OPTIMIZING E-LEARNING AMID THE COVID-19 CRISIS TO DEVELOP AND SUSTAIN INFORMATION SCIENCE IN ANAMBRA STATE OF NIGERIA

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Abstract

In order to realign themselves for a sustainable learning delivery in the current realities of global lockdown, the educational institutions are switching studies electronically via virtual platforms known as e-learning. Education, in the emerging information economy of the 21st century, demanded a structural transition in the delivery mechanism to comply with the new content design, skills acquisition and technology innovations even before the pandemic. Successful delivery mechanisms need to be harnessed to produce people who are locally significant and globally qualified in e-learning ingenuities. Library and information science has become the propelling force that plays central roles in civilization, as gateways to information and literature, especially playing the roles through virtual learning environments. But there are gaps in the tools and resources they provide; in the learning opportunities they offer, in equipping educators and technicians, and in shaping the novel e-learning to power the sustainable development of information science in Anambra state. The paper further analyses the current status of e-learning in Anambra state, the best ways to close the identified gaps, how to optimize online learning platforms to drive growth in the state's information science services quality assurance and delivery to remain competitive in the globalised world.

Keywords: Optimize, E-learning, Sustainable, Develop, Information

Introduction

Education is a real human and national growth instrument. To be sustainable, development must meet the needs of the present without undermining the capacity of future generations to fulfill their own needs. This means that in order to meet the needs of present and future generations in the

three interrelated fields of economy, human development and the environment, the educational curriculum must be efficiently and consistently enforced (Okah-Edemoh, 2017). The implementation of the curriculum document deals with successful education initiatives within the framework of curriculum delivery. In other words, the delivery of the program deals with the tactics, procedures, approaches and methods used to promote learning. In the 21st century, curriculum delivery must be compatible with education, which calls for a paradigm change in the delivery method to fit emerging knowledge, behaviors, skills and technologies. World Council for Curriculum and Instruction (WCCI) (2012) argues that, because the curriculum is a vehicle in which educational goals are accomplished and delivery methods are a component of the curriculum, effective delivery mechanisms need to be employed in order to produce functional people who are knowledgeable, effective and important locally and globally.

One of these powerful curriculum delivery mechanisms is e-learning, which is electronic learning. In order to expand and develop learning in and out of classrooms, e-learning, which adopts and incorporates information communication technologies, is the new digital face of learning. E-learning involves all processes and applications that transfer computer and network-enabled information and skills, web-based learning, computer-based training, virtual classrooms and interactive partnerships in a globalised learning exchange (Basak, Wotto & Bélanger, 2018). Via the internet, intranet/extranet, audio or video tape, satellite TV, CD-Rom, e-learning content is provided. It can be self-paced or instructor-led and involves text, image, animation, video and audio streaming media in the platform. The implication is that e-learning is preferable to the conventional form of teaching and learning in this COVID-19 pandemic era, but it is just a complement, not a replacement, to traditional classroom teaching and learning (Ilie, 2019).

How COVID-19 drives the E-learning Implementation upsurge

Currently, educational institutions in Nigeria are focused only on conventional learning methods, i.e. they adopt the traditional setup of classroom face-to-face lectures. Although several academic units have begun mixed learning, many of them are still stuck with old procedures. The unexpected outbreak of Covid-19, a lethal disease triggered by the CoronaVirus, shook the whole world. It was deemed to be a pandemic by the World Health Organization. This situation threatened the worldwide education system and compelled educators to move overnight to an online style of teaching. There was no alternative but to move completely to online teaching/learning for many academic institutions that were previously hesitant to change their conventional pedagogical approach (Dhawan, 2020).

Governments have implemented some coping steps around the globe, such as using remote learning to control and cope with the crisis. The World Bank is therefore collaborating actively with many countries to provide funding for the efforts currently being made by many education ministries to provide remote learning opportunities when schools are closed. In addition, several organisations are working with the World Bank to use different knowledge sharing technologies to provide frameworks for the provision of remote learning (Mhlanga & Moloi, 2020). Among others, these organizations include:

- mEducation Alliance;
- UNESCO;
- Learning Keeps Going US consortium;
- Inter-Agency Network for Education in Emergencies and Commonwealth of Learning

SWOC Analysis of E-learning for Library and Information Science Use

E-learning has started gaining popularity in Nigeria in the last few years, especially in NOUN. Via Large Open Online Courses, many platforms provide students with affordable courses. A number of institutions in Nigeria are still hesitant to teach and learn online. However, everyone was exposed to a new world of online learning and remote teaching by the challenges raised by the Corona Virus pandemic. Via a few platforms, such as Google Hangouts, Skype, Adobe Connect, Microsoft teams, and a few others, instructors engaged students in remote teaching. ZOOM appears as a winner in the platform choices (Dhawan, 2020).

SWOC stands for Strengths, Weaknesses, Opportunities and Challenges, and they are analysed below:

Strength

It is student-centered and provides a lot of flexibility in terms of time and place. The techniques of e-learning allow everyone to customize their processes and procedures based on the learners' needs. Many online resources are available that are useful for an efficient and effective learning environment. In the times of crisis, educators can use a mix of audio, videos, and text to reach their students in order to keep the human-touch aspects of their lectures. This helps create a collaborative and engaging learning atmosphere in which students can provide interesting input, ask questions, and learn instantly. The Anywhere and Anytime feature of e-learning is beneficial in the times of crisis-like situations (Huang, Liu, Tlili, Yang, Wang et. al, 2020).

Weaknesses

E-learning has some drawbacks in the way that contact between the learner and the teacher can be impaired, i.e. direct communication and lack of human interaction. Users will face several technological challenges that obstruct and slow down the process of teaching and learning (Favale, Soro, Trevisan, Drago & Mellia, 2020). Flexibility in time and place, while it is the strength of online learning, these aspects are fragile and create issues. The non-serious conduct of students in terms of time and flexibility may trigger a lot of issues. Not all students and learners are the same, they differ in degrees of skill and sense of commitment. While studying online, some do not feel relaxed, contributing to increased dissatisfaction and frustration. Inadequate consistency between the technology design and the psychology aspect required by the learning process and inadequate customization of learning processes can hinder the teaching process and create an imbalance (Rarh, 2018).

Opportunities

Academic institutions will now seize the opportunity offered by COVID-19 to motivate their teachers to teach through online methodology for their students to learn electronically. People have always been complacent and have never tried any new ways of learning. This is the moment when surprising inventions and digital technologies are being carried out with a lot of variety. Already, by helping us fight the pandemic and not letting learning be stopped, EdTech companies are doing their bit. Teachers can practice technology and can design different versatile systems for a deeper understanding of students (Ofoha, 2012). The use of online learning would test the instructor as well as the learners. It will enhance problem-solving skills, critical thinking abilities, and adaptability among the students, and users of any age can access the online tools and reap the benefits of time and location flexibility. Teachers can develop innovative pedagogical approaches, and EdTech Start-ups have plenty of opportunities to bring about radical transformations in all aspects of education activities (Liguori & Winkler, 2020).

Challenges

Online learning faces many obstacles, ranging from difficulties for learners, difficulties for educators, and difficulties with content. To engage students and make them participate in the teaching/learning process is a challenge for institutions. For teachers, it is a challenge to transition from offline to online mode, adapt their teaching methodologies, and control their time. Developing content that not only encompasses the curriculum but also involves students is difficult (Kebritchi, Lipschuetz & Santiague, 2017). A big issue is the quality of e-learning services. In their educational policies about e-learning services, there is no explicit stipulation by the government. There is a lack of consistency, quality control, e-resource creation, and e-content distribution norms. This question needs to be resolved urgently so that the benefits of

quality education through e-learning can be enjoyed by all (Cojocariu, Lazar, Nedeff & Lazar, 2014).

E-learning vs Library and Information Science

It is only logical to ask the question: can e-learning make conventional LIS education obsolete with the tremendous advantages and increasing success of e-learning? The comparison of conventional education with e-learning demonstrates how the two approaches complement each other (Educations.com, 2020).

E-learning and Teaching in Library and Information Science

IT has changed and is changing the role of libraries. One of the interesting effects is a much stronger orientation towards the university's strategic processes. Libraries are playing a supporting role in e-learning, in distance learning, in the development of the virtual university (Chigwada, 2018). 'Librarians can contribute significantly to the integration of information resources in the process of electronic learning, to user training and to support.

E-learning offers a range of opportunities to library and information professionals. These include providing new services and resources, enhancing the role of the information centre within the Institution, and career development. E-Learning and teaching is unlikely to replace face-to-face training and education, it is rapidly becoming an important additional delivery method and it offers new learning opportunities to many people. E-Learning is an important method of delivering information literacy programmes and it is used by many library and information workers as a way of supporting students, both campus and distance learning. E-learning offers the opportunity for information workers across different countries to work together and construct their own professional knowledge through virtual communities of practice' (Abumandour, 2020).

It requires information workers to develop new skills in the design and development of E-learning materials and programmes, 'new approaches to learning and teaching, online communication skills, and also, new ways of working with each other'.

E-Learning in Digital Libraries

Many of our university libraries are now automated and provide e-mail accounts for many scholars. With the aid of web and email attachments, communication and data sharing has become simple. In every way, the Inflibnet software for university libraries is expanding. A digital library system may integrate the idea of e-learning because in an e-learning environment, for example, the content is truly interactive. Any piece of information comes with a system that equips a user to assess his knowledge level, and libraries have

been adapted to develop the learning process accordingly (Sharma & Upadhyay, 2017). If there are well-equipped classrooms and user-friendly technology where library networks can connect directly to give students their regular services, e-learning can be made efficient in LIS. E-learning could become easier with current research focused on developing the LIS career in the domain of user interface, software to produce information , analyze and communicate with complex data, where LIS professionals can seamlessly render their services (Okello-Obura & Kigongo-Bukenya, 2011).

Identified Gaps in E-learning Development and Sustainability in Information Science

Almost everyone in developed nations has gained access to ICT in recent years, and is computer literate. In order to keep pace with unprecedented speed in the field of technology, developing countries have adopted ICT and thus e-learning. In general, the use of ICTs is growing and significantly rising in Nigeria, but there are still many gaps that are causing the digital divide between developed and developing countries (Life Learners, 2018).

Gaps in the Infrastructure and Other Resources

Poor Technical Infrastructure: Weak technical infrastructure creates a significant gap in the application of technology for e-learning. In developing countries, the technological infrastructure is not highly developed, which means poor connectivity, and due to low bandwidth, telephone lines and Internet connections are unreliable or sluggish. A big hurdle in the implementation of e-learning is bandwidth. Bandwidth refers to the amount of information on a computer network that can be transmitted or received at a point, the higher the bandwidth, the greater the carrying capacity and transmission speed. The greater the quality and quantity of audio , video, interaction and processing tasks, the more advanced the desired digital technology becomes (Life Learners, 2018).

Energy Related Problems: A perennial problem affecting almost every sector of the economy, including education, is the erratic and often disrupted supply of power in Nigeria. It represents a major setback for technological progress in the country. In Nigeria, most rural areas are not even linked to the national grid. The result of this is that it might be hard for students living in such areas to use ICT effectively (Momoh, Anuga & Anagba, 2018).

Poor Funding Amid High Cost of Internet Resources: With regard to targeting a wide segment of audience and ensuring that everyone can access the service, the cost of ICT equipment can be a limiting factor in developing countries. For facility installations and maintenance, public institutions are not getting enough funding. To link to the internet and access e-learning, students

need digital devices such as laptops or smartphones and internet subscriptions which are exorbitant at their current rates. Most schools in Africa do not have the
means to purchase expensive computers and hardware, and provide training for their staff (Muhammad, 2019).

Gaps in Learning Opportunities and Educators' or Technician's Expertise

Despite presenting barriers for both teachers and students, eLearning, being the new wave of education, is already having a fair display. Although instructors need to put in extensive work and time to design the instruction, to decipher the course content, students need to equip themselves with technical competence.

Adaptability Struggle: Moving from conventional classroom to computer-based training in a virtual classroom makes the learning process different. Their reluctance to change does not allow them to adapt to the online learning environment, while getting used to Course Management Systems (CMS) and computer-based education methods takes time for them (Kumar, 2020).

Technical Issues: The high bandwidth or the strong internet connectivity needed by online courses is not available to many students and thus they fail to keep up with their virtual classmates: their unreliable systems make it difficult to follow the Course Management System and their learning experience becomes dysfunctional. In addition, most of them live off campus and find it difficult to adjust to the selected course's technical requirements. Some don't even own computers and are seeking technical assistance in the private internet cafes (Purdue University Global, 2020).

Time Management: Time management for eLearners is a difficult challenge, since online courses take a great deal of time and hard work. In addition, while it is mainly adults who choose web-based learning programs for their flexibility in location and time, because of their different daily responsibilities, they rarely have the time to take the courses. Young students are very confused in matters of managing their time themselves (Kumar, 2020).

Self Motivation: Self-motivation is an important prerequisite for eLearning; however, to their surprise, many online learners lack it. Many learners fall behind and develop the idea of giving up after enrolling in online learning courses, as problems with managing a technical medium often seem insurmountable (Mahlangu, 2018).

Limited expertise: In most schools, there are few technical employees to support the modern configuration of e-learning facilities. The lack or insufficiency of qualified workers is a threat to the use of ICT in educational institutes. Inadequate teacher training programs are insufficient to equip

teachers and support staff in the planning of their lessons and support of e-learning programs using ICT. Teachers are the backbone for educating students, but times have changed and their lack of new knowledge and expertise needed to deploy e-learning tools has a significant impact on online learning for students (Anene, Imam & Odumuh, 2014).

Present Status of E-learning in Anambra State

E-learning is strained in developing countries such as Nigeria, where the state of Anambra is located, with the issue of material devices such as computers, computer laboratories, internet and e-mail facilities, webcamera systems and teleconference devices and wireless applications, digital library, digital classrooms, multimedia systems and the problem of the production of multimedia courseware (Ukwueze, 2018). Other studies have shown that there is a shortage of qualified e-learning instructors, a shortage of equipment, infrastructures and facilities. Some researches showed an acute lack of e-learning materials such as online/internet-connected devices, e-mail services, multimedia television, interactive media computers and digital libraries. It was also discovered that the few available systems, such as offline computers, scanners , printers and ready-made courseware, are not used because teachers lack computer application training and expertise. The telephone is the only content known as usable and in operation' (Nwana, 2012).

Optimizing E-learning and Closing theIdentified Gaps in Information Science

In some schools in Anambra state of Nigeria, e-learning is now in place. However, the question remains: how much e-learning is being used, especially in LIS? For successful teaching and learning, how can the adoption and use of e-learning be optimized? For productive cutting-edge administration and management, how can online learning be optimized? Therefore, in order to address these questions with a view to implementing and optimizing e-learning in Information Science (Ilechukwu & Njoku, 2014), the following steps describe the roadmap:

- Prioritization and optimal investment in science and technology, research and development (R&D) and education with a view to fostering and enhancing technical skills. In this sense , it is important to re-engineer and re-brand Universities of Technology and Engineering Faculties to rapidly track technical expertise, acquisition, creativity and practice.
- Compulsory E-learning, from the year one to the final year, must be incorporated into the university curriculum: not an elective or a simple GS course (Ilechukwu & Njoku, 2014).

- Sustained e-learning skills and practice retraining programme for academic and non-academic staff. The Nigerian University Commission (NUC) should shift focus on e-learning with a purposely rigorous and dynamic university upgrade strategy.
- Optimal educational funding and the provision of a supportive learning environment by public-private partnership (PPP), including vital e-learning infrastructure.
- Supplying universities with sufficient and reliable power generation.
- An optimal culture of maintenance and preservation should be ingrained.
- Integration of e-learning and hybrid learning online and offline. Offline e-learning explains learning using CD-Rom on computers that are not connected to the internet. A Computer Based Training (CBT) is a form of this. Blended learning is a blend of face-to-face and virtual education delivery methods (Matthew & Kazaure, 2020).
- Efficient cooperation among both public and private sector stakeholders. These include teachers who need to bundle the teaching modules, the university that provides the management mechanism, students who are the most important audience; IT experts who need to provide delivery platforms, policy makers who accept that e-learning should take place, telecommunications firms, banks such as financial institutions, and platform providers.
- Integration into e-learning systems with mobile computing devices such as iPods, MP3 players, personal digital assistants, e-book readers, tablets and modules to make instructional courses more available and portable (Hogenbirk, 2020).
- By using it to extend educational offerings to individuals who may otherwise be excluded by regular services, e-learning innovations will better be realized. This will strengthen and refine the distance education programme to combat the country's high rate of illiteracy.
- The Federal Ministry of Information Technology and the Federal Ministry of Budget and National Planning should collaborate and be more involved in making digitalization a key national growth strategy, plan, programme and campaign for all national agencies, including education (Federal Ministry of Education, 2019).

Conclusion

E-learning is no more an option, but a sine qua non educational tool. The recent COVID-19 pandemic triggered a global lockdown that halted conventional education methods, rendering billions of students out of school. This emergency hit all the sectors, including education so hard that

stakeholders started reimagining solutions and a renewed and rededicated enthusiasm for e-learning was launched. Online and web-based interactions became the bane of all businesses, where the educational sector declared online studies as the panacea. The author, in this paper, investigated how optimized development of sustainable e-learning can drive modifications in the roles that Library and Information science play in education. The authors showed their findings with SWOC analysis, revealed various gaps that impede e-learning sustainability, detailed the current status of e-learning in Anambra state and highlighted possible steps in optimizing e-learning in the state for maximum benefits of LIS education. The author further arrived at some conclusions and made recommendations on the way forward.

Recommendations

1. Better engagement of LIS staff in the development and implementation of e-learning programs;
2. Development and implementation of an e-learning strategy that incorporates low-cost data and devices to the end users who are the students;
3. Increase in funding by the government, via Tetfund, for e-learning programs and the supporting software licensing, technical infrastructure, equipment, and technicians: extension of funding terms for e-learning programs;
4. Assessment of community needs and educational outcomes: for instance, building community e-centers;
5. Building infrastructure, tools and capacity: train and retrain all teaching and non-teaching staff;
6. Development and implementation of a strategy to improve teacher engagement such as global exchange programmes;
7. Consideration of generational differences among students and augment with routine seminar;
8. Promotion of student commitment with incentives, rewards and stimulant packages;
9. Expansion and an increase in the flexibility of programs, with holistic program delivery;
10. Central and regional governments should subsidise the prices of smart devices and make broadband subscriptions free to all students enrolled in the public schools;

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