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Is University Education Limited by Globalization and Technology in Developing Countries? An Observation Done during Pandemic

Mary Marcel and Beatha Mkojera

Abstract

On March 2020, WHO declared Covid-19 a pandemic disease. This forced many university students to return and stay home. In developing countries; most home means remote areas where technological interventions have their limitations. To continue with studies, some universities arranged for online classes. This became feasible only to those with access to internet. Other universities had to cancel classes due to uncertainty that online classes will be accessible to every student. Teaching arrangement s for higher academic institutions in Africa was mostly affected by COVID-19 as compared to America, Asia and Europe; whereby 43% of classes were suspended and 24% canceled. The unevenness of the term globalization and irregularity of technology seem to affect the continuation of university education to each and every student during the pandemic time. The question becomes: are developing countries globalized enough to confidently declare the effectively use of technology in their educational systems? This chapter aims to provide an observation of the Impacts and limitations of globalization and technology to the university education in developing countries.

Keywords: higher-education, developing-countries, globalization, technology, pandemic

1. Introduction

Globalization interconnects the world, making it a small village through time and space where technology is the main and important facilitator of this interconnectivity [1]. This process is marked by speedy, free movement of people, services, capital, goods, ideas and knowledge across borders [2]. A question becomes, how practical is the term globalization in describing educational systems of developing countries? Through technology, globalization facilitates access and sharing of most recent knowledge across the globe. Online classes, scholarly references, and academic communications in higher education and universities provide proof that education is pinned down by both globalization and technology.

During times of minimum physical contacts, like what happened recently due to COVID-19 pandemic; one might expect the benefits of globalization and technology to outshine. In educational systems, this would mean continuation of studies and communication among those involved. Unfortunately, in some developing counties benefits of globalization and technology to university educations had their limitations during the times of pandemic. Some universities had to seize classes completely simply because technology was limited in its application.

Authors of this chapter argue that: the terms globalization and technology are used disproportionately and unfairly when it comes to university education within developing counties. The two terms tend to mask the reality of the limitations they cause. Maybe, if developing countries had accepted that they are not globalized enough as assumed and masked by the term 'globalization'; and that the available technologies are not advanced enough, they would find ways to continue educating during the times of pandemic. Instead, for developing countries to rely on globalized technology has proven limited during this challenging time.

2. University education in a globalized world

Globalization or global links are mentioned to have started to form since the early 19th century where rapid interconnectedness across the globe was witnessed [1]. Since the 90's the term globalization emphasizes on interconnection among nations across the continents, and described as: not limiting investments, production and innovations within one nation's borders [3]. Authors of this chapter think that a nation must reach a certain level of development technologically before entering the state of being globalized. Such development at national level should not be judged as a complete hindrance in globalization of both education and career rather indicates the need to amend the national approaches to address the population demand of the developing countries preferably in the indigenous manner [4]. Authors of this chapter observed that developing counties are said to be 'globalized' and 'technologically connected with other nations' but found to be technologically limited within a country. A good example is the observation done at the university educational system during the pandemic. Authors of this chapter observed that university education is limited by the unevenness of the term globalization intersected by the irregularity of technology. The use of the terms when elaborating university education creates assumptions that there is an equal distribution of their benefits.

The term globalization makes authors of this chapter think of importance of nationalization and rationalization [4]. In order to deliver higher education successfully, maybe a country should be termed as 'nationalized' first before being globalized. This way we can use the term globalization in the assurance that connection is successful within a nation before spreading global. As a university lecturer, this will mean that I should be able to communicate with my students within my country same way I can use technology to connect with other academicians in foreign countries. To our opinion, when the system of education is said to be modernized and globalized, then its availability and accessibility should not be in a limited context both nationally and globally.

Globalization can strengthen or weaken educational systems in a particular nation: a good example of educational policies. In coping with globalization, developing counties must develop their educational policies not only to serve national needs, but also to be integrated to accommodate the global context with positive impacts. Al'Abri who assessed influence of globalization on educational policy at Oman, argues that; educational policies within developing countries in the context of globalization are strongly influenced by the role of international

organizations when compared similar influence to developed ones. Accordingly, education policy is no longer determined by actors within the nation state alone, but through various complex processes occurring globally [2]. International organizations such as the UN, the World Bank, and Organization for Economic Co-operation and Development (OECD) are claimed to have more powerful impact on education policy of low income and developing countries through their practices, programs and policies such as the UN's Millennium Development Goals, Education for All, and others [5]. Accordingly, education policy in developing countries is globalized.

Educational policy terrain is confirmed to be reformed and redesigned by globalization [2, 6]. Authors at [2, 6] argue that the process of globalization has deeply shifted and changed the ways in which education policies are developed, implemented and evaluated.

3. University education and technology

Technology can be defined as the use of scientific knowledge for practical purposes or any other life applications, whether in industries or in our everyday lives [7]. Subsequently, we are using technology whenever we use our scientific knowledge to achieve some specific purposes. Generally, Technology can be anything from the discovery of simple things up to complicate ones [8]. Since technology can be so simple or so complex, different colleges/universities have been operating using different technologies in different aspects.

Colleges and universities have generally been quick to adopt new technologies, regularly even before their educational value has been confirmed. Throughout history, higher education institutions have investigated with technological advances as diverse as the blackboard and the personal computer [9]. The use of computers, internet and telecommunications are the major technologies reforming higher education. The use of electronic mail, fax machines, the World Wide Web, CDROMs, and commercially developed meeting software apps are altering the daily operations and expanding the duties of colleges and universities. Some technologies such as the use of slides, projectors, and other audio -visual skills have now become permanent parts of higher learning institutions. These technologies are being used in different matters like teaching and communication [10]. This has been of great importance in different college/universities where the traditional teaching and learning process has been revolutionized.

Technology has been able to eliminate the barriers to education imposed by space and time and dramatically expand access to lifelong learning. Students no longer have to meet in the same place at the same time to learn together from instructors, instead, they can use technology to access different sessions, materials and academic meetings/appointments. We can now say that modern technology has transformed the concept of higher learning institutions that is no longer necessary for a college/university to have a physical place/building with classrooms or lecturing theaters but it can use technology to reach students [11]. Through sophisticated communication technologies; higher learning institutions are no longer restricted to have face to face communications between staff and students. They can now communicate via technologies from different geographical locations if and only when all required resources are in place. Technology can also make education a much more interactive and collaborative process to both students and stuff. The use of electrical mails, course-based websites, and computer-based chat rooms are some of the technology-enabled resources that facilitate communication and teamwork among students and their instructors.

Despite of all technology's promise, its incorporation in some of higher learning institutions in developing countries has not been easy and successfully due to some difficulties including infrastructural settings [12]. Many barriers to technology-based innovations and investment costs have been limiting the total exposure of technological advances for stuff and students [9, 13]. In East-African settings with an example in Tanzania, most of academic institutions are so confined to classroom - centered lecture that make many instructors reluctant to adopt alternative instructional strategies using the computer or telecommunication devices [14].

Technology has also been found of disadvantages in university education settings where it has also brought a number of cold aspects. Among the disadvantages of technology are; many instructional positions have been obsolete, professors and instructors' control of the curriculum has been lost, cheating on academic matters has been so easier to students, the importance of attending lectures has been ignored, the role of some instructors/mentors has been replaced by technologies and also technology has facilitated laziness for university students [15]. Together with this, the cost of many technological applications also prohibits their easy adoption at many resource-limited institutions.

4. Education in the middle of globalization and technology

4.1 Education in the middle of technology and globalization within Africa

In response to the coronavirus outbreak, many African governments took the decision to close all schools and higher learning institutions to contain the disease. Consequently, all higher learning institutions had to rethink the approach to become more digitally led and shifted to online platforms [16, 17]. The manifestation of coronavirus pandemic exposed the unpreparedness of many higher learning institutions in Africa to shift to online. The pandemic incidence caused many African governments to temporarily close all educational institutions and other places that gather people in order to contain the spread of COVID-19 in their respective countries. The closures of schools and universities is said to have impacted over 70% of the world's population. The management of higher learning institutions in Africa have now understood the importance of encouraging students to embrace change in learning and teaching as well as to prepare themselves for any forthcoming events and other troubles that might become part of their lives [16].

The situation of higher education in the COVID-19 era has been an excellent lesson for higher education institutions in Africa to rethink what to consider in planning for future curriculum including steps to be taken towards adopting a blended learning approach in education to improve access and equity. During COVID-19 pandemic, several universities across Africa, such as Egypt, Ghana, South Africa, and Rwanda shifted some of their programmes to online platforms and partnered with Telco's to zero-rate these platforms [13, 16]. These few universities in some instances made data packages and laptops available to some of their students' access which was difficult to other African universities due to some geographical and technical challenges.

Nevertheless, even with all the efforts of some universities in Africa to ensure smooth teaching and learning via online platforms, limitation of globalization and technology still affect African university that hinder students from accessing their studies in case of any emergency like pandemic issues. According to UNESCO, 89% of students in sub-Saharan Africa do not have access to household computers and

82% lack internet access and thus even though there will be online classes still they cannot cater for all students in Africa [17].

During this pandemic, many strategies made by universities to make studies continue were observed. Some researchers like Kari Mugo, Naliaka Odera and Maina Wachira did a survey to know the impact of COVID-19 on Africa's higher education and research sectors. On their survey, they found out that While 83% of respondents reported experiencing disturbance on their ongoing learning, only 39% said they were enrolled in institutions offering e-learning options. Only 17% of West African respondents reported being at institutions with e-learning options, compared to 43% of East African and 41% of respondents in Southern Africa. The survey added that even the research activities were affected whereby, 73% reported a suspension of their lab or field research activities as a result of the COVID-19 crisis. These results of the survey alert us to a broken system that has been worsened by a global pandemic. The researchers pointed out that, even if there were institutions offering e-learning, the trend across the continent was not homogeneous. They also found differences in accessing to e-learning based on a respondent's gender, age and exposure to technological issues [18].

The impact of COVID-19 pandemic was not similar worldwide; different continents were affected differently. African regions were mostly affected by suspending teaching sessions and some teaching were mostly canceled in Africa compared to other continents surveyed. Results are summarized in **Table 1**.

4.2 Education in the middle of technology and globalization within developing countries

It is through education that nations are termed as developed. An educated nation, using technology and interconnected with other nations is termed as developed. Education does not only speed up development processes, but also make development more linked to people's needs. Development goals in most developing countries have been changed, related to and influenced considerably by globalization processes. Various authors conclude that education is a necessary component of development in responding to globalization and in achieving economic growth and social development. Education equips people with the new knowledge and skills needed for the acceptance and adoption of globalization [5, 19].

Technological innovations, creativity and output are all contained within an education system. In developing countries, both education and technology correlated together are looking for to provide solutions to both economic and social challenges [20, 21]. Therefore, education becomes crucial to developing countries as a means of creating channeled-opportunities for these countries

Continents	Not affected	Classroom teaching replaced by distance teaching and learning	Teaching suspended but the institutions developed solutions	Teaching canceled
Africa	3%	29%	43%	24%
Americas	3%	72%	22%	3%
Asia & Pacific	1%	60%	36%	3%
Europe	Almost zero	85%	12%	3%

Source: https://www.iau-aiu.net/IMG/pdf/iau_covid19.

Table 1.
Impact of COVID-19 on teaching and learning by region.

to engage and integrate with the global economy and development. Education and technological level enable assessment of developing counties in the level of globalization. Clearly one country is termed as globalized based on the quality of education and technology available in that country. Therefore education becomes the core center that holds technology and globalization all together.

5. Observation during pandemic – university education limited by both globalization and technology

The observation was done mainly to university education in East Africa during the time of pandemic. Existence of pandemic forced both students and academicians to stay at home; technology was expected to facilitate the continuation of university education. After all it is a university education we are talking about where terms technology and globalization are highly applicable. Technology in university is used in all aspects of teaching (ICT, internet, modern lab equipment). Globalization is applicable under a notion that in order for a university to be permitted to offer higher education, there must be linkages, flow and continuous exchange of current knowledge and expertise between the universities across countries and sometimes continents. But should not these two terms globalization and technology enable university education to continue during the emergency time of pandemic? One might expect that to be the case. But in most developing countries their limitations were caused by inapplicability.

In Tanzanian universities for example; classes had to be frozen completely during the peak of pandemic. Students went home with minimum educational communication with their academic supervisors. Shouldn't globalization (connection of the world) and technology (especially ICT) be helpful during this time? Had the globalized technology not being limited by evenness in accessibility, university studies during the pandemic would continue. We cannot deny or dare to overlook the importance and advantages of globalization and technology in the university education. We appreciate the two when we are able to access online classes with visual contact communications from other developed countries. However, to proudly apply the intersection of the two terms, continuity must be maintained during the emergency times of minimum contact.

6. Conclusion

It is through globalization that education has become a matter of international relation and concern. Technology has been able to facilitate this. But should the terms globalization and technology been used evenly to both developing and developed countries? The authors of this chapter argue that they should not. The evidence behind their arguments is because of what was witnessed on university education in developing countries during the time of pandemic. Even though we appreciate the benefits of the terms as applied to part of educational systems within developing counties, the unevenness usage of the terms create the assumptions that mask the reality of their limitations to university education.

Therefore the lesson learnt during pandemic serves as a call for all higher education institutions in developing countries to rethink and modify their curricular so as to suit a blended learning approach. To ensure equal access of globalized techniques and technologies in higher education institutions, authors recommend investment to improve resources and infrastructures within developing countries.

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Conflict of interest

"The authors declare no conflict of interest."

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References

[1] Korotaev AV. Globalization. Yesterday, Today and Tomorrow. Emergent; 2013.

[2] Al'Abri K. The impact of globalization on education policy of developing countries: Oman as an example. Literacy Information and Computer Education Journal. 2011;2(4):491-502.

[3] Carnoy M, Hallak J, Caillods F. Globalization and educational reform: What planners need to know. UNESCO, International Institute for Educational Planning; 1999.

[4] Zahid G. Globalization, nationalization and rationalization. Procedia-Social and Behavioral Sciences. 2015 Feb 12;174:109-14.

[5] Robertson, S., Novelli, M., Dale, R., Tikly, L., Dachi, H. and Alphonce, N., 2007. Globalisation, education and development: Ideas, actors and dynamics.

[6] Rizvi F, Lingard B. Globalizing education policy. Routledge; 2009 Dec 4.

[7] David Wood and Christianlly Cena (2003). What Is Technology? - Definition & Types. ScienceFusion Intro to Science & Technology: Online Textbook Help.

[8] Brown, David G. "The Jury Is In!" In Teaching with Technology, ed. David G. Brown. Bolton, MA: Anker. 2000.

[9] Bakhtiari, S., & Shajar, H. Globalization And Education: Challenges And Opportunities. International Business & Economics Research Journal (IBER). 2006;5(2). DOI.org/10.19030/iber.v5i2.3461help.html

[10] Hanna Donald E. Higher Education in an Era of Digital Competition: Choices and Challenges. Madison, WI: Atwood Publishing. Read more: Technology in Education - Higher Education Learning, Educational, Students, and TechnologiesStateUniversity.com. 2000. https://education.stateuniversity.com/pages/2496/Technology-inEducation-HIGHER-EDUCATION.html#ixzz6VXJXr3vc

[11] Green, Kenneth C. "Campus Computing, The 2000 National Survey of Information Technology in U.S. Higher Education." 2000. 8 60-66

[12] Patrick Rivers, John Kwame Asubonteng Rivers, Vanessa Hazell. Africa and Technology in Higher Education: Trends, Challenges, and Promise. International journal for innovation education and research. 2015. DOI:10.31686/IJIER.VOL3.ISS5.354CorpusID: 56296669

[13] Roger G. Baldwin. 18 minute read, Technology in Education. HigherEducation. (2020). https://education.stateuniversity.com/pages/2496/Technology-in-Education-HIGHER-EDUCATION.html.

[14] Ndume, Vitalis Tilya, Frank and Twaakyondo, H. Challenges of adaptive e-learning at higher learning institutions: A case study in Tanzania International Journal of Computing and ICT Research. 2008. Vol,2.

[15] Keith Miller. Advantages and Disadvantages of Technology in Education. FUTURE OF WORKING. THE LEARDERSHIP AND CAREER BLOG. 2020. https://futureofworking.com/10-advantages-and-disadvantages-of-technology-in-education/

[16] Adotey Sampson Kofi. World Economic Forum. 2020. https://www.weforum.org/agenda/2020/06/higher-education-africa-covid19-coronavirus-digital-online/ https://education.stateuniversity.com/pages/2496/

Technology-in-Education-HIGHER-
EDUCATION.html#ixzz6VXLRFtCg

[17] Giorgio Marinoni, Hilligje van't
Land and Trine Jensen. The impact of
covid-19 on higher education around
the world. IAU Global Survey Report.
2020. https://www.iau-aiu.net/IMG/
pdf/iau_covid19_and_he_survey_
report_final_may_2020.pdf

[18] Kari Mugo, Naliaka Odera and
Maina Wachira. Surveying the impact of
COVID-19 on Africa's higher education
and research sector. INTERNATIONAL
ASSOCIATION OF UNIVERSIITIES.
2020. https://www.africaportal.org/
features/surveying-impact-covid-19-
africas-higher-education-and-research-
sectors

[19] Green A, Green A. Education and
development in a global era: Strategies
for 'successful globalisation'. DfID; 2007.

[20] Fischer S. Globalization and its
challenges. American Economic Review.
2003 May;93(2):1-30.

[21] Ozturk I. The role of education in
economic development: a theoretical
perspective. Available at SSRN 1137541.
2008.