A Study on Enhancing the E-Learning and the 21st Century Competence Skills Training in Institutions of Higher Learning

Joy Ayebare, Racheal Babirye, and Kenneth Wabuteya
(Institute of Advanced Leadership, Uganda)

Abstract

A universal education system relies on several factors, but perhaps the most fundamental is access to education. The fundamental focus of the MDGs was expanding access to elementary education, and this theme continues in SDG4 in a slightly revised form. Enrollment rates are the most fundamental indicator of educational opportunity. Uganda has listed basic enrolment as a national indicator, despite the fact that such metrics are not utilized for the global SDG4 objectives. *"Uganda Bureau of statistics Uganda report 2020"* This paper used both qualitative and quantitative methods of research. The qualitative method helped in the exploration of experiences and concepts of the subject matter in detail through literature review. The research revealed that some of the modes of instruction that are used in institutions are traditional, hybrid, simulation, e-learning and handouts. The respondents revealed that there is a great need to inspire and create a positive mind-set of the students and lecturers to the new mode of teaching and learning in the different institutions so as to enhance their adaptability to the e-learning systems. The paper recommended that administrators of virtual schools are encouraged to engage in more extensive professional development. In addition, policymakers are urged to respect faculty independence and refrain from intervening too closely in the educational process. Institutional investment is critical to the development of e-learning.

Keywords: e-learning, Quality, High Education, Institutions, COVID 19, Competence, employment, technical and vocational skills

Introduction

The development of Uganda's education system is the focus of a lot of interest right now. Therefore, educational institutions are extensively using technology to give another alternative of course delivery to students. As a result, educational sectors need to guarantee that these technologies are used properly within the sector itself. One of the more recently developed and widely used technologies in education is known as collaborative eLearning. This technology plays a significant part in the rise in the number of students enrolling in universities across the world, most notably in Ugandan universities, because most institutions have begun providing education in the form of learning.

In the communities, neighborhoods, and workplaces of the 21st century, having a grasp of the cultures of the globe and the capacity to communicate with people who come from a variety of

backgrounds are necessary abilities. Because students in online learning contexts have access to vastly larger networks of individuals, they are in a better position than students in traditional classroom settings to develop the aforementioned abilities. Students have a much easier time collaborating with people from all over the world and picking up knowledge from them, which leads to an increased understanding of the global character of communities in the 21st century.

It is expected of institutions of higher education that they will evolve so that they can meet the requirements of society. Because of this, institutions of higher education take on the critical duty of cultivating qualified personnel, which are essential to the functioning of society and the economy. In this environment, it is expected of individuals that when they graduate from institutions of higher education, they will have skills appropriate for the 21st century. Several studies have been conducted in order to ascertain the degree to which people in Uganda possess the skills necessary for the 21st century. The competency views of prospective teachers with reference to 21st Century abilities were investigated in the study that was carried out by Aygün et al. (2016).

Purpose

There is a consensus among institutions of higher learning that e-learning improves the standard of instruction, while few have provided concrete proof. While there is a lot of circumstantial evidence, such as student satisfaction surveys, it may not be enough to dispel the widespread skepticism that exists regarding the pedagogical benefits of online learning. It is in line with this that this project is envisioned towards enhancing e-Learning Laboratory facilities and promotion of the 21st Century Competency Skills Trainings to institutions of higher learning in Kampala in order to achieve sustainable quality education in the country.

Background Literature

The possible impact of e-learning on universities' institutional futures is now being considered and negotiated. There are still significant hurdles in certain establishments and in particular nations. The lack of trust in the pedagogical value of e-learning and the lack of investment in training faculty and staff are two of the most difficult obstacles to overcome. Institutions are pondering reorganization in light of e-learning in terms of personnel, staff development, course design, and student assistance as they work to incorporate e-learning into the fabric of their operations and get adequate financing for it. Institutions of higher learning everywhere have come to recognize the importance of hiring specialists in fields outside of academia, such as computer scientists, to complement their existing academic personnel (Elçiçek and Erdemci, 2021). Getting present faculty members on board with and invested in e-learning development is another obstacle. It is generally agreed that "staff development" is crucial to the long-term success of online education at the university level. Institutions are attempting to find a balance between faculty members and "new" employees focused on the technological components of e-learning. For the time being at least, the commercialization and internationalization of e-learning take a back seat to the day-to-day issues of implementing e-learning on college campuses.

Faculty members' reluctance to embrace e-learning may stem, in part, from their awareness of e-limits learning's and the immaturity of the technologies now at their disposal. Inadequate literacy in either ICT in general or in e-learning programs, as well as a lack of time or willingness to carry out what is really an additional activity, because e-learning generally supplements rather than replaces classroom-based education (Wani, 2013).

E-learning and the information sharing it entails may also clash with the professional culture of academia, which is predicated on independence and a compensation structure that is frequently centered on research. Intellectual property rights issues might potentially be problematic. Clearly, additional e-learning advancements depend on establishing a community of e-learning adopters inside and across institutions, as well as on knowledge management methods generally pertaining to e-learning (Ndibalema, 2020). However, the real difficulties lie in expanding effective trials and disseminating and institutionalizing best methods.

Partnerships are an integral part of e-learning because they enable institutions to pool resources and learn from one another, which in turn improves educational quality, market presence, and operational efficiency. Some organizations are already working on things like e-learning infrastructure, learning management systems and apps, the development of joint programs, collaborative marketing, research collaboration, the exchange of best practices, and the distribution of hardware and software expenses. However, problems can also arise from a relationship. Whether or whether third parties should be charged for access to e-learning resources is one such issue. One more aspect is how people feel about sending their e-learning projects overseas for completion. Institutions of higher education seldom give strategic consideration to making their course materials available to outside parties, and they view outsourcing as having either little or no long-term benefit. There is room for improvement in how successfully partnerships and networking are utilized to disseminate information and best practices within certain industries.

Methodology Used

In this paper the researchers used both qualitative and quantitative methods of research. The qualitative method helped in the exploration of experiences and concepts of the subject matter in detail through literature review. On the other hand, the quantitative method helped the researcher get facts from the field through questionnaires and interviews that helped in making analysis thereby deducing a conclusion (Bryman, 2006).

Originality/Value of the Paper

The research presented in this paper is an original concept of the team members of Quality Education SDG4. the team followed all the ethical guidelines. In areas where information was obtained from already existing work, the researchers acknowledged the authors of the cited works. This paper specifically looks at SDG 4, quality education. It will be of great value to stakeholders as it will give an overview of what is taking place across the sector.

Findings /Discussion

Our respondents were 100 youth, 57 females and 43 males and 5 instructors, 3 males and 2 females from five different institutions of higher learning.
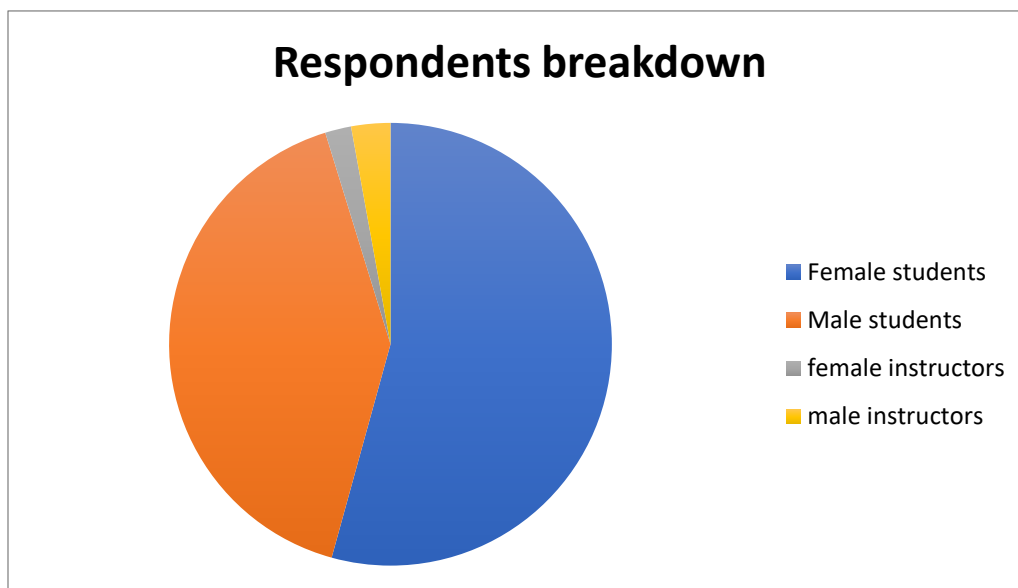
The research was done on 100 students and 5 institutional heads from five different institutions and the results are presented in the paragraphs. The research involved use of both primary and secondary data collection methods. Data collection was done for 4 days and our sample size was 105 (59 females 46 male) respondents in different categories as broken down below.

All the students were below the age of (25) offering diploma and certificate courses. Five heads of higher educational institutions interviewed by the team. All institutional heads that were interviewed were between the age bracket of 41 to years to 58 years of age.

The Number of Sisters or Brothers the Respondents Had

Most of the respondents had between one to five siblings that were aged between 4 to 25 years pursuing different levels of education ranging from Primary to tertiary education where the majority of our respondents were studying. The research revealed that some of the modes of instruction that are used in institutions are traditional, hybrid, simulation, e-learning and handouts. The mode of instruction commonly used changed because of the effects of COVID 19 to the hybrid mode of learning whereby both physical and e-learning were adopted by various tertiary institutions.

In addition, the respondents revealed that the challenges faced with the above mode of instruction are fewer contact hours as lecturers are distant and difficult to meet making it hard for students to interact with them. The internet network is an issue making it difficult to complete assignments and also the system slows down during examinations or tests. The data costs are high making it difficult to attend lectures sometimes. The e-learning platform has regular breakdowns due to

traffic when student's login. Finally, the traditional mode of instruction has been affected by COVID 19 and changing from traditional to digital learning is a challenge.

Possible Solutions were Shared by the Respondents that can Curb the Challenges above which Included:

The respondents revealed that there is a great need to inspire and create a positive mind-set of the students and lecturers to the new mode of teaching and learning in the different institutions so as to enhance their adaptability to the e-learning systems.

In addition, a greater percentage of the respondents noted that there is a need to identify and hire experts / technical staff to train and improve on the administrative support in a bid to help institutions get familiar with the new modes of instruction that they were going to use with the learners. It was observed that the internet connectivity was poor in most of the tertiary institutions and respondents proposed that the government should offer incentives to telecom companies so that the internet charges can become more affordable for the ordinary users. There are several labs with systems that were broken down due to poor maintenance. Regular maintenance of the digital learning gadgets to avoid system breakdown was recommended by the majority respondents. Engagement of both instructors and learners in mind-set transformation Programs to strengthen the 21st Century Competency Skills Training such as critical thinking, problem solving, and team building, among others.

According to the Respondents, All the Tools Listed Below are Used in their Institutions

Our respondents shared with our team the available tools used in teaching and they mentioned amongst them projectors, whiteboards, stationary, computers (desktops), internet servers, photocopiers and printers. It was also observed that most of the tools mentioned above are available in the institutions but unfortunately, they are not cost friendly to the learners / students. It was noticed respondents face challenges in their mode of instruction; internet charges are expensive, low Internet speed, Inadequate computers (you find that 3-4 students are sharing one computer and tools cost for example; projectors and printers.

These are Some of the Remedies that were Shared by the Respondents to Improve the Quality of Education in the Community

The institutions should make education more practical than theoretical i.e. carrying out fieldwork. In addition, promoting Mind-set changing programs to better the 21st Century Competencies to all students so as to compete for global job opportunities. There is need to put in place an enabling environment for education so that both the students and the instructors get to see improvement and development as well as enforcing e-learning through rural electrification where people can charge their e-learning devices. Finally, there should be internet connectivity within institutions of higher learning to enable students access internet easily and awareness is key and should be done first on how to use the tools to create a new trend of education and also investing in the various gadgets to make it more practical.

The Accessibility of the Internet is Moderate According to the Responses that were Gotten

These are Some of the Remedies that were Given by the Respondents on How Best the Issue of Internet can be Addressed in the Community

Zero rating the e-learning platforms e.g. zoom links embedded on the e-learning platform.

According to most of the students that were interviewed, they do not get support from their institutions regarding internet access, most of the students belong to institutional clubs in their respective schools and in addition, some students are part of the debating club society, writers club, interact club, youth alive among others and these encouraged outreaches to other institutions to help youth explore their talents further. In addition, expanding the worthy networks to remote areas and reducing the internet costs and having access to Wi-Fi and attaching minimal costs when getting to some systems like e-learning.

The key leadership roles some of the respondents took up in their respective clubs were head researcher in the debate club responsible for collecting all data regarding a specific debate topic, Secretary of the writers Club which involved creative writing and thinking, in charge of Welfare in the Youth Alive Club that involved ensuring that all members in the club were fully catered for. Some of the challenges the respondents faced during their leadership were lack of effective cooperation with all members of the club, procrastination of club activities, and conflicting royalty amongst club members among others.

These shortcomings were handled by having round table talks with all club members regarding what needs to be done and laying common strategic goals for the flourishment of the club, consulting teachers for guidance in situations that were out of hand.

From the five institutions we visited, they all seemed to have the same challenges with the exception of one. The four had computer laboratory facilities but with:

Limited access to internet connectivity due to high tariffs; incompetent computer instructors due to poor salary payment, and lack of moral / motivation from students and instructors to use ICT; theft caused by students removing components of computers during lessons; low student turn-up for training modules caused by inadequate computers in the classroom, poor and outdated / poor quality computer machines; poor 21st Century Competence Skills Training to almost all students for secondary, and University students; poor strategies for future jobs attributed to lack of mentorship, guidance and counseling to students; due to the fact that schools do not provide hands-on / technical skills training, and survival skills great number of youths fail to create jobs after school; and most students do not match career to Talent hence wrong and poor career selection.

One institution had a 50-seater computer laboratory with only chairs and tables but without any one computer they seemed to be waiting for donors and grant fees. We observed most

professionals in the community have jobs that do not match their qualifications, an issue that compromises standards of service delivery, this is attributed to mismatch of career and talent including lack of 21st Century Competence skills training to students of previous academic years. This issue has led to many challenges in the job industry and robbed most scholars of quality services. There is need for trainings to both students and instructors to have basic skills of digital e-learning and 21st Century Competence skills training.

Research Limitations/Implications

This research had limitations, which included limited resources, which prompted us to use a limited scope of survey and other methods of data collection like zoom meetings, questionnaires, phone calls, WhatsApp calls and interviews.

The team lacked previous research works on the 21st Century Competencies skills training since this is a new trend.

For reasons we did not have enough finances, high Internet rates also pivoted us to adapt the idea of making interview phone calls so as to record responses, poor network issues prompted the team to switch to personal interactions in a few institutions in order to collect some of the information that we captured and (finding study participants) some respondents/students were not fully engaged and responding to the questions that were asked. These challenges might have hindered getting the expected results of the study.

Recommendations

The following recommendations were made by the researchers after reviewing the information and the discussions:

i. Administrators of virtual schools are encouraged to engage in more extensive professional development. There is an immediate need to provide effective professional training for administrators, which should focus on a progression from preservice training to leaders who can aid in the training of their peers. It is also\recommended that criteria for essential performance qualities stated previously be developed with\accompanying research. Furthermore, the problems highlighted in this summary are seldom addressed in academic curricula, highlighting the need for change.

ii. Uganda's population growing fast at a rate of 3.3% by 2040 will require students to have E-Learning facilities and the 21st Century Competence Skills training so that they have technologically savvy minds, to boost the escalating numbers of unemployment, reduce numbers of school dropouts in our communities, to lead to descent formal employment and to promote non-technical skills to the students.

iii. Policymakers are urged to respect faculty independence and refrain from intervening too closely in the educational process. Institutional investment is critical to the development

of e-learning. Above all else, policymakers and institutions need to commit to a reasonable timeline for development. Then, perhaps, e-learning will be able to bring about a positive change in higher education.

iv.   The government should provide educators all throughout Uganda the training needed to effectively implement the e-learning system. As a field, educational research is consistently undervalued (Boeren 2016). Teachers, however, play a crucial role in the educational system. They implement education policy and make it easier for people of all ages to study. Teachers, from a structural and agency viewpoint, play a crucial role in connecting students to the larger society. To fulfill the SDGs' goal of making education available and accessible to everyone, teachers must first understand what this means.

v.   To make it easier to report on both achievements and difficulties in achieving Sustainable Development Goal 4, the government ought to establish a mechanism for coordinating the tracking of all contributions made by various stakeholders, such as the private sector, CSOs, development partners, and community efforts, toward the achievement of SDG 4.

vi.   The public education system run by the government of Uganda suffers from severe funding shortages. In order to track and meet the goals of SDG4, it is necessary to invest significantly more resources in the construction of primary and secondary schools in islands and other difficult-to-reach areas, as well as in the recruitment and training of teachers, including providing incentives for and making accommodations for teacher deployment in these areas.

vii.   It is urgently necessary for the government to increase the availability of special education instructors and instructional materials in order to support inclusive education and to strengthen the capability of school administrators to properly administer and maintain special education facilities. SNE continues to place a significant amount of emphasis on specialized units and schools.

Conclusion

The system of education in Uganda has a structure of 7 years of Primary, 6 years of Secondary (divided into 4 years of Ordinary and 2 years of Advanced levels of education), and 3 to 5 years of Post-Secondary Education. Despite the long journey of study, there are increasing numbers of unemployed women, men, and youth including an escalating number of school dropouts. Statistics show that 30% of the 70% of unemployed youth in Uganda are graduates. 400,000 graduates are released annually into the job market to compete for approximately 9,000 available formal jobs. According to the UNICEF annual report 2019, Uganda, like many other African country, faces a major challenge in the provision of quality and accessible basic education. This challenge has been escalated further by the COVID 19 pandemic as a result of the drastic transition from the traditional to digital mode of learning. This project seeks to promote the enhancement of the digital learning lab facilities and promotion of the 21st Century Competency skills training in tertiary Institutions in Kampala District to reduce the escalating unemployment

rate and other related challenges. Learners and instructors from 5 tertiary institutions were interviewed through both virtual and physical interactions. Observation of highly inadequate and inefficient digital learning equipment was made which has hindered the effectiveness in both learning and mode of instruction hence the need to recommend enhancement of e-learning facilities and promotion of the 21st Century Competencies skills' training to lead to decent formal employment and promotion of non-technical skills.

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Appendices

Appendix I: Questionnaire

Introduction

Dear respondent, this is the Institute of Advanced Leadership-Uganda, we are conducting a study to evaluate the quality of education which is a component of the UN agenda 2030 which aims at ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. This study is to evaluate the current state of education in the community so as to provide a benchmark for education related interventions. We assure you confidentiality, your personal details will not be documented anywhere. Thank You.

Consent

I agree to be part of this study. | YES | NO

Demographics Characteristics of Respondents

Gender

- Male

- Female

Age of Respondent

☐ Less than 18   ☐ 18- 25   ☐ 26- 30   ☐ 31-35

☐ 36- 40   ☐ 41- 50   ☐ 51 and above

Highest level of Education:

1. Non-formal

2. Primary

3. Secondary

4. Certificate (professional course)

5. Diploma

6. University

7. Post graduate

How many school going persons are aged between?

4-5 ☐

6-13 ☐

14-17 ☐

18-25 ☐

26+ ☐

Which one is your school and what is your year of study?

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………………………………………………………………**Knowledge, Attitude and Practices**

Education

1. What mode of instruction is commonly used in institutions?

- Traditional

- Hybrid

- Simulation

- E learning

- Handouts

- Others(Specify)…………………………………………………………………………………
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  ………………………………………………………………………………………………

2.What challenges are faced in your institution with the mode of instructions used?

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3. How do you cope with the above challenges?

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Tools

1.What are the available tools in your institution of learning?

- Projector

- Whiteboard

- Stationary

- Computers

- Internet

- Photocopier

- Printers

- Others(specify)
  ………
  ………
  ………………………………………………………………………………………………

2. How accessible are the tools chosen above?

(1- highly inaccessible, 2- inaccessible, 3- neutral, 4- accessible, 5- highly accessible)

TOOLS	1	2	3	4	5
Projector					
Whiteboard					
Stationary					
Computers					
Internet					
Photocopier					
Printers					
Others (specify)					

3. Which of the above do you own? (List all that applies)

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4.What challenges do you face with the accessibility of the tools?

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5.What can be done to improve the quality of education in your community?

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6.How accessible is the Internet in your community/institution?

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7.What do you think is the best method to address the challenges of Internet access in your community/Institution?

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8.Is there any support rendered regarding data in your institution/community?

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Soft Life Skills

1.Do you belong to any clubs and societies in your institution?

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2.List down the clubs you belong to in your institution

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3.Do you play any leadership roles in those clubs?

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4.Share with us one challenging experience during your time of leadership and how you overcame
it.
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