

Preparedness in Online Teaching and Learning

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Abstract: The COVID-19 pandemic has created the largest disruption of education systems in human history, affecting nearly 1.6 billion learners in more than 200 countries. Closures of schools, no, and other learning spaces have impacted more than 94% of the world's student population. This situation challenged the education system across the world and forced educators to shift to the online mode of teaching overnight. Many academic institutions that were earlier reluctant to change their traditional pedagogical approach had no option but to shift entirely to online teaching-learning and assessment. The paper discusses the importance of online learning not just in times of crisis, but the need of the hour to innovate and implement online teaching as an alternative educational system. The lesson learned from the COVID-19 pandemic is that teachers and students/learners should be oriented on the use of different online educational tools. By looking at the Strengths, Weaknesses, Opportunities, & Challenges of e-learning modes, the importance and areas of preparedness have also been discussed.

I. INTRODUCTION

The fast advances in technology in the past few years are an indication that the time for updating the mode of education delivery is overdue. Updating education systems to be able to learn at any time, and any place was on its way to being achieved (Wolfinger, 2016). Natural disasters such as floods, earthquakes, and storms are known to have wreaked havoc on human institutions, including education in terms of damage to infrastructure. However, the onset of COVID-19 brought almost all human activities to a standstill but teaching and learning in some countries resumed faster than other industries as the sector managed to transfer to online.

Prior to the Covid-19 pandemic, online learning had been activated in some global institutes for the past two decades but was not adopted with enthusiasm and the majority of the teaching staff did not know what is involved in e-learning. This was particularly so in developing countries, and more so in Africa. As a result, when Covid-19 broke out, there were many challenges due to poor infrastructure to support the new mode of teaching, inadequate capacity of the teachers, and poor or lack of internet connectivity in some parts of the countries which disadvantaged some learners who could not be reached. Studies show that many countries in Africa attempted to train the staff and teach at the same time demonstrating a lot of resilience. There were advantages to switching to online learning and teaching as well as disadvantages both discussed in this paper, with the former outweighing the latter. Lessons learned in the endeavors point to the need for more effort to prepare for digital learning and teaching as the future of education, not only in Africa but the world over.

In many African countries, educators have adopted "Education in Emergency" through various online platforms and are compelled to adopt a system that they are not prepared for.

That as may be, there is a lot that learners, staff, and stakeholders must learn from the experience as the institution of education tried to remain afloat. These circumstances lead to the realization that planning early for the future is an urgent need for academic institutions (Rieley, 2020). Broadly identified challenges with e-learning are accessibility, affordability, flexibility, learning pedagogy, lifelong learning, and educational policy (Murgatrot, 2020).

The objective of the paper.

This paper aims at highlighting the importance of rethinking online learning and teaching in preparing for the transition of education on digital platforms. To achieve this objective this paper highlights the pros and cons of online learning and teaching to make some recommendations that would enhance the adoption of online learning and teaching that promotes and sustains quality and equity in education.

II. LITERATURE REVIEW

This section looks at literature from recent studies on phenomenal events that affected or interrupted the running of schools and education in general in different parts of the world. Online learning and teaching have also been discussed under different subheadings to give the reader a clear understanding of the different but overlapping operational meanings between the two terms.

III. METHODOLOGY

The discussion in this paper uses secondary sources of information in arriving at the opinions and suggestions made throughout the document. The secondary sources include books, journals, and articles relevant to the objectives of the paper.

An Overview of past education in Emergencies.

Environmental or natural disasters have always been experienced in the history of the world and are known to have disrupted education badly. It is such disruptions in education that may have influenced the development of programs for 'Education in Emergencies, a sector in education that is becoming popular in many African countries. Some interventions by the program are tailored to ensure learning takes place as a restoration of normalcy in whatever may have been affected by the disaster. The incidents recorded below are examples of some of the natural disasters recorded as having

impacted the education sector, probably in terms of infrastructure such as buildings, and teaching resources, epidemics, and loss of lives and property albeit for a short period of time. But Covid-19 was a unique disaster that not only killed people in thousands but for two whole years and therefore requires unique attention.

During the Covid-19 era, formerly impressive buildings and other material things were of little value as humans avoided one another for survival. Software infrastructure became the most important tool for human interaction thus making education continue, as other industries came to a standstill. The table below lists a few such disasters that affected education.

Table 1. Natural Disaster That Affected Teaching–Learning Badly.

Year	Natural disasters
2009	A violent earthquake in 9 the city of L'Aquila
2010	Floods in Pakistan
2011	Tropical storm Washi in the Philippines
2011	A series of earthquakes in New Zealand
2013	Tropical storm Haiyan in the Philippines
2015	Gorkha floods in Nepal
2017	Harvey and Irma Hurricanes in the United States
2017	Floods in Nepal, Bangladesh, and India
2018	An earthquake in Papua New Guinea-
2019	Earthquakes and tsunamis in Indonesia-
2019	Typhoon Lekima in China-
2019	Typhoon Hagibis in Japan
2019	Tropical cyclone Idai in Southeastern Africa-
2019	The heat wave in Bihar-2019

Source. Save the Children (2014, 2017), US News and World Report, & Briggs, 2018.

IV. ONLINE LEARNING

Online learning refers to the method of learning by students without necessarily being at a particular place with their instructors, or even at the same time. Online learning is defined as learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access. In these environments, students can be anywhere (independent) to learn and interact with instructors and other students (Singh & Thurman, 2019). Learners and instructors are able to keep maintain a social distance among fellow learners or other people but continued to learn.

Online learning can be termed as a tool that can make the teaching-learning process more student-centered, more innovative, and even more flexible. As McBrien et al., (2009) assert, rapid developments in technology have made distance education easy. This is the case where asynchronous learning involves the learner searching for information and sending feedback at a given timeline. Online learning also allows physically challenged students with more freedom to

participate in learning in the virtual environment. As noted by Basilaia & Kvavadze, (2020), online learning requires limited movement to listen to the teacher. This means that a student can be seated, standing, or even lying down as long as they have a gadget that connects them to the teacher and is attentive.

Online learning has gained acceptance by the young generation as they tend to understand the technology faster than older adults including some of their teachers. A study conducted to evaluate students' views about the future of mobile learning after the current pandemic in basic education colleges in Kuwait concluded with a good impression from the student in utilizing mobile learning in higher education. The purpose of the study was to determine the recommendation for developing and teaching courses about m-learning use and application (Alanezi & AlAzwani, 2020).

Nowadays, the challenges to accessing online learning are less because both learners and teachers have experienced the excellent opportunity to knowing and interacting with educational technology tools such as mobile-based learning, computer-based learning, and web-based learning (Pellegrini, Mirella, Vladimir Uskov, & Casalino, 2020; Byun, Sooyeon, & Slavin, 2020). According to Prensky (2001), today's learners are entirely different from their predecessors because they are native speakers of the technological language. The interactions of today's learners with different sorts of technology for various purposes enabled them to be active recipients of e-learning (Vai, Marjorie & Sosulski, 2015; Mohalikand & Sahoo, 2020; Ko & Rossen, 2017).

Among the challenges to online learning, it was observed to be a better or poor mode of transmitting knowledge in relation to particular subjects. There are a variety of subjects with varying needs in online pedagogy. Different subjects and age groups require different approaches to online learning (Doucet et al., 2020). A study was carried out to determine the challenges and obstacles experienced by English language learners (EFL) in Science and Arts College, Alula, Taibah University, Saudi Arabia, when switching to online learning in the second semester of 2020 due to the COVID-19 pandemic. The study results show that most EFL learners were not satisfied with continuing online learning, as they could not fulfill the expected progress in language learning performance (Mahyoob, 2020). For linguistics courses such as phonetics and phonology challenges were experienced where the teacher needed to teach phonemes, allophones, morphemes, etc. face to face. Regarding language communication issues, learners could not effectively interact with teachers during virtual classes on English language skills, as revealed in learners' responses to open-ended questions. Some other studies reported challenges in communication, assessment, online education experience, technology use, time management, anxiety, and coronavirus disease stress. This proved to be the case in a study that explored online learning challenges in medical education during the COVID-19 outbreak by Rajab, Mohammad, Gazal, & Alkattan, (2020).

In another study, students were found to be not sufficiently prepared to balance their work, family, and social lives with their study lives in an online learning environment. Other students were also found to be poorly prepared for several e-learning competencies and academic-type competencies as well as low-level preparedness among the students concerning the usage of Learning Management Systems (Parkes et al., 2014).

Many African countries have substantial issues with reliable Internet connection and access to digital devices. Many students at home/living space have undergone psychological and emotional distress and have been unable to engage productively. In many developing countries, economically backward children are unable to afford online learning devices, and online education poses a risk of exposure to increased screen time for the learner. The best practices for online home-schooling are yet to be explored (Petrie, 2020) But all said and done, online learning was the best solution for continuing education during the pandemic, especially in tertiary education (Mohammad, 2020). It is therefore pertinent that empirical studies are encouraged to come up with the best solution to address the challenges that continue to hamper the provision of quality education through online teaching and learning

V. ONLINE TEACHING

Online teaching can be defined as a mode of instruction by the teacher through the use of digital gadgets, such as phones, computers, tablets, and connected to the internet. It is no longer a choice, but a necessity, and institutions must scramble for different options for online pedagogical approaches and try to use technology more aptly. Many universities around the world have fully digitalized their operations understanding the dire need of this current situation. As some scholars noted, educators have shifted their entire pedagogical approach to tackle new market conditions and adapt to changing situations. Liguori, and Winkler (2020) caution on the pandemic's impact on entrepreneurship education and call for more studies and resources on the challenges regarding online education.

It is possible to provide a quality education through online teaching. It is worth noting that during the tough time of the lockdowns, the main concern was not on whether online teaching-learning methods can provide quality education, but rather on how academic institutions will be able to adopt online learning in such a massive manner (Carey, 2020). However, educators will be judged on their pace to adapt to the changes in such a short period and their ability to maintain quality. How well they behave and how well they maintain their quality of education amidst this crisis shows their adapting capabilities.

The earlier statement still stands that it is no longer a question of if online teaching is required but the question is how this will be made possible. Academic institutions would not be able to transform all their college curricula into an online resource overnight. Distance, scale, and personalized teaching and learning are the three biggest challenges for online teaching. In reference to the pandemic repercussions, Liguori & Winkler, (2020) asserts that only innovative solutions by institutions can

help us deal with this pandemic, and sums with the question of whether we are up to the task. Even beyond the pandemic, the changes need wise leaders to make guidelines for reshaping the future of all sectors. Higher education will play a vital role in this process, starting from education to other sectors, such as the healthcare sectors, economics, sport, etc.

The role of information technology (IT) and the COVID-19 pandemic in hastening current and future e-learning entrepreneurship activation are considered a panacea in times of crisis and difficulties. A meta-analysis study conducted by Yildiz (2020) about recent trends in educational technology during 2015-2020 showed that using educational technology in teaching and learning is appropriate. Another study explored the importance of online learning and investigated the analysis of weaknesses, strengths, challenges, and opportunities of online education in the time of the pandemic (Shivangi, 2020). The study provided some guidelines for dealing with online learning challenges during natural disasters and epidemics which can be made use of by stakeholders in education.

A survey conducted by the International Association of Universities (2020) about the impact of COVID-19 globally on higher education institutes revealed a negative influence on the quality of activities and the inequity of education opportunities. Major challenges encountered by learners in online learning were technical issues, like internet connectivity problems, accessing classes, and downloading course materials. In some cases, online exams could not open on learners' mobile phones.

A study about learners' and teachers' satisfaction with the online learning model using the Blackboard platform at Qassim University, Saudi Arabia concluded that the e-learning mode is an advancement in education, but significant work is needed to improve online learning applications (Altruise 2020). Some of the online platforms used so far include unified communication and collaboration platforms such as Microsoft Teams, Google Classroom, Canvas, and Blackboard, which allow teachers to create educational courses, training, and skill development programs (Petrie,2020).

There are some advantages and disadvantages of online learning. For example, the accessibility of online education globally, and saving time, money, and effort are advantages of online learning. In teaching, lecture recording is one advantage when students ask teachers to record the classes. The teachers are reviewing and preparing well for recording, which certainly improves teaching strategies and methods. Students can access the lectures anytime and can understand better (Mahyoob, 2020). The flipped classroom is a simple strategy for providing learning resources such as articles, pre-recorded videos, and YouTube links before the class. The online classroom time is then used to deepen understanding through discussion with faculty and peers (Doucet et al., 2020).

Research highlights certain deaths such as the weakness of online teaching infrastructure, the limited exposure of teachers to online teaching, the information gap, the non-conducive environment for learning at home, equity, and academic excellence in terms of higher education. Not all learners have

good internet connectivity. Some learners suffered from network problems and lacked high-quality learning devices. A summary of what the paper is trying to bring out is well demonstrated in the following extract from Dhawan, S (2020) titled, *Online Learning: A Panacea in the Time of COVID-19 Crisis*, published in *The Journal of Educational Technology Systems*. It breaks down the strengths and weaknesses of online learning and teaching as follows;

Strengths

1. Time flexibility
2. Location flexibility
3. Catering to a wide audience
4. wide availability of courses & content
5. Immediate feedback

Weaknesses

1. Technical Difficulties
2. Learner's capability & confidence level
3. Time Management
4. Distractions, frustration, anxiety & confusion
5. lack of personal/physical attention

Opportunities

1. Scope for Innovation & digital development
2. Designing flexible programs
3. Strengthen skills: problem-solving, critical thinking, & adaptability
4. Users can be of any age
5. An innovative pedagogical approach (Radical transformation in all aspects of education)

Challenges

1. Unequal Distribution of ICT Infrastructure
2. Quality of Education
3. Digital Illiteracy
4. Digital Divide
5. Technology cost & Obsolescence

VI. RECOMMENDATIONS

Based on the reviewed studies before covid-19 and recorded experiences during the pandemic, the paper calls for a deliberate effort by stakeholders to prepare for online wholesome teaching with or without an emergency. The following observations would add as a guide toward attaining some ground in that direction.

- E-learning tools have played a crucial role during this pandemic, helping schools and universities facilitate student learning during the closure of universities and schools. While adapting to the new changes, staff and student readiness needs to be gauged and supported accordingly
- The expansion of online learning in tertiary education will further accelerate, and schools will organize themselves more systematically to pursue the aspects

of technology-based learning that they have found most useful

- Institutions and educational systems must make special efforts to help those students whose parents are unsupportive and whose home environments are not conducive to study.
- The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communication technology (ICT) of both educators and learners. It also allows the tracking of student learning and assessment by using quizzes and the rubric-based assessment of submitted assignments
- Online learning and teaching are very effective in encouraging skills such as problem-solving, critical thinking, and self-directed learning.

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