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Higher Education Students’ Learning in COVID-19 Pandemic Period: The Ethiopian Context

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ABSTRACT

This article analyzes the stand taken by Ethiopia’s higher education institutions when providing students’ learning during the COVID-19 period while institutions are closed in order to contain the virus. These institutions have a recent history of low research and technological advancement globally. The effects of the COVID-19 are wide ranging and endangering students’ learning. The study investigates how public universities are attempting to deliver learning remotely in order to support students as well as exploring challenges and opportunities following the institutions’ efforts to minimize the risks of the pandemic. The result shows that, when compared with universities in other countries, neither the government nor the universities took concerted measures to sustain undergraduate students learning. Undergraduate, graduate and Ph.D. learning in universities was interrupted until May 2020 and many questioned the quality, graduate and PhD students’ learning as continued online. The inequality between undergraduate students will be sustained and widened if this situation continues, universities must develop and apply concerted efforts to better use remote learning. In Ethiopia, the current pandemic challenges higher education institutions’ response to the crisis. Large sections of students have the least technology support, without government and universities support we may create a lost generation in the COVID-19 pandemic period. Therefore, the pandemic must be used as a turning point for Ethiopian universities to bring long-lasting changes.

Introduction

The outbreak of COVID-19 at the end of 2019 disturbed higher education learning at a global level, significantly affecting higher education, challenging communities of the institutions and threatening economic security (Bhagat & Kim, 2020; Currie et al., 2020; Mohammed et al., 2020). COVID-19 affects every aspect of the higher education system (Yang, 2020), many of the university staff jobs became questionable during the pandemic and as the virus spreads globally, face-to-face teaching and learning in higher education institutions is banned. Most universities changed the mode of learning from conventional to virtual learning, for example, universities in China are delivering online learning during pandemic outbreaks (Yang, 2020). Until the world experienced the strange environment of COVID 19, the application of e-learning in higher education was insignificant. In developing countries, online learning in higher education institutions was in its infancy, but the outbreak of Coronavirus changed this. In China, universities without online learning experience started e-learning to sustain students’ learning while institutions were closed (Yang, 2020). Pham and Ho (2020) stated that in Vietnam’s higher education, online learning is rarely applied for formal learning, but as the pandemic hits, it gets attention.

Higher education in its infancy, limited in numbers and less organized in Ethiopia. For instance, Abebaw (2014) states that in Ethiopia, higher education started in 1950 with limited experience and experienced limited development until 21st century. The enrolment rate of Sub-Saharan students in higher education is one of the lowest in the world accounting for around 5% (Bloom, Canning, & Kevin, 2006; United States Agency for International Development [USAID], 2014). Understandably, higher education institutions in Sub-Saharan countries are poorly structured and organized and one of the least researched and technology-supported in the world. Cognizant of this, institutions face challenges to deliver students’ learning using up-to-date technologies.

Methodology

Data were collected from the Federal Democratic Republic of the Ethiopian [FDRE] government public announcements, Ministry of
Health [MoH], Ministry of Science and Higher Education [MoSHE] (2020), and public universities. Exclusively, the paper includes publicized news information and mitigating measures to continue students’ learning remotely after COVID-19 hit institutions’ normal teaching/learning function on the specific date between March and October 2020. This study obtained government data relating to COVID-19 in national and regional media outlet sites and used ministerial-level office to collect data. From the ministers, 105 data points were generated, of these, 75 data points were generated from the ministerial level and 30 from regional bureau/departments. Regional data points were generated from the Amhara National Regional State [ANRS], which encompasses more than 10 public universities of Ethiopia. The study used MoSHE’s website, which disseminates information related to COVID-19 for higher education institutions and the measures they undertook. This was complemented with in-depth data collection from 10 of 45 public universities in Ethiopia. In ANRS, 10 higher education institutions were selected using purposeful sampling representing all generations of universities in Ethiopia. From the 10 public universities in the region, 132 data points were collected.

From the federal ministers, regional bureaus/departments and higher education institutions, a total of 237 data points were collected. All entries of data were organized by date and brought with web addresses. The data were coded according to the mitigating measures undertaken to their research, community services and teaching and learning activities. The research focuses on these areas as the major activities of higher education institutions in Ethiopia. All collected data points were assigned codes, however, similar data points may appear several times if the announcements spanned multiple codes. The data analysis indicated that in the March and October 2020 period covered by this study, the FDRE government, ministerial offices including MoSHE, regional bureau/departments and higher education institutions situation and context analysis, were shaping the response and implementation in line with emergency management literature in higher education. The response team ran from March 2020, after the first COVID-19 case was confirmed in Ethiopia; situation and context analysis ran from the end of March 2020 to the mid of April 2020; shaping the response covers from mid-April to the beginning of May 2020. Implementation of the mitigating measures cover until October 2020, the point at which data collection ended. In conducting this study, it is impossible to identify the exact date of transition from one-step to another but the phases could be detected by comparing actions taken by institutions involving educational provisions while the literature deals with crisis management. Depending upon this, the study aims to answer the following research questions:

- How the Ethiopian higher education institutions are responding to the COVID-19 pandemic to continue students’ learning remotely?
- What are the challenges facing higher education institutions in taking mitigating measures to the COVID-19 pandemic?
- How the COVID-19 pandemic changes educational decisions made by policymakers?

Findings

Impacts of COVID-19

In Ethiopia, the first COVID-19 case was reported in the second week of March 2020 (MoH, n.d.; Mohammed et al., 2020). Since the World Health Organization [WHO] (2019) declared the virus a global pandemic threatening the international population, the Ethiopian government made different attempts to contain the spread (Mohammed et al., 2020). It limited public gatherings, ordered school closures, directed high-risk civil servants to work from home and closed borders. The first case was a 48-year-old Japanese man who arrived in Ethiopia from Burkina Faso, the second report was three cases, two Japanese and one Ethiopian, who had contact with the first Japanese person (Mohammed et al., 2020). The government formed the task force leading the Coronavirus pandemic response. The Ethiopian Deputy Prime Minister chairs the task force, government officials show procedures, via the televised programme, in the use of hygiene, the importance of social distancing and staying at home. Routine activities like schooling, meetings and mass sports were banned for 14 days. With the exception of key workers, governmental and non-governmental workers were advised to work at home for 14 days. However, the virus spread and the government extended measures to contain the spread. In addition to extending measures already taken, the country passed decisions to close universities and students return home.

The government confirmed the virus spreading to provinces out of Addis Ababa, the epicentre of the virus and a state of emergency was declared. Currently, the country has tested 1,390,197 people with 88,434 confirmed cases. So far, 1,346 individuals have died and 42,099 people have recovered from the virus (figures taken from the MoH website as of 17 October 2020). To contain the spread of the pandemic, Ethiopians enforced an emergency law prohibiting meetings of more than four people. This pandemic leaves no sector in any country unaffected and its impacts will affect the upcoming periods (Marsi & Salzaleva, 2020). Although the virus has been malfunctioning the whole socio-economy system, this paper focuses on the educational situation of the country.

Where are Ethiopia’s higher education institutions?

There are 45 public higher education institutions in Ethiopia. The majority based in the regional areas of the country. Each of the nine regions has one institution, some more than one. Students’ learning is provided in regular, summer and distance programmes. More than 85% of university student intake in the different programmes is from the rural areas, from families with a farming background. H.E. students learn without laptops or desktop computers except very few students from rich urban families. At universities, students may have desktop computers in classrooms and the library but those students have neither access to nor the skill to use technology in their learning. Integration of ICT in teachers’ development programmes and the working environment is a feature of 21st-century classrooms and enhances the delivery of pedagogy (Mlambo, Rambe, & Schlebusch, 2020). Teachers’ technology application in the teaching and learning process in Ethiopia is one of the lowest in the world, higher education teachers also face a lack of technological input and skill. Except for a few teachers in first-generation universities, the majority have no internet access at home.

In the university environment, the homes students come from have several problems; the families live in poverty and spend their time with different activities for survival. Students in the summer spend their time helping families or engaging in incoming generating activities, only a few students in urban families may engage with their learning in campus off-season. Families are unable to afford the laptop or Smartphone cost for their higher education learning. Most students join the university without a smartphone and little knowledge of how to use technology to facilitate their learning as rural areas are without electricity and telecommunications facilities like a network and internet. Even so, the urban areas have problems with electricity off and on many times a day, and sometimes off for long periods, although there has been internet and network availability in urban areas, often interrupted. Internet and network are one of the most expensive in the world therefore, students from poor urban families may be unable to afford to assist their learning (Fekade, 2006). In nutshell, it is possible to say Ethiopia’s higher education institutions reside within the impoverished and least technologically equipped environments for being pro-active for the COVID-19 period.

Higher education students’ learning in COVID-19 period

After Abiy Ahmed, Prime Minister of Ethiopia, announced the
closure of schools for 14 days in mid-March 2020, higher education institutions also stopped classroom learning, teachers were advised to communicate with students via email or other electronic mechanisms. Libraries closed and students were unable to access materials supplied by respective course teachers because of a lack of laptops and smartphones. Evaluations of teacher-student communications via the internet to run learning became ineffective. Moreover, after 14 days, the MoSHE announced the closure of higher education institutions and students returned home as the virus spread.

From mid-March 2020, higher education institutions in Ethiopia closed and students’ learning was suspended, neither universities nor the ministry said anything to continue students’ learning (Mengistie, 2020). The outbreak of COVID-19 is not the sole problem of Ethiopia rather it is a global problem. However, in Ethiopia, students’ learning has been interrupted for longer than the official closure. Unlike Ethiopia, universities around the world continued students’ learning, using technologies. As the first country to report the COVID-19 case, Chinese universities had little time to prepare to become exemplary to continue students’ learning through innovating online education models (Wang, Cheng, Yue, & McAleer, 2020; Crawford et al., 2020), higher education institutions of Africa also continued on-line learning for students with the COVID-19. Institutions in Rwanda, South Africa and Tunisia have been collaborating with internet-providing companies to sustain the provision of students’ learning on-line as their universities closed from Coronavirus (Tamrat & Tefera, 2020). For example, the University of KwaZulu-Natal in South Africa is the first public university of students’ learning remotely. When India was under lockdown, higher education institutions adopted innovative methods to run learning online (Harsha, 2020; Babu & Jayakumar, 2020). Higher education institutions of Egypt, Cairo University and Alexandria University started early to provide students’ learning online after educational institutions were closed to curb the spread of the virus (Malkawi, 2020). As nations declared the closure of higher education, responsible bodies have attempted to sustain students’ learning remotely, mitigating the challenges of COVID-19 by adopting online learning within a short period after closure.

**Mitigating measures**

A few weeks after the closure, Ethiopia’s government devised radio and television learning for primary and secondary levels respectively, to save the education system from the COVID-19 wave (Mengistie, 2020). However, a month from the closure, students’ learning at higher education was unclear to students, parents and teachers. The Ministry of Science and Higher Education or universities adopted nothing to provide on-line learning, students and parents, specifically graduating ones, were confused about the silence of responsible bodies about their learning, but some graduate and Ph.D. students with thesis’ had contact with their advisors via email, though universities refrain from devising options to sustain learning.

On 16 April 2020, the MoSHE held a discussion with university presidents about ways to provide students’ learning remotely (MoSHE, 2020). The institutions took action to cope with the pandemic a month after the end of the closure. Their discussion focused on how to continue the interrupted learning of undergraduate, graduate and Ph.D. students out of face-to-face contact. As a result, the ministry directed the universities to continue graduate and Ph.D. students’ learning on-line. Teachers have been ordered to address courses for students who will take on-line learning in the best possible way. Ph.D. students who have already collected data are advised to communicate with their advisors through videoconference. Respective universities have been ordered to create a platform for the execution of on-line learning. However, weeks after this agreement, no university has reported the implementation of student learning for both graduate and Ph.D. students.

However, in the discussion, undergraduate students are recommended to stay at home, reading materials will be disseminated through websites and universities, nominated by MoSHE to co-ordinate the dissemination of materials. The MoSHE informed undergraduate students to prepare themselves by reading the modules, power points and reference books disseminated via websites. The MoSHE directed universities to use their best possible mechanisms to address material preparation and dissemination activities, the ministry noted partnership with Ethio-Telecom, the sole internet providing company in the country, to use zero-rating for education and research websites accessed by students and teachers. MoSHE implied the situation will become normal, the undergraduate students will return to university to continue their learning for a while. The discussion also indicated the universities will provide make-up classes to compensate for those missed. Although discussed by government and universities, these actions were not practiced until May 1, 2020. Though too late, the MoSHE’s attempt to cope with higher education during the crisis is encouraging. However, challenges hindering the students’ learning as suggested by the ministry have been raised by students, parents, experts and even by universities.

**Challenges**

It was worthwhile for the universities and MoSHE to adopt innovative ways to address learning. However, challenges are encountered by the novel provision of education by higher education institutions, which may arise from the external environment and within the universities. Higher education institutions of Ethiopia have a short period of history, its infra-structural development and organizational structure have been the lowest in the world, the universities reside in the region where the least research has been conducted and they may have no experience to manage this crisis. In human resource development, universities may face challenges of skilled human power to run learning with technology.

In the outside world, where students reside, the universities have a challenging provision for remote learning. More than 85% of university students in Ethiopia are from rural backgrounds (Trines, 2018). During closure, they are with their impoverished families engaging in agricultural or other labouring activities. By nature, online or remote learning needs technology and as referred to earlier, the majority of Ethiopian university students are unable to access or use the relevant technology. Internet and network problems might be the dominant challenge in the universities’ response to the education situation caused by the pandemic. With students at home, to manage online or remote learning, Ph.D., undergraduate, graduate, and Ph.D. students need internet access. Ethiopia provides an internet service at the world’s expensive prices that do not go hand-in-hand with students’ family economic status (Fekadu, 2006). It has to be remembered the large number of Ethiopian university students who come from the rural areas where there is no access to the internet and often intermittent or no power – even solar power. This pandemic is emphasizing the difference in status of the students. Inequality between elites from urban and the large segment of the population from the rural areas has been increasing, consequently most students need to be physically at their university in order to continue their learning, this crisis may create a ‘lost generation’ of graduates. Obstacles from external and internal environments of the universities may deter the response to the students learning in the COVID 19 pandemic period.

**Opportunities**

The Ethiopian government and higher education institutions could use the outbreak of Coronavirus as a turning point. In Australia, the pandemic imposes never before experienced challenges on many higher education institutions’ journeys, which opens opportunities to change the usual teaching-learning process (Currie et al., 2020). Stakeholders, including the government, must give due emphasis to the development of technologies and infrastructures in both rural and urban areas of the country. Ethiopia has to consider technological advancement as a basis for the development of the country rather than an alternative. It is the
right time to bring structural change in organizations and to form bureaucratically modified institutions in developing and applying technological innovations. The government’s allocation of resources for innovation and technological applications in educational pedagogy could be increased from now. The university learning situation caused by Covid-19 is fuel to the government’s response to bring change in service provision and infrastructure.

Universities too may take numerous lessons from this global pandemic in using COVID-19 as a lens to see the path of their future destination. Higher education in Ethiopia has relied on conventional, face-to-face teaching and learning as the sole means of provision, which is no longer working. Universities must take novel Coronavirus outbreaks as an opportunity to engage in research and technology to modernize and diversify their ways of pedagogical delivery and on-line or remote learning to become typical and easy for students. Universities should not wait to prepare staff for changes in creating the platform to apply technological advancements. To sum up, the current crisis in university students’ learning is a wake-up call for higher education institutions in Ethiopia to make long-lasting changes in their research and community service activities beyond improving teaching and learning activities.

Concluding remarks

Higher education institutions are important communities to impart skills, knowledge and attitudes for the economic development of the country. Though Ethiopian higher education is in its infancy, it has been contributing to raise the country out of poverty. Institutions have been one of the least developed, their participation in research and innovating new technologies is one of the worlds’ lowest. The wave of COVID-19 has endangered the existence of students’ learning in these institutions. For more than a month and two weeks from the closure, higher education students have been home suspended from learning. Other than discussions by MoSHE on the way forwards on students’ learning, no practical action has been taken. The limited application of technology in universities and the students and parents’ often impoverished rural life especially at this time, sustains or even widens existing inequalities between students. Undergraduate students must be back to their universities before COVID-19 creates a lost generation in higher education institutions of Ethiopia.

The outbreak of novel Coronavirus has been a lesson for Ethiopia’s government and stakeholders to act pro-actively on development activities for rural and urban areas. To support higher education institutions to develop and apply technologies for pedagogy delivery, higher education institutions must form a partnership with internet-providing companies and international higher education institutions to adopt innovative technologies to transform face-to-face and other conventional practices of pedagogy to e-learning. Ethiopian higher education institutions have to focus on human resource and infrastructure development through encouraging researches in technological advancement.

Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

Abebe, Y. (2014). Ethnic and Religious Diversity in Universities in Ethiopia. University of Tampere; School of Education.
Babu, J., & Jayakumar, P. (2020). Academic engagement of college students during the nation’s lockdown due to Covid-19. GIS Business, 13(4), 463–482.
Bhagat, S., & Kim, D. J. (2020). Higher education amidst COVID-19: Challenges and silver lining. Information Systems Management, 37(4), 366–371. https://doi.org/10.1080/10580530.2020.1824040.
Bloom, D., Canning, D., & Kevin, C. (2006). Higher Education and Economic Development in Africa. Africa Region: Harvard University; Human Development Sector.
Currie, G., Hewis, J., Nelson, T., Chandler, A., Nabasenja, C., Spaur, K., et al. (2020). COVID-19 impact on undergraduate teaching: Medical radiation science teaching team experience. Journal of Medical Imaging and Radiation Sciences, 518–527. https://doi.org/10.1016/j.jmir.2020.09.002.
Fekadu, D. (2006). Analysis of Determinants of Business Demand for Internet Access in Addis Ababa. MAThesis (unpublished).
Harsha, R. (2020). COVID-19 Lockdown-Challenges to Higher Education, Dr. Ambedkar Institute of Technology.
Maari, A., & Sabaleeva, E. (2020). Dealing with disruption, rethinking recovery: Policy responses to the COVID-19 pandemic in higher education. Policy Design and Practice. https://doi.org/10.1080/25741292.2020.1813595.
Mengistie, T. A. (2020). Impacts of COVID-19 on Ethiopia’s Education System. Science Insights Education Frontiers, 6(1), 569–578.
Ministry of Health. (n.d.). Ethiopia COVID-19 Monitoring Platform. October 17. 
<br>http://www.moh.gov.et/eicc/en/node/196> (Accessed 18 October 2020[online]).
Ministry of Science and Higher Education. (2020, March 24). MoSiHE minister s remarks on the media briefing about the students return to home to control COVID-19, 24 March 2020. Addis Ababa, Ethiopia.
Mlambo, S., Rambe, P., & Schlebusch, L. (2020). Effects of Gauteng Province’s educators’ ICT self-efficacy on their pedagogical use of ICTS in Classrooms. Hexylon, 6(1), Article e003730. https://doi.org/10.1016/J.hexlyon.2020.e03730.
Mohammed, H., Oljira, L., Roba, K., Yimer, G., Fekadu, A., & Manyazewal, T. (2020). Containment of COVID-19 in Ethiopia and implications for tuberculosis care and research. Infectious Diseases of Poverty, 9(131), 00753-9. https://doi.org/10.1186/s40249-020-020.
Pham, H.-H., & Ho, T.-T.-H. (2020). Toward a ‘new normal’ with e-learning in Vietnamese higher education during the post COVID-19 pandemic. Higher Education Research & Development, 39(7), 1227–1231. https://doi.org/10.1080/07294360.2020.1823945.
Tarmat, W., & Teferra, D. (2020). COVID-19 poses a serious threat to higher education. University World News, 9.
Trines, S.(2018), Education in Ethiopia. World Education News and Reviews. United States Agency for International Development (2014). African Higher Education: Opportunities for Transformative Change for Sustainable Development.
Wang, C., Cheng, Z., Yue, X.-G., & McAleer, M. (2020). Risk Management of COVID-19 United States Agency for International Development (2014). African Higher Education: Opportunities for Transformative Change for Sustainable Development.
Yang, R. (2020). China’s higher education during the COVID-19 pandemic: Some preliminary observations. Higher Education Research & Development, 39(7), 1317–1321. https://doi.org/10.1080/07294360.2020.1824212.