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Open and Distance Learning: The Continental Education Strategy for Africa and The United Nations Sustainable Development Goal 4 (SDG4) Engagement

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Abstract

Access to quality higher education in Africa, remains the main challenge for educators, policy makers and political leaders. The required workforces needed for industrialization of African countries South of the Sahara cannot be realized without parallel investments in education, particularly technical and science-based institutions of higher learning.

The United Nations SDG number 4 "aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." Distance education has been identified as the right strategy for achieving this goal, due its ability to accommodate many learners at an affordable cost. The recent technological advances in ICT have helped to shrink the distances, bringing learners closer to the school and to one another, while making distance education cheaper. The recent Covid-19 pandemic that led to closure of many schools, has propelled online learning to unimaginable levels, with more learners now opting to online learning instead of classroom-based instructions.

The African Council for Distance Education (ACDE), strives to ensure easy access to higher education, that is of high quality. Through its interventions, many lifelong learning opportunities have been made available through its member institutions, while gaining the momentum necessary to have its influence in those countries that are yet to embrace distance and online learning. Thus, the continent is set to meet the deadline for attaining the SDG 4, where higher education will be available to all, including those from marginalized and disadvantaged communities.

Keywords: *Synchronous learning, Asynchronous learning, Online learning, Open Distance Learning*

Introduction

Open Distance Learning is not new, as it was used in New Testament Biblical times, in the first century AD, to spread the Gospel. In those days, hand-written scripts were passed on from Paul's prison cell in Rome to various parts of the Middle East and East Asia, where he had established congregations. The so-called epistles were written to churches and individuals, and some have been retained forming a great part of the New Testament Bible. Other letters were also written by other Disciples of Christ, including Peter, John, and James. Paul is known to have written 14 such letters, commonly referred to as "Epistles".

However, ODL has undergone a transition with technological advances, since the invention of the printing machine, the digital forms we see today. Delivery of distance education always featured the latest technology present at the time.

Evolution of Distance Learning

Distance Education, or Distance Learning refers to a form of education that focuses mainly on adult learning, where the learners are remote from their teachers, and may not always be physically present at school (Kaplan & Haenkein, 2016). Distance learning can be seen to have gone through four stages in its evolution pathway. The various stages combined synchronous and asynchronous forms of learning. *Synchronous* technology is a mode of online delivery where all participants are "present" at the same time, requiring a timetable to be organized. Synchronous modes include: Web based VoIP, Telephone, Videoconferencing, TV and Radio Broadcasts, and Web Conferencing (Skype, Facetime, Zoom, etc.). *Asynchronous* technology is a mode of online delivery where participants access course materials on their own schedule. Students are not required to be together at the same time. Asynchronous modes include: Audiocassette, Audio CD-ROM, E-

mail, Message Board Forums, Print Materials, CD-ROM, MP3 Podcasts, eLMS, etc.

Correspondence

The first stage of distance learning was based on print technology, where learning materials were transmitted by correspondence. Learners were also sending back their assignments to the college using postal services. In 1756 a Boston Gazette published on March 15th, 1756 an advert by Caleb Phillips, offering to teach short-hand by correspondence. Again, University of London – established its External Programme, offering qualifications by distance education in 1828. By 1858, The external programme was Chartered by Queen Victoria, making the University of London first to offer distance Learning degrees (Rothblatt et al, 1988).

Across the Atlantic, in 1892 the University of Chicago, USA, started offering correspondence courses. The University of Queensland, Australia, established the Department of Correspondence studies in 1911.

On our continent, The University of South Africa (Unisa), started distance education programmes through correspondence in 1946. Since then, many other distance learning institutions and open universities have been established in various parts of the continents.

Multi Media based on Print, Radio and TV Broadcasting

The second stage of ODL involved combined use of print media, Radio and TV broadcasting. In 1922, Commercial Radio broadcasting started. By 1925, the Pennsylvania state college started offering courses by radio broadcasts. By the 1930's, some 'Schools of the Air" had begun to offering K-12 education in the USA, using radio broadcasts. Television invented in the 1940's, and slowly began to replace Radio in entertainment, news and education.

Internet

The internet, discovered toward the end of the 1980's, brought with it another revolution in distance education. In 2000, CourseNotes.com was launched at UT Austin in the USA. By 2003, WebCT (Web Course Tools) – a content management system was established. It quickly attracted more than 6 million student users in more than 1300 institutions in 55 countries. Then YouTube launched its broadcasts in 2005. By 2009, YouTube EDU was offering thousands of free lectures online. In 2006 iTunes U began offering lectures for download, and in 2012, Udacity began offering massive open online courses (MOOCS). Then MIT and Harvard followed with the MOOC platform EdX. In 2013, UF Online, the first online public university was announced and launched in 2014.

Electronic content delivery has been made possible through various forms of technology. Tele-course/Broadcast, in which content is delivered via radio or television; CD-ROM, in which the student interacts with computer content stored on a CD-ROM, now becoming obsolete. Pocket PC/Mobile-Learning where the student accesses course content stored on a mobile device, tablet or through a wireless server; and Integrated distance learning, the integration of live, in-group instruction or interaction with a distance learning curriculum using various ICTs.

Challenges of Print media

Print media has many challenges, which include increasing costs of production, especially where the printing is outsourced. Unless you invest heavily in setting a printing press, there is no other option. Once the materials are delivered from the printer, you them must distribute them to your learners, most of whom are located remotely. And this is a-gain costly. With increasing numbers of learners in remote areas you incur increases in distribution and storage costs. Print media is static and updating to another edition is a slow and costly process. In some cases, outdated books and study materials continue to be the only learning resources available to students. In the meantime, there is growing consciousness on environmental protection, where printed

materials are viewed as being "Not Environmentally Friendly", because production of paper involves the death of trees.

Challenges of Digital Delivery

Transformation from analogue to digital content has also its many challenges. The first challenge is high ICT illiteracy among some adult learners which create resistance and opposition to digital delivery. Moreover, most of the rural areas have poor mobile network coverage. 4G networks are only found in regional towns, with some difficulty. High cost of ICT hardware and internet bandwidth remain the main obstacle in Africa. Worse is the poor power reliability in most African countries, most of which incur occasional power cuts day and night. Clever students have found a way out of this challenge by setting up solar power systems to power their computers and charge their mobile phones. Another important challenge is in-adequate local content, where learners are made to consume content developed for other countries. On the other hand, there has been general un-prepared-ness for mode of delivery shift, among both staff and students.

According to statistics released by the International Telecommunications Union (ITU) in 2014, internet penetration in Africa was just 18% compared to 47% in south America and 81% in North America. With regard to internet penetration, Africa remains the dark continent. Within Africa, there are marked differences in the number of people using internet. Whereas in 2015, about 51% of the population of South Africa had internet access, while in Tanzania it was just above 5%. Internet access in the UK was above 90%. It is hoped that by now, the situation has improved significantly in the marginalized African countries, due to government efforts to improve internet access and connectivity.

Open Distance Education in Sub-Saharan Africa

In Sub-Saharan Africa (SSA), the rate of students registered in Higher education is on average, still below 10% of those starting school (UNESCO, 2020). In some countries it is just 4%, while there are countries with more than 30%. Developed countries like South Korea boast with over 95% tertiary access. Table 1 shows the Tertiary

Participation Indicators for various parts of the world in 2018 as reported by UNESCO. It has not been easy for governments to increase this enrolment to at least 20% which is the minimum requirement for industrialization. Most countries don't have the resources needed to expand campuses and build new ones without damaging quality of outputs. Some countries, through distance education, have managed to increase access to higher education, specifically to minorities and marginalized groups in the society, through open and distance education. The contributions of ODL institutions such as University of South Africa (UNISA), National Open University of Nigeria (NOUN), Zimbabwe open University (ZOU), Sudan Open University (SOU), Open University of Tanzania (OUT), etc. cannot be ignored. There are also many Universities with dual mode of delivery, where many distance learning students have been enrolled. Therefore, ODL is surely the only way out for massification of higher education in Africa.

Table 1: Tertiary Education Participation Indicators In 2018

	Gross Enrolment Ratio (%)
Sub-Saharan Africa	9
Northern Africa and Western Asia	46
Centra/S. Asia	26
Eastern and South Eastern Asia	45
Latin America and the Caribbean	52
Oceania	73
Europe and Northern America	77
Low income	9
Lower Middle income	25
Upper Middle income	53
High Income	75
Global Average	38

Source: UNESCO (2020): Inclusion and Education; Global Education Monitoring Report.

In 2011, UNESCO estimated that in order to ensure that every child in sub-Saharan Africa gets access to quality education, then a total of 400,000 teachers would have to be recruited every year by 2020 (UNESCO, 2011). By any means, such numbers of teachers could not be trained using existing universities and colleges that are mostly using face-to-face modes. Some universities training teachers in the sub-

Saharan region have been using ODL for the training of teachers. Good examples are the Unisa, OUT, Egerton University, Makerere University, Uganda Martyrs University, UNZA, ZOU, in Eastern and Southern Africa. However without government intervention to promote ODL, the required number of teachers will never be reached.

Shrinking Distances

The element of distance between the learner and the teacher has been the defining component that distinguished a distance learner and a face-to-face learner. The face-to-face learner is deemed to have easy access to the teacher, during their day-to-day meetings in the classroom. However, as classes get bigger in our universities, students can barely make direct consultations with their teachers. Due to present communication technology, however, students have been able to reach their teachers through email, text message, telephone, or through interactions on the e-Learning platform. The growing telecommunications network and the internet have resulted in the shrinking of distances, such that ODL students have come nearer their teachers while the face-to-face students have moved a bit away from their very busy teachers (Mshana, 2018). This is the key element of convergence between ODL and face-to-face models of teaching and learning.

Is ODL a Disruption?

A disruptive innovation is a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up the market, eventually displacing established competitors. For many years, open distance education was disregarded and view as an inferior form of education, only suitable for adult learners who missed a chance of university education during their youth. Such learners were expected to take many years to graduate, as they could only do a few courses every year.

However, the introduction of online education has changed many things. Learning is now not a function of time. Students may start together, but each will finish in own time, like a marathon race, as content is readily available, anytime. The student and not the teacher,

is in control of one's progress. Notably, online lectures are richer with multi-media presentations that include notes, power point presentations, video and audio clips, interactive discussion forums, chat-boards, etc. You can rewind or replay at will, something not possible in a face-to-face lecture. Many open universities have started, "on – demand" examinations, allowing their students to write examinations anytime, instead of waiting for the semester examination session.

It has been said (Mbatha, 2015), that disruptive innovations have fundamentally transformed the education sector, by replacing expensive, very complicated and inaccessible products or services with much less expensive, simpler and more convenient alternatives. Recent innovations in ODL institutions include on-line examinations, taken from secure premises, oral examinations by video conference applications like zoom, taken from anywhere; freedom to take as many credits as you wish; a flexible admission cycle allowing students to enrol anytime; flexible graduation allowing students to graduate anytime when they attain the required credit; open size of classroom (no limit of intake), as learning does not require space; learners from anywhere – cross border education, no need for visa; and teachers and facilitators from anywhere, no need to have fixed permanent academic staff for a course. We can easily conclude that online open education has caused a great disruption to traditional forms of contact education.

The Covid-19 Experience

During 2020, the entire world came to a stand-still due to eruption of the covid 19 pandemic. Schools and Universities were forced to close, in order to minimize contact between learners and staff. Nearly 700 million students missed schooling from across the globe. However, ODL became the only means to educate the students – particularly using online education technologies. Schools and universities quickly adopted online education in order to remain relevant. Up to now, campuses are still close, and online delivery has remained the only option. Nevertheless, children from marginalized communities which have no access to technology have been left behind.

The Open University of Tanzania, experience the challenge in its examinations. Like most ODL institutions, it was still examining its students by way of written and closely invigilated examinations, in addition to assignments, case studies and projects done independently. Under Covid-19 restrictions, such written examinations are not permitted. The OUT then devised an Oral Examinations System (OREX), where students were examined orally, using video conference applications such as skype and zoom. Most universities in the developed world have adopted this system as the secure means to examine students without contact. Nevertheless, the examinations are very engaging to staff and they take longer because a single student is examined alone, for a period not longer than 40 minutes, by a panel of two or three staff.

Conclusion

As said earlier, SDG 4 *Aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.* We are now witnessing increasing numbers of learners with various disabilities in our distance education system. Blindness has been overcome by assistive technology, where blind learners are now able to use a computer and access online content. Similarly deaf students are now able to learn online. We have also witnessed growing numbers of prison inmates acquiring qualifications while in prison. A prison inmate in Tanzania who earned a diploma in primary teacher education, has now opened literacy classes in the prison where he serves a long sentence, and many prisoners who could not read or write are now able to do so.

It is believed that Africa can attain its continental strategy for SDG 4 if more efforts are put in ensuring that affordable higher education is available to all, including those from marginalized and disadvantaged groups. The African Council for Open and Distance e-learning should continue to support those countries where distance education is unpopular, so that many mor of our people get access to higher education.

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