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African Universities in post COVID-19: Assessing the Opportunities and Challenges of Online Learning

Appeared in China in December 2019, the coronavirus quickly spread across the world and has more than nine hundred thousand deaths as of September 16, 2020. Africa remains one of the least affected continents in terms of victims. The business world and the education system were seriously affected. However, there have been many opportunities for both Africa and the rest of the world. In this piece, I discuss, among other things, the opportunities and challenges related to e-learning, the training costs in the context of COVID-19, some platforms for e-learning, the quality of online courses and the educational policy to support the massive use of ICT in education.

Opportunities and Challenges of Online Learning

The emergence of COVID-19 has triggered opportunities for many stakeholders to resort to new ways of working, particularly through use of remote technique tools. The education system has also shifted in most countries towards e-learning with the integration of videoconferencing tools for educational purposes. These new avenues presented two key opportunities such as service continuity and reduction of pollution and greenhouse gases.

Several African countries embarked on online learning without prior preparation as this appeared to be the only alternative likely to ensure the continuity of teaching services. However, socio-economic and technical shortcomings in most of our African countries have exposed the education system to several difficulties in the e-learning mechanism, including in particular:

- Limited energy power: indeed, without energy resources, IT systems cannot be operational.
- Limited Internet connectivity: continuous and efficient learning requires rapid and permanent flow of internet connection
- The lack of computer equipment for learners: most learners, especially those in social, economic and legal sciences, do not have computers.
- Teacher training in techno-pedagogy: online courses require much more design work.
- Initiation of learners: the use of learning platforms requires a significant investment and perfect organization on the part of the learners.
- Access of the internet connection: The costs currently offered for the Internet connection are generally high and represent a luxury that many learners cannot afford continuously.

Training costs

Online courses have generated significant new costs for learners and teachers, including the need to use internet bundles and subscriptions. Due to lack of computers with higher costs, many learners have

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chosen smartphones to take online courses. Training costs should be reviewed taking into account the fact that savings made by learners do not cover the costs of Internet connection.

Choice of platforms for online learning

There are several platforms for online learning also called Learning Management System (LMS). These support and manage the learning process either through a learning management system, virtual training center, open and distance training, or online training. In the Canadian education system, we talk about a digital learning environment.

The choice of online learning platforms depends on the options made by universities. They can opt for paid or free platforms depending on technological skills. In either case, training of users, teachers, managers, administrators, etc is key. With the LMD (Licence Master Doctorat) system, it would be more efficient to harmonize the training programs to facilitate learners' mobility. This assumes that lecturers can work together to produce resources. The establishment of an online learning platform at the regional level would be an asset.

Quality of online courses

The quality of the courses is important for an effective online training. Learners do not have physical access to their lecturer, and very good designs of the teaching material are important for autonomous learning process. An online course with rich content can lose its value if it is not well organized.

To improve the quality of online courses, it is also important to proceed through peer review, whereby teachers from the same discipline can work together to produce online quality courses and educational resources.

Educational policy to support the massive use of ICT in the education system

Several actions need to be taken to improve use of ICT in the education system.

- There is a need for a clear political will at various levels to overcome the challenges linked to the general use of information and communication technologies to offer quality services. The use of ICT in education presents opportunities in education but also challenges that must be addressed at every step.
- Countries must implement a policy that reduces the cost of communication and internet for better and inclusive access. They can also offer computers to students.
- There is a need for an education policy for effective use of these tools in order to avoid misuse. This is the flip side of technology, which must have a monitoring body

Adaptation of the education system to the Institute for Training and Research in Computer Science

The Institute for Training and Research in Computer Science at the University of Abomey-Calavi is a computer science institute where each learner is required to have a computer from the first year. This facilitated the transition from face-to-face to online lessons. Online teaching has gradually been accepted despite the reluctance of teachers and learners. Although concerns were raised regarding the online teaching, including better internet access and its cost, it should be noted that the on-line learning approach has been adopted by the entire universities' community in Benin. Course materials are made available to learners on the cours.uac.bj platform and on Google drive to ensure the availability of courses in the event of unexpected shortcomings in the services. Schedules are developed on a weekly basis to allow learners to have better organization. Explanations are then offered to learners live with

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free video conferencing tools. The learners are then invited to return to the classrooms while respecting SOPs such as social distancing and a class of at most fifty for the classroom. Lecturers are invited to this face-to-face session to summarize and discuss learners' concerns. The assessments are done face-to-face although there has been practical work assigned to the learners. Academic internships could not be done because of the formal ban on companies from welcoming learners.

In summary, the coronavirus pandemic has unfortunately affected negatively while also providing opportunities. There has been a certain solidarity across the world. The challenges in the education systems must be addressed for African countries to refine their education systems by working together at least by sub-region.

This is our twenty sixth issue in a series of articles we are releasing as part of our RUFORUM Thought Pieces on the Corona Pandemic. This Thought piece is a summary of the discussion points that emerged from the 11th RUFORUM Webinar which focused on "[African Universities in Post COVID-19: Assessing the Opportunities and Challenges of Online Learning](#)" You can get more information about RUFORUM at www.ruforum.org. You may also share your thought piece about the Pandemic with us by writing to e.adipala@ruforum.org and copying m.agen@ruforum.org

About the Author

Eugène C. Ezin is a Professor in Computer Science & Artificial Intelligence. He studied in Benin before joining the International Institute for Advanced Scientific Studies (IIASS Eduardo Caianiello) in Salerno, Italy, with a fellowship from the International Center for Scientific Culture - World Laboratory. At IIASS-Eduardo Caianiello, his research focus was on Artificial Intelligence - Soft computing - Speech signal processing - Image processing - Neural networks and fuzzy systems. Later on he joined IIASS for the post-doctoral fellowship, as a Researcher in the Speech Processing Laboratory and coordinator of the Master in Advanced Information and Communication Technologies.

Eugene C. Ezin has published 80 scientific papers in internationally renowned journals and in proceedings of refereed conferences. He was in charge of the training in Computer Engineering and Applied Sciences from 2007 to 2013 at the Institute of Mathematics and Physical Sciences of the University of Abomey-Calavi. He has supervised several bachelors, masters and PhD students in computer science. Since December 2013, he has been the Director of the Institute for Training and Research in Computer Science. He is also the Director of the Open Distance and Online Training Center of the African Virtual University at the University of Abomey-Calavi and the Head of MOOCs, an outcome of the partnership between the Federal Polytechnic School of Lausanne in Switzerland and the University of Abomey-Calavi. He has expertise in scriptwriting and production of MOOCs and e-learning. His research areas include signal processing, machine learning, big data, IoT, cryptography, blockchain.