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INSTITUTIONAL RESPONSES TO COVID-19: THE CASE OF PUBLIC HIGHER EDUCATION INSTITUTIONS OF ETHIOPIA

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ABSTRACT

This study focused on describing the crises of COVID 19 and institutional responses to manage the crises in public HEIs of Ethiopia. A case study research design was employed to conduct the qualitative study. Respondents were purposively selected and the interview was used to gather adequate and relevant data for the study. The finding of the study revealed that HEIs lack institutional capacity and readiness to provide internet-based online learning; academic staffs and students also lack the experience, commitment, readiness, and competence to use online learning ; HEIs lack digital learning policies, plans, and resources, and absence of adequate ICT infrastructure and internet access to effectively respond to pandemic. Thus, it was concluded that online learning was not effectively practiced; delivery systems established were not inclusive and efficient in providing equitable access to the instructional needs of students. Thus, it was recommended that intuitional level digital/ICT /e-learning policies and guidelines need to be developed; autonomy needs to be granted to set directions, develop and implement emergency plans based on their local context. Besides, HEIs should revise and include ICT competency development in academic staff professional development programs, revise course delivery modalities, and intentionally include online courses for students.

Keywords: *COVID 19, Institutional Response, Higher Education Institution, Pandemic*

Introduction

The COVID-19 pandemic was initially a health problem. However, globally pandemic crisis has been posing extraordinary challenges on the social, political, and economic systems of the nation and societies. It also affects the day to day activities of individuals as well as institutions across the world. The educational intuitions are one of the most affected social institutions which need on the delivery of the education services to the society. The ongoing loss of life as well as the virus's ability to spread rapidly through communities, has generated a need for significant changes in the way educational institutions operate, educate and deliver services to their learners .

The impact of COVID 19 on nation is multidimensional in its nature. These days the pandemic is much more than a health crisis (OECD, 2020). The pandemic has brought significant effect on economic, financial, political and social lives of the society. The pandemic has also brought numerous critical consequences on global education system (UNESCO, 2020). To

minimize its consequence on education, different countries have been taking different measures. According to UNESCO (2020), so far policy response in all countries focused on avoiding the disruption of learning by the scaling up of radio and television delivered lessons, online educational services and the use of applications to support communication with learners and parents. However, in many countries, lack access to ICT infrastructure and technologies aggravate the digital divide between those students able to access remote learning applications and those without the necessary facilities at home (Raymond Douse, 2020). Particularly, this inequity among students is greatly magnified in the less developed countries like Ethiopia. In such countries, majority of students live in areas without even electricity, let alone computers and adequate internet connectivity which hamper their learning. Even in these countries, there exists a wide disparity among students with a higher income family who are able to access technology that can ensure education continues digitally at their home.

The pandemic also had an impact on social mobility or isolation of children and their parents. As the result of the pandemic, the social isolation of students and school dropout rates has been increasing due to the pandemic (Nicola, et al., 2020). Globally, though most students in around the world are out of school, different efforts have been made to provide education through using educational technologies. The same is true in Ethiopia. It is apparent that technology may pose a barrier to connectivity for students who live in more remote areas, or who do not have the means to maintain communications through digital devices.

Along with the poverty, the crisis of the pandemic can result in multiple forms of discrimination and exclusion of students at all levels from education. Inequity in access to the internet and technology infrastructures to support remote learning for all learners has become clearly evident in developing countries. Students from low income, educational background, and rural areas, disadvantaged and vulnerable groups of the society are highly affected by the pandemic crisis. Lack of access to educational facilities, technologies or limited access to learning resources leads these students to poor learning. Thus, addressing the gaps is one of the major challenges where the education system in general and HEIs in particular have been facing.

Today HEIs are challenged to provide quality of education to their learners. Currently, the schedule as well as way of delivering the education is very much challenged because of the pandemic as well as the inability of the system to effectively cope with the emerging problems because of various reasons. Currently, there are signs suggesting that HEIs are unable to effectively respond to the pandemic in addressing the educational needs of their

learners. Particularly, absence of adequate technological infrastructure and tradition ways of teaching culture affects the teaching leaning process. It is obvious that the spread of the virus is forcing the global education community to step away from their usual work and enforce them to identify alternative ways to continue learning. It also necessitates educational institutions to launch alternative approach mainly digital leaning which involves connecting every educational institution and learners to the internet. It also demands educational institutions in general and HEIs in particular to blended their teaching and learning modalities which consists of the regular face to face learning and create online platforms (e-learning) to support learning in classrooms and at their home.

In order to effectively respond to the education crisis, HEIs need to rethink and renovate the traditional method of teaching. They have to develop innovative teaching and learning strategies, create collaborative and cooperative working culture. They have to also establish and implement integrated approach to education and effectively work with stakeholders. HEIs need to develop their institutional capacity and enhance the collective readiness to pandemic crises. They have to also recognize that the barriers to education do not lay solely in education and highlights the importance of working across sectors for long-term solutions. Creating effective collaboration mechanisms and establishing strategic partnership with different stakeholders particularly in mobilizing human and non-human resources also critical in reducing the impact of the pandemic on HEIs. The dynamic nature of the pandemic should also be recognized as it poses great challenge on delivering education in HEIs.

In Ethiopia, immediately after the government announced the closure of educational institutions, the then Ministry of Science and Higher Education has decided and suggested HEIs to facilitate and provide education to students through virtual learning using internet based technologies. Following the decision, different efforts were made by HEIs to provide education online to HEIs students. Effort also made to support the traditional face to face teaching and learning process with technology assisted online learning. With all its problems and challenges, the classroom teaching learning has been supported by online learning modalities in HEIs. However, the online learning was not successful as it was intended since majority of educational institution lacks adequate ICT infrastructures and readiness; instructors and students lack the necessary technological skills and experiences to effectively use the technology.

In Ethiopia, currently HEIs have been exerting their maximum efforts to access students through online learning modalities thought more than 80% of the Ethiopian population lives in the rural areas with

limited or no access to electricity and internet access. It was well recognized that most of students in public universities are from poor and rural areas of Ethiopia. As a result, they lack computers, have limited or no internet access to support their learning. These inequalities in educational, technological resources along with the poverty might leads to unequal access to online learning which also contribute to widening the existing gap among students from rural and urban as well as from poor and well-to-do family. Unless the disparity systematically and effectively managed, it might affect the learning pace and life chances of many already disadvantaged students.

Even though technology-assisted education has many potential benefits for learners, there are also potential problems that need to be systematically examined and addressed to minimize the gaps. Thus, educational experts need to be conscious in minimizing the inequalities that will be created because of unequal access and poor interventions strategies to adapt to the new form of learning. Thus, the concerned experts have to take into consideration the relevant stakeholders at all levels, the teacher, the local community, the diverse needs of the learner and the available technology (Gyamerah, 2020).

In relation to this, the study conducted by Young Lives in India, Ethiopia, Vietnam and Peru (Marshall and Moore, 2020) show that access to the digital world is highly unequal. The finding show that groups of children, who are often already disadvantaged in education, particularly poorer children living in rural areas, and in some contexts girls, are less likely to have access to a computer or the internet. In HEIs, ensuring all students had the necessary access to educational technologies is critical and a pressing issue. Lack of commitment, motivation and resources to support students to participate in technology supported internet based learning are emerging challenges of HEIs. On top of this, creating equal access to all students and achieving equity through internets based online learning and other mechanisms are major challenges that HEIs have been facing today.

Similarly, Dawit (2020) indicate that children from digitally illiterate and poor family are left behind in their learning. The author further state that there were already pre-COVID-19 inequalities in access to quality education between children in urban and rural localities, and children from parents with higher and lower socio-economic status. The sudden shift from traditional teaching method to online learning strategies as the result of the closure of schools could further increase the inequalities between the advantaged and disadvantaged children. Particularly, absence of accessible and affordable low cost educational technologies and infrastructures also another problem which

challenge the effectiveness of the online educational delivery in HEIs. With all the above challenges, educators in educational institutions, students and parents are striving to continue education and bring the situation to normal conditions.

The Young Lives study indicates that there is uneven distribution of internet access and the skill need to use it (Marshall and Moore, 2020). Young Lives finding show that there is a remarkable difference in access to technology between rich and poor families. The study further indicates that differences exist between the rural and urban in using and having access to computer and internet connections. For instance, in Ethiopia, 81% of rural children in the sample have never used the internet. Similarly significant number 17 % of children don't even know what the internet is. The study further revealed that, the digital access also considerably varies by family wealth and location. Besides, it was also found that there was a gender inequality in access and utilization of internet to support their learning. According to the study, boys are relatively better than girls in using computer, internet and other forms of technologies regularly. In short, it is less likely that internet supported online virtual learning able to reach all HEIs students in the rural areas and students from low income families. Thus, it is argued that internet supported online learning could further aggravate the preexisting inequalities among learners from different socio economic background unless HEIs effectively manage and respond to these inequalities and learning needs of learners.

In order to effectively respond to the existing and emerging problems of COVID 19, the preparation and readiness of HEIs is crucial. Because of the sudden outbreak and complexity of the pandemic the preparedness of HEIs community to work in such unprecedented circumstances was weak. Evidence show that HEIs in Ethiopia lack institutional capacity to effectively respond to the pandemic. There were no policies, plans and strategies to effectively address the diverse needs of students during such crisis. However, evidences show that after the emergence of the pandemic a lot of efforts have been made to minimize the direct and indirect effect of the pandemic on the health, educational and social lives of the society. Collaborative efforts were made on creating the awareness of the society, sharing timely information on the prevalence, transmission and prevention mechanisms have been made. Besides, HEIs have been closely working with different stakeholders to address the possible risk of the pandemic on health and education of the leaners.

During such crisis, institution based localized decisions has paramount importance to maintain the health, safety and well-being of students and staff. Besides, staff should also actively engage in different activities to minimize the potential

impact of the pandemic on education during the crisis. HEIs should serve as source of reliable information for the community. Particularly, enhancing the awareness of the staff, local community and the society in general through providing timely and accurate information to key stakeholders i.e., teachers, students and families about the pandemic severity and magnitude of the disease as well as how they can cope up with problems in post recovery period .

On top of this, setting and implementing innovative strategies to deal with the problem and constantly updating the university community on the protection or mitigation strategies, pandemic illness and information about actions are crucial in minimizing the impact of the pandemic on the education. Moreover, HEIs have to effectively communicate and ensure that what they have established with students is sustained. Integrating university wide efforts and working with concerned bodies to determine the strategies and information needed, understanding how, what, and when information can be shared to the community also paramount importance to minimize the impact of the pandemic on the health and education of the society. HEIs have to well prepared and effectively predict the potential impact of the pandemic on students' education. Establishing strong and consistent collaboration with other institutions and creating strategic partnership with other institutions enables the institutions to cope up with the problems. Effectively promoting and communicating preventive actions for all staff, students and the larger community also important to minimize the possible impact of the pandemic on students learning. Besides, supporting and developing the capacity of university community on how to protect themselves and others also crucial in reducing the potential impact of the pandemic.

In order to alleviate the problem, HEIs should have an emergency or crisis management plan that enable them effectively manage when such crisis happened as well as to enable them effectively respond to multiple emergencies in the system . HEIs should also develop long-term strategic plan as well as short-term action plan that enable them closely work with other local institutions and authorities. To be effective, HEIs should also mobilize adequate resources and professionals who can provide support and guidance to university community and the larger society.

Global experiences on the disruption of COVID 19 show also that HEIs have been exposed to many different and significant short-and long-term challenges which affect their operation online learning within the context of COVID. Among the challenges, lack of adequate institutional resources, poor utilization of technology, weak personal commitment and competences of staff and students were the major challenges which might affect the implementation of

online learning. Effective delivery of technology supported online learning demand among other things improved infrastructure to support online and blended learning models (Russell, et al . , 2020). In many HEIs, blended learning mode of delivery mainly practiced though issues of equity, infrastructure, broadband capacity, and pedagogic capacity emerged as major challenges affecting the effectiveness of technology assisted learning practices in HEIs. Efforts also made to use other forms of distance learning such as telegram channel and email delivery to return the assignments where broadband internet access is limited to support student learning in HEIs.

Similarly, huge efforts have been deployed by HEIs to cope up with the challenges of the pandemic. Institution-wide task forces were established to mitigate the impact of the pandemic on health and education. Practical experiences show that HEIs have been mobilizing their scarce resources to minimize the negative impact of the pandemic on the society. Even though there are differences among the HEIs, in almost all HEIs attempted were made to renovate the information and communications technology to support students and deliver under and postgraduate courses online. Despite the efforts, the process created inequality in educational access and quality of educational services among those HEIs that have better ICT infrastructure than others as some HEIs by far better equipped and experienced than others. The difference also visible among students within the same institutions as students from the rich who live in urban able to afford the cost and the poor in rural areas who cannot afford the cost to access the internet (Mohamedbhai, 2020). As opposed to the challenges, the pandemic also provided opportunity to all higher education institutions to quickly assess their institutional capacity and improve the ICT infrastructure of their institution to support the day to day operation and student learning.

In short, in addition to institutional capacity development, the effectiveness of technology assisted online teaching and learning process demand adequate and advance preparation of teaching and learning materials by professional who have the required knowledge, skills and experiences in instructional design, pedagogically trained able and willing instructors to deliver the program as well as creating equal online learning opportunities for all the students to support their learning . Thus, this study focused on analyzing and understanding the crises of COVID 19 and institutional response to crisis in higher education institutions of Ethiopia. In light of this, the study attempted to achieve the following objectives

- How Public Higher education respond to the crises of the pandemic?

- How the strategies used by HEIs effective in creating equal educational access?
- What opportunities and challenges HEIs faced because of the pandemic?

Materials and Methods

The study is purely qualitative and case study research design was used to conduct the study. The design enables the researcher to focus on specific issues, gather detailed and in-depth information for analysis of the problem under the study (Yin, 2003). For the study , adequate and relevant data were collected from six sample randomly selected universities namely Jimma university , Gonder university, Aksum university, Assosa university, Diredawa university and Dilla university. Primary data were gathered from top level officials of sample universities through telephone interviews. Semi structured interview guide questions were developed and an in depth interviews were conducted with five university presidents and one vice president randomly selected from the four clusters of universities. In the study, purposive sampling technique was used to select respondents. The technique enables the researcher to select the appropriate respondents that can provide adequate and relevant data for the study. Based on their position, universities top officials were selected purposely as they can provide detailed information about the problem under the study. The qualitative data gathered through interview were narratively analyzed. For analysis and interpretation of data thematic areas were first identified and then analysis and interpretation also made concurrently following the thematic areas (Bogdan & Biklen, 2007).

Results and Discussions

This section deals with results and discussions of the data gathered from sample respondents of public higher education institutions of Ethiopia. It presents and discusses qualitative data gathered through telephone interview from sample respondents. The section begins with discussing institutional responses followed by opportunities and challenges of COVID 19 in HEIs.

It is well recognized that immediately after the outbreak of the pandemic, many countries in the world shifted from face to face learning to online technology assisted learning and then blended learning modalities as an immediate response to mitigate and cope up with the problem. The higher education institutions of Ethiopia also are not exceptional. In Ethiopia, online mode of delivery also initiated to deliver courses online for higher education institution students. Like other poor countries, the issues of equal access to technology, poor ICT infrastructure, limited internet connections and pedagogical capacity of instructors were immediately emerged as challenges of online learning modality. In order to mitigate the problems,

efforts have been made in HEIs to cope up with this difficult situation of pandemic crisis. Regarding the efforts, findings show that the HEIs across the country immediately established institution-wide task forces and took actions to mitigate the impact of the pandemic on health of the society as well as students learning. On top of this HEIs also actively engage in research activities to understand the complex nature of the virus, its impact on society and means of alleviating its effect on the lives of people. Efforts also made to shift traditional face to face teaching to online distance learning through different forms of technology assisted methods.

Since the outbreak of the pandemic was sudden, the preparation of HEIs to effectively respond to COVID-19 short, medium and long term health, social and education related crises were not strong as it was intended at institution and nation levels. The high spread and significant impact of COVID-19 among other things demand advanced preparation and the development of policies, guidelines, plans and coping strategies at institutional and national levels. It also demands HEIs to engage in different activities like sensitization and mobilization of the public and different resources. The data reveled that HEIs have established different task forces and perform different activities that enable them minimize the spread and impact of COVID 19 on education, social , economic and health related problems of the larger community. It was found that HEIs in collaboration with different government and non-organizations and the community have been actively engaged in short, medium and long term preparations to minimize the impact of the crisis on individuals, institutions, community and the nation.

The finding of the study further revealed that various orientation and awareness raising programs were organized to enhance the understanding of students, university and local community on causes, transmitting and preventing mechanisms of the COVID 19. Awareness raising activities have been made in variety of ways in HEIs. Brochures, banners, billboard, university websites, facebook, mass media like radio and television, social media like telegram, multilingual mobile , telecommunication line and free telephone line were used to reach and enhance the awareness of the community on the impact of pandemic on the society.

Task forces and ad hock committees were established to coordinate and perform different COVID related activities. The taskforces were effective in mobilizing and engaging volunteers, development partners, government and non government organizations in different activities like providing free service, collecting and organizing resources, facilitating and equipping quarantine, providing vaccine and treatment center that can accommodate suspects and confirmed cases of COVID 19.

Even though it was not adequate, hand wash, alcohol and sanitizers were produced and distributed to local communities. At university level, research teams also organized and engaged in different researches activities. COVID related research articles were reviewed and presented to academic community. Public lectures on COVID 19 were organized and professional discussions were made in some universities. Partnerships were also established with local, national and international organizations to minimize the spread of the pandemic and reduce the possible health, economic, social and educational related impacts on the community.

In some universities, treatment centers were furnished with relevant laboratory and other crucial equipment and started functioning. Data also revealed that the COVID 19 suspected and confirmed cases were admitted to the treatment centers. Promising activities have been made to manage and control the incoming citizens and the spread of the virus at a boarder. However, these universities are challenged by lack adequate institutional capacity to accommodate and effectively respond to the large number of citizen passing the boarder. Different income generating activities were also made to generate and collect different kinds of resources to support the community. Evidences show that large amount of financial and material resources were mobilized from private owners, local community members and university staff to support community members who are economically poor and can be easily affected by the pandemic crisis. However, it was found that HEIs had no adequate preparation to manage health and educational related crises of the pandemic. The finding further revealed that contingency or crisis management plan was not developed to minimize the impact of the COVID 19 on students, institutional and the larger society. Besides, academic staff and students were not psychologically ready to continue education through online learning.

It is well recognized that educational technologies are considered as a tool which has been serving for different purposes in human life including teaching and learning. In today's digital era, it is imperative to integrate technologies into education system to improve the learning process and support student progress. Integrating technology into education system is critical in knowledge intensive and technology era of the 21 century where information is available online and critical resource. It is believed that the success and effectiveness of technology integration in every facet of education system largely depends on the extent to which it involves relevant technologies and professionals within and outside the system.

Globally, advantages of integrating information communication technologies in the teaching and learning are well recognized since it supports and enables

learners to acquire relevant and up-to-date scientific knowledge and develops their problem solving capacity. However, in most of developing countries like Ethiopia, there has been serious knowledge and skills gaps on what and how technologies can be appropriately integrated into educational system to support students learning. The success of any educational technologies partly depends on efforts of stakeholder in the process and the suitability of the technologies to address the individual and instructional problems of the countries. Technologies also help to identify weakness, provide ample opportunities and enable concerned bodies to take appropriate measure on time for the betterment of the educational service to support student learning.

In HEIs, the use of technologies as a learning tools demand access to educational technologies to students like other learning and teaching educational materials. Otherwise, technology supported learning will not be effective in supporting students learning. During such pandemic online learning modality is believed as a better technological solution since it encourages self-directed learning from a distance. However, affording and availing technological infrastructure and internet connections to students to facilitate learning in educational institutions are challenge for developing countries like Ethiopia.

Regarding online learning, the findings of the study revealed that universities were not adequately prepared in advance and capable to effectively deliver online or virtual learning to majority of their students. It was found that investment made on ICT and e-learning platform was limited and was not well developed to support virtual learning in HEIs. Besides, there were no ICT policy and legal framework which guides the implementation of virtual learning in most of HEIs. It was revealed that before COVID 19, the information communication technology infrastructures and internet capacity were very limited and unable to entertain the online learning needs of their students and staff. It was found that since the emergence of the COVID19, different activities have been made to deliver internet based online learning to students. However, HEIs lack adequate ICT infrastructure and low internet capacity to effectively deliver the courses and reach all students. Besides, academic staff and students lack adequate ICT competence, commitment and experience to effectively use virtual learning.

In support of the above ideas, the institutional self-assessment also revealed that the ICT infrastructure and internet connections in HEIs are poor which cannot accommodate the academic staff and students teaching and learning needs. The data also show that students and instructors lack adequate know how on how to integrate and use existing and emerging technologies

to support teaching and learning process. However, the pandemic also created some the opportunities for HEIs to reassess the status of their eLearning practices , academic staff competences and willingness to use instructional technologies to support and integrate into learning and the overall institutional ICT capacity to deliver online learning. It also motivates and initiates HEIs to offer technology oriented instruction by integrating available technologies in to their day to day operations and learning activities to address the learning needs of students.

To overcome the immediate impact of COVID on teaching and learning process, HEIs have been working very closely with different national and international organizations that enable them provide and support their students online on virtual learning modalities. In almost all HEIs, efforts have been made to develop institutional e-learning capacity, improve ICT infrastructure and upgrade internet capacity that enable them provide online learning. Besides, e-learning trainings were given to academic staff to develop their ICT competencies to use e-learning platform. However, the finding of the study indicates that HEIs start online leaning without adequate preparations. In relation to this, one of the respondents states the practice as follows:

> *.... we have been providing online teaching services to our students. We found that the modality is plausible for graduate students. However, it would be difficult to apply it to the vast number of undergraduate students (unless the infrastructure is made easily accessible to all students). The main reason is that students may not have access to online facilities (both in terms of physical availability and cost) particularly for those leaving in rural areas (Interview # 2, June 2020).*

The above qualitative data show that HEIs are attempting to use virtual leaning technology to support to the traditional teaching and learning modalities to deliver courses mainly to post graduate students. The implication is that the capacity of the institutions in creating equal access to all students is limited. This might affect students learning and create educational inequality among learners. These demand among other thing the intervention of government and active stakeholders' engagement to avail internet connections and ICT infrastructure to reach and support students learning. Particularly, those who are coming from poor families and rural areas need support to reduce inequality and improve access to online learning. It was also recognized that HEIs have been delivering online learning to postgraduate students within difficult situation using different formats. Regarding challenges and

efforts so far made to deliver online learning, one of the interviewee states:

> *…… we have been aggressively working to improve institutional capacity to deliver online learning and reach our students using different formats. It is really a challenging time for us since we didn't anticipate and experience such crisis before. We were challenged very much by weak ICT infrastructure, poor experiences and skills of our students and academic community to apply virtual learning (Interview # 2, June 2020).*

Similarly another respondent also states his worries and concern of virtual learning mode of delivery as follows:

> *In our university more than 60% of students are from low income families and disadvantaged communities where there is no internet connectivity and ICT infrastructure that support student learning. I am afraid that most students do have access to laptop, tablet and mobile phone as well as IT equipment at their home and in the campus. Besides, they lack the knowledge, skill and experiences to effectively use online learning that might affect the effectiveness of virtual leaning (Interview # 1, June, 2020).*

One can understand from the above data that HEIs lack the institutional capacity and readiness to scan and understand the internal and external environments that enable them set proactive strategies to effectively deal with such educational crisis through virtual learning. The result also shows that most HEIs students are unable to access online learning materials and actively engage in virtual learning. This implies that virtual learning was not properly takes place and independent learning has been poorly practiced in HEIs.

To improve the situation, HEIs have been exerting their effort to enhance the accessibility of students to online learning materials. Even though, it is at earlier stage, online e-learning platform was developed to provide learning opportunities to students. However, poor investment on ICT infrastructure, weak network connections and absence of ICT competence on the part of instructors and students challenged the effectiveness of the virtual learning. However, with all its limitations, HEIs have been using and improving e-learning platform and other communication mechanisms to deliver learning. In relation to the problem, another respondentcommunicate his worries as follows:

> *....really I am very much worried about our students' education. I am worried about those students who live in rural areas and their home environment is not conducive for learning, lack access to internet connections and ICT infrastructures (Interview # 1, June 2020).*

The above data further depict that students lack equal access to ICT infrastructure, internet connections and learning materials. The implication is that online (or virtual learning) will create learning inequalities among students coming from different socio - economic background unless appropriate and timely learning interventions are taken to minimize the inequalities .

The finding of the study also revealed that efforts have been made to develop individual and institutional capacity to deliver online virtual learning to reach all students. Regarding investment so far made one of the interviewee states:

> *…immediately during COVID crisis, our university has limited institutional capacity to deliver virtual learning because of limited investment on ICT infrastructure, staff and students to use technology based online learning . Initially, we were unable to reach majority of our students though online learning. However, recently we have been improving the situation by making an investment on development of ICT infrastructures, upgrading internet connection and developing the capacity academic staff of the university (Interview # 2, June 2020).*

The above data clearly show that efforts have been made by HEIs to give temporarily solutions through making slight improvements on institutional and individual capacity to deliver online learning. However, it is apparent that the development of ICT infrastructure that enable HEIs to provide online learning demand huge and long term investment of resources as well as integrated efforts of different stakeholders.

The findings of the study clearly show that HEIs are less prepared and developed to provide internet based online learning. The scarcity of educational and technological infrastructure has been affecting the delivery and effectiveness of online learning. Lacks access to educational technologies, smart phones, laptop computers and internet connectivity that support independent learning at a distant also another pressing problem which affect the effectiveness of online learning in HEIs .

In short, in HEIs educational technologies are not well integrated in to teaching and learning process and academic staff lack

adequate training on how to teach using modern educational technologies. The integration of educational technologies did not consider the potential applicability and anticipated costs to deliver and improve educational practices in HEIs. Besides, academic staff was not adequately prepared on how to use existing and emerging technologies to support their teaching and learning practices. The implication is that academic staffs need to have adequate knowledge base, skill and trainings on innovative and technology assisted pedagogies. This also demands HEIs to reconsider and redesign the training and professional development of academic staff in a way that integrate modern technologies into teaching and learning process. In general, technology- assisted teaching and learning environments is a missing element in HEIs of Ethiopia.

Regarding the challenges, the finding of the study revealed that COVID 19 has posed a number of challenges that have been affecting the day to day operations as well as the effectiveness of online (or virtual) learning in HEIs. It was found that an increased stresses and frustrations experienced by the HEIs community mainly because of unpredictable and complex nature and the rapid spread of the pandemic , absence of clarity and adequate understanding on short, medium and long term consequences, and absence of strong coping strategies during and after the pandemic , weak coordination among stakeholders to prevent the spread of the pandemic , lack of adequate institutional capacity and inadequate resources to effectively respond to the crisis, psychological problems/ frustration among university community, high people movement /traffic at the border, absence of proactive preparation in advance, limited institutional capacity , limited ICT infrastructure and internet access, limited students and teachers experiences , knowledge and skills to use online learning were also reported as the major challenges which have been affecting the day to day activities and overall performance of online learning HEIs.

As opposed to the challenges, some opportunities were identified as a result of COVID 19 in HEIs. The study found that the pandemic created opportunities to students to independently learn, exercise and get the chance to explore technology oriented online learning. Academic staffs also got the opportunity to learn new skill and experiences to use and apply internet assisted learning approach. In addition, HEIs also able to challenge the traditional mode of teaching and learning approach and look alternative internet/ technology assisted online teaching and learning approaches.

In short, because of the pandemic crisis the university community has been starting using different technologies to run their day to day activities. Particularly, academic staffs are attempting to use and incorporate

instructional technologies into teaching and learning process. It also encourages academic staff to learn and practices different learning technologies as well as look for new/different/alternative ways of teaching and learning. Besides, it also create opportunities to individuals and institutions to engage in self-assessment , understand and develop institution wide capacity (human and technological development), rethink and create alternative approach (or online mode of delivery) to deliver learning to reach students at a distance.

In general, the COVID 19 crisis has created opportunities to introduce new learning modes that can reach every student, make the system more innovative, flexible, adaptable and creative learning environments that can challenge the traditional ways of teaching and learning in HEIs. It also promotes creativity and innovations to continuously and collaboratively improve the teaching and learning process using online learning technologies.

Conclusions

These days, COVID-19 is forcing HEIs to think beyond their usual working practices and enforce them to identify alternative ways to continue technology assisted online learning. It also necessitates HEIs to launch alternative approach mainly practicing online and blended learning modalities. It enforces HEIs to develop their capacity and improve ICT infrastructure and internet connection. It also promotes HEIs to create online platforms for supporting student learning which complement the classroom instruction. I also promote the role of teachers as facilitators of learning and develop fundamental skills which teach students how to individually learn. It was understood that HEIs have been supporting their students, staff and larger community during this difficult time. They have been engaging in different activities to minimize the possible impact of the crisis and address the educational needs of students.

Providing effective education outside the traditional classrooms setting however, demand huge investment on ICT, internet and human capacity development, effective coordination and making careful decisions which consider the needs of individual, institutional and local context. However, the results of the study show that HEIs lack adequate capacity and readiness to provide internet based online learning to many of students. Most of academic staffs and students are not close to technologies and lack the experience, commitment, readiness and competence to use virtual learning in HEIs. Besides, HEIs lack policies, plan, resources and limited ICT infrastructure and internet access to effectively respond to the crisis. Thus, it is safe to conclude that online (or virtual learning) is not effectively practiced because of low institutional capacity of HEIs. Besides, the online deliver systems established in HEIs are not

inclusive, inefficient and did not provide equitable access to instructional needs of students and promotes inequality among students. In short, though there are promising efforts, HEIs are still unable to effectively respond to the pandemic crisis in addressing the educational needs of their learners, society and the nation at large.

Implications for policy and practices

The following suggestions were made to mitigate the problem and improve the online teaching learning process in HEIs. At national level, policy framework and guidelines need to be developed and effectively communicated to enable HEIs to effectively respond and manage the health, social and educational related crisis during and after COVID crises. HEIs should also develop and implement institutional online learning policy/framework /guideline to inform, support, and guide the university communities on how to effectively respond to the educational needs of learners during the pandemic. Besides, HEIs need to be given adequate autonomy to set directions, develop and implement emergency plans based on their local context; generate and pool emergency funds or grant to cover the costs related to the COVID 19 crises in their institutions.

The Federal government should also give due attention to the development of ICT infrastructure as well as internet capacity, and look for low cost internet service for education. Thus, it is suggested that government should allocate adequate budget and invest on national and institutional ICT development, create collaboration with development partners and concerned organizations to upgrade the ICT capacity of HEIs. The government should also look for options to reduce the cost (or free) of internet services for education so as to bridge the growing inequity among students.

The finding of the study revealed that little attention was given in providing academic staff with adequate training that enable them provide efficient onlinelearning. However, to be effective academic staffs ICT competence need to be developed and they have to easily adapt new online /e-learning platforms and able to engage students. Thus, it is recommended that HEIs should revise and include ICT competency development in academic staff professional development training and development program , revise student course delivery modalities and intentionally including online courses each semester for students to provide them experiences and competence to apply technologies .

Online and e-learning will be effective when there is adequate electricity, internet connectivity, computers and tablets, and physical spaces to work. HEIs should mobilize and organize ICT grant to support online learning, avail assistive technology applications and improve institutional ICT infrastructure and internet connections to support learning.

This time communication is difficult with some university students as they have limited access to technology and internet connections. Most of students are living in rural areas where there is no internet access, computers, smart phones and even electricity to continue online learning. Thus, in orders to address learning inequality and increase students access to technology the university in collaboration with international and national development partners should look for low cost ICT devices , use existing and emerging educational technologies , software , equipment's and internet access to students within and out of universities campus .

It is obvious that the involvement of key stakeholders in different activities is critical to effectively respond to COVID 19 health and educational crisis. Academic staff and students need to have the leading role in preparing and implementing rapid and innovative responses to the current COVID crisis on education. Particularly, academic staff and students will have a crucial role in the recovery phase when schools reopen, assessing students' progress and making sure that learning gaps are addressed quickly. Thus, HEIs should use participatory approach to develop institutional responses/plans by involving and active participation of academic staff, students, and local community. The management of the pandemic crisis demands integrated efforts and collaboration among health, social, economic, education and other sectors. Thus, HEIs need to create effective strategies and collaborate with all concerned bodies to minimize the impact of the health, psychological, economic and educational related crisis.

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