective of the study sought to establish the influence of the mode of delivery on disability mainstreaming in e-learning. Various indicators of existence on mode of delivery in the institution were applied.
These included: disability mainstreaming breaks barriers to learning in organizations, have a positive attitude towards learners with diverse needs, course participants prefer attending to lessons on an online platform, course participants prefer accessing learning through face to face interaction and that learners prefer the blended approach to learning. Respondents commented on their extent of agreement on these indicators presented to them on a Likert scale where: (1) presents strongly agree; (2) agree; (3) neutral; (4) disagree; (5) strongly disagree. The outcomes are as shown in Table 7.

Table 7: Mode of Delivery and Disability Mainstreaming in e-Learning

Statements on Mode of Delivery	n	Min	Max	Mean	Std
Disability mainstreaming helps break barriers to learning in organizations	35	1	5	1.83	1.098
I have a positive attitude towards learners with diverse needs	35	1	2	1.60	0.497
My students prefer attending to lessons on an online platform	35	1	5	3.53	1.225
My students prefer accessing learning through face to face interaction	35	1	4	2.11	0.932
My students prefer the blended approach to learning	35	1	5	2.31	1.051
n	**35**				

As presented in Table 7, it was observed that most of respondents agreed that the faculty had a positive attitude towards learners with diverse need at a mean of 1.60 and standard deviation of 0.497. The faculty felt that most participants of e-learning did not prefer attending to classes on an e-learning platform as exhibited by a mean of 3.53 and a standard deviation of 1.225. A study by Canadian Council on Social Development, 2004 supports the findings of this study that the majority of the participants of e-Learning preferred the face to face/ blended mode of

delivery as opposed to total e-Learning approach. Many learners take online courses because of their asynchronous nature, combining education with work, family, and other commitments. Synchronous and Asynchronous mode of delivery in learning has got its advantages and disadvantages to the diverse needs of learner. Synchronous e-learning, which is commonly supported by media such as videoconferencing and chat, has the advantage of supporting e-learners in the development of learning communities.

Learners and teachers experience synchronous e-learning as more social ,avoids frustration and is considered to be more interactive thereby creating room for asking and answering questions in real time. Synchronous sessions help e-learners feel like participants rather than isolates.Howver, to learners with diverse needs, Asynchronous e-learning approaches might be more ideal to learners with diverse needs than synchronous e-learning as it makes it possible for learners to log on to an e-learning platform at any time and download documents or send messages/assignments to teachers or peers. These learners with diverse needs may spend more time refining their contributions, which are generally considered more thoughtful compared to synchronous communication.

Benefits of e-Learning

The study also sought to establish the benefits of the e-learning programme to the institution. As indicated in Table 8, 11.4% (4) of the respondents stated that e-learning facilitate the institution reach the said 'unreachable' participants; 5.7 %(2) of the respondents felt that the programme facilitated flexibility in learning , 22.9%(8) pointed out that there is reduced paper work and 60%(21) felt that the e-learning mode of delivery enhanced revenue streams for the school.

Table 8: Benefits of e-Learning to the school

Benefits	Frequency	Percentage	Cumulative Percentage
Reaching the unreachable	4	11.4	11.4
Deploying flexible programmes	2	5.7	17.1
Reduced paper work	8	22.9	40.0
Increased revenue streams	21	60.0	100.0
n	**35**	**100.0**	

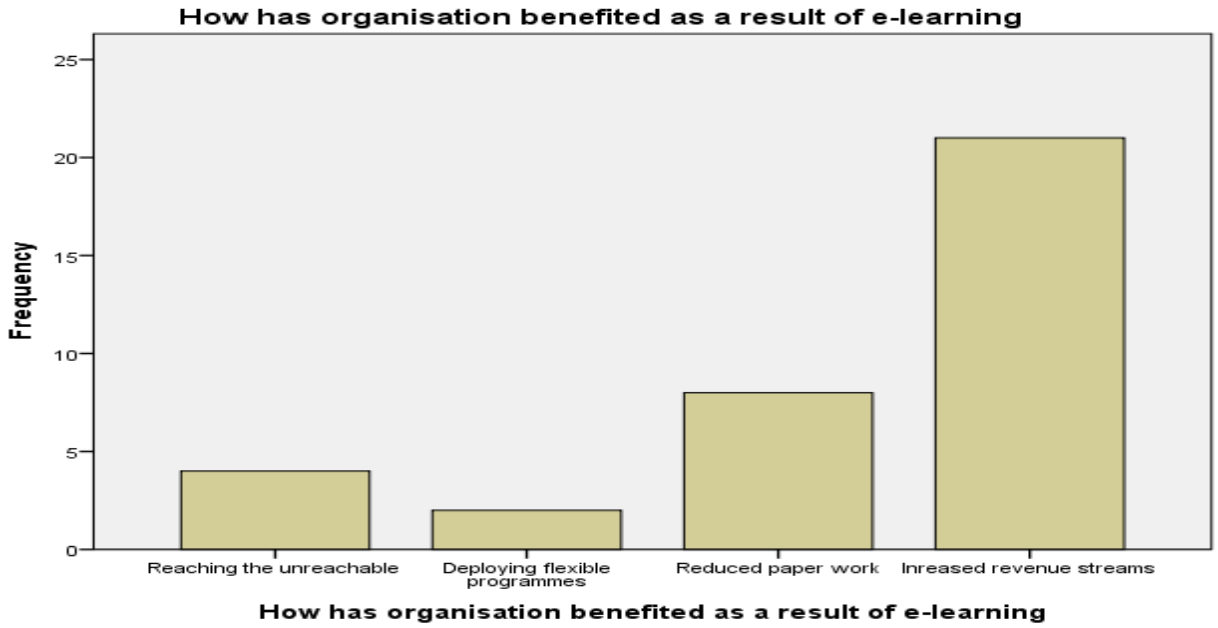


Figure 6: Benefits of E-learning to the School

Challenges of e-Learning in the School

The respondents cited the various challenges of implementing e-learning programmes: 28.6% (10) indicated that there was need to increase bandwidth in order to have fast internet connectivity. 45.7% (16) of the respondents had issues with the way content of various courses were developed. 14.3 % (5) noted that they were not aware that the e-learning could suit course participants with diverse needs. 11.4 % (4) of the respondents indicated that there was need for the management to support and embrace the e-learning programmes in the School.

Table 9: Challenges of e-Learning

Challenges	Frequency	Percentage	Cumulative Percentage
Bandwidth	10	28.6	28.6
Content Development	16	45.7	74.3
Inadequate Awareness	5	14.3	88.6
Management Support	4	11.4	100.0
n	**35**	**100.0**	

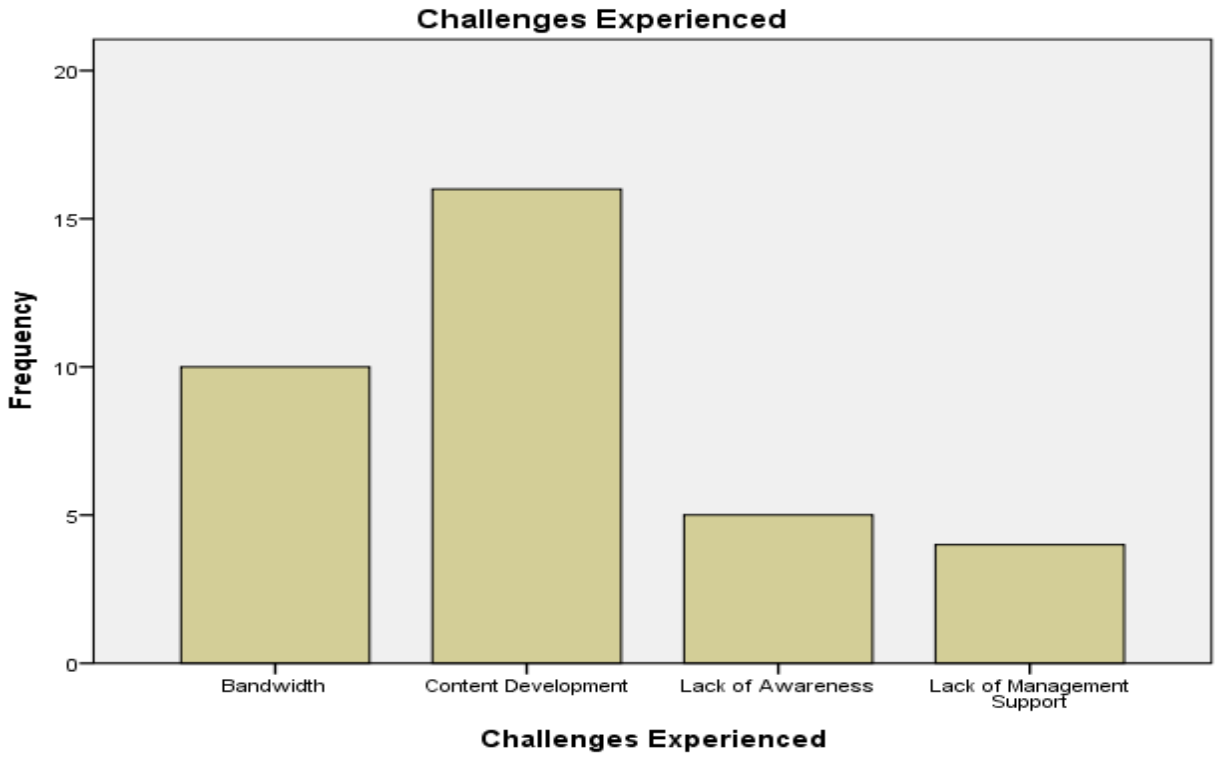


Figure 7: Challenges Experienced

Solutions to Challenges

As outlined in Table 10, the respondents suggested various solutions to address challenges to e-learning. 45.7% (16) of the respondents indicated that there was need to allocate enough monies in order to invest in the latest state of the art infrastructure to support e-learning.31.4% (11) of the faculty indicated that there was a need for the Staff to be empowered to handle e-learning programmes, 22.9% (8) of the respondents noted that the institution need to continuously undertake a training needs assessment to establish the entry behavior of learners with diverse needs in e-learning.

Table 10: Solutions to e-Learning Challenges

Solutions	Frequency	Percentage	Cumulative Percentage
Budgetary Allocation	16	45.7	45.7
Capacity Building	11	31.4	77.1
Training Needs Assessment	8	22.9	100.0
n	**35**	**100.0**	

CONCLUSIONS:

Specific Objective 1

It was evident that accessibility to technology influences Disability Mainstreaming in e-Learning this is demonstrated by the fact that majority of the respondents were agreeing to most questions touching on the availability or accessibility of the required hardware or software or internet services that would facilitate e-learning for learners with diverse needs.

Specific Objective 2

As observed from the study, Management Support is critical for the success of disability mainstreaming in e-Learning since the management have to draw the budget in support of the programme, craft policies that would ensure ease of implementing the programme and also source for partners and sponsors of the programme to ensure its successful implementation and sustainability of the same.

Specific Objective 3

From the study, technical competencies of the facilitators in terms of programme content design and determining the entry behavior of the learner with diverse needs had great influence to the implementation of e-Learning programmes. It was found out that the facilitators need to have the requisite technical know-how to facilitate e-Learning programmes. It was found critical that the content designers need to ensure that the content is packaged in a way that it facilitates ease of accessing and understanding by the learner with the diverse needs. It was found critical that the learner with the diverse needs be trained and empowered on the use of technology that would be of use while accessing the e-Learning platform.

Specific Objective 4

It was evident from the study that the mode of delivery used influenced disability mainstreaming in e-learning. It was established that face to face/ blended mode of content delivery was preferred by learners with diverse needs.

RECOMMENDATIONS

Specific Objective 1

The study recommends that the top management needs to include the needs of learners with diverse needs in the strategic plan with an emphasis on accessibility to technology on e-learning. Priorities need to be placed on installation of hardware and software that address the needs of learners with diverse needs

Specific Objective 2

The Kenya School of Government top management and specifically respective campuses need to develop, implement and monitor policies that are skewed towards e-learning programmes.

Specific Objective 3

The Kenya School of Government Top Management need to plan and empower the faculty on designing e-learning programmes and impact knowledge and skills on e-learning programmes. The school should undertake a training needs assessment to determine the entry behavior of learners with diverse needs.

Specific Objective 4

The Kenya School of Government Top Management need to market the e-learning programme as an alternative to face to face/ blended approach as it was found out that e-learning would help to boost the revenue streams of the school.

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