Pitfalls of adopting e-teaching at the onset of COVID-19 Pandemic in Ethiopian Public Universities: Lessons for the Future from the Past

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Abstract: *COVID-19-driven school closures have affected the teaching-learning globally in various countries. At the onset of COVID-19 pandemic, a stay-at-home order was in effect in Ethiopia and universities went on lockdown. As a result, higher education institutions in the country have been striving to adopt remote teaching. However, the transition from the usual face-to-face instruction to technology-based instruction (remote instruction) has seemed to be problematic. This study, therefore, sought to explore the pitfalls of adopting remote teaching (e-teaching) in Ethiopian higher education institutions. To achieve the study's objectives, an explanatory research design was employed involving academic staff, e-learning focal persons, and instructional leaders. The study was delimited to five geographically scattered public universities and data were gathered using three different instruments: documents, a questionnaire, and in-depth interviews. The study identified that even though implementing bodies (the Ministry and universities) initiated remote teaching at the epicenter of the pandemic, the key implementers (academics) encountered challenges in adopting e-teaching. Technological facilities, systemic linkages, digital pedagogy skills, and instructional leadership of e-teaching were identified as the major pitfalls (likely mistakes/problems) associated with adoption of e-teaching during the pandemic in the sample universities. Based on the results, conclusions were drawn, and recommendations were made.*

Keywords*: digital-pedagogy; e-teaching; remote instruction.*

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1 Background

According to Huang et al. (2020), a novel coronavirus known as COVID-19 was discovered in the last month of 2019 at a seafood market in Wuhan, China. The outbreak originated in China right in the middle of Chunyun, a 40-day festival (in 2020, from 10 January 2020 to 18 February) centred on the Chinese Lunar New Year, which represents the largest annual migration of people on the planet (Abiad, 2020). Concerns about the pandemic were evident prior to 31 December 2019, when Beijing first notified the World Health Organization (WHO) of the outbreak. On 11 March 2020, the WHO declared COVID-19 to be a global pandemic (WHO, 2020). Since the outbreak of COVID-19, it has spread rapidly across the globe. After two years, on 12 March 2021, the disease had spread to 223 countries (areas or territories), with 118,058,503 cases and 2,621,046 deaths. In early December 2020, the first mass vaccination programme started, and as of 10 March 2021, a total of 300,002,228 vaccine doses have been administered (WHO, 2021). At the time of finalizing this paper on September 01, 2022, a total of 600,555,262 confirmed cases of COVID-19, including 6,472,914 deaths was reported to WHO. As of 23 August 2022, a total of 12,449,443,718 vaccine doses have been administered (WHO, 2022).

The first confirmed case of COVID-19 in Ethiopia was reported on 13 March 2020. The victim was a 48-year-old Japanese citizen who had come to the country on 4 March 2020 from Burkina Faso (MoH, 2020). The number of COVID-19 victims in Ethiopia initially grew very slowly. For example, the number of cases from the beginning of the pandemic on 13 March 2020 to the end of April 2020 was insignificant (approximately 10 people). This number rose to 17 on 6 May 2020; most of the victims were returnees from Djibouti (7) and Somali Puntland (6). The number increased to 29 on 7 May 2020. The figure rose progressively to 35 (later reported as 34) on 18 May 2020. In two months, the country had reached more than 230 cases. After two years, on March 13, 2022, there were 469,184 confirmed cases of COVID-19, with 7,486 deaths reported to the WHO (WHO, 2022).

According to data released by United Nations Educational, Scientific and Cultural Organization (UNESCO) (2020), 1 billion learners worldwide, from preschool to university, were not able to attend teaching establishments temporarily as a result of the pandemic. Globally, more than 1 billion children are at risk of falling behind due to school closures aimed at containing the spread

of COVID-19 (UNICEF, 2020). Even if some countries have begun to partially reopen primary schools, the threat of the disease has continued.

With effects across the globe, the COVID-19 pandemic has impacted teaching-learning in Ethiopia even though the higher education system is now characterized by rapid institutional and student enrolment expansion at both the undergraduate and postgraduate levels. The Ethiopian higher education was facing serious challenges during the onset of COVID-19 pandemic. That is, COVID-19-driven university closures have impacted teaching-learning in Ethiopian higher education. After the government announced school closures, including sporting events and public gatherings, for 15 days on 16 March 2020, all schools were shut down for an extended period (approximately eight months). Moreover, although classes were reopened after the school closures, teaching-learning occurred under abnormal conditions.

The government of Ethiopia has come up with new initiatives to use information communication technologies in the higher education system during the COVID-19-driven university closures. However, the infrastructure related to information technology and instructors' familiarity with e-learning authoring tools and platforms have been questionable. For instance, as part of their response to COVID-19 disruptions, the then Ministry of Science and Higher Education (MoSHE) and universities have been taking action to support learners in continuing their education remotely, which has resulted in a paradigm shift in pedagogy. Having reopened classes, the MoSHE and universities have also encouraged instructors to prepare online content and to deliver blended lessons by reducing conventional face-to-face instruction. Nevertheless, university students in most parts of the country have been obliged to stay at home, where distance learning has not been arranged. In addition, many students do not have access to technology or a suitable learning environment at home; that is, access to the internet and devices that students use to employ online learning seems to be limited. Instructors' familiarity with e-learning authoring tools and platforms has also been problematic. This means that equity and access to learning for all seem to be undermined by pandemic-transformed pedagogy. This study, therefore, sought to explore the pitfalls of adopting remote teaching (e-teaching) in Ethiopian public higher education institutions. More specifically, the study attempts to address the following basic research questions:

1. What were the crisis-mitigation measures taken by public universities with regard to ICTs infrastructure and staff capacity building?
2. To what extent did academics use technology at the onset of the pandemic?
3. What were factors that affect universities' adoption of e-teaching at the onset of COVID-19 pandemic?

2. Research Methodology

2.1 Research Design and Conceptual Excerpts

To achieve the objectives of the study, an explanatory research design with a qualitative approach in the main was employed. Quantitative approach was used as a supplement. The research approach is geared towards planning and conducting the research process with those people whose life-word and meaningful actions are under study (Bergold and Thomas, 2012).

The historical perspectives of distance learning depicts that it has evolved in the United States and England over the last three centuries (Palvia et al, 2018; Kentnor, 2015). According to these scholars, it started in 1728 when Caleb Phillipps proposed to teach shorthand via exchanging letters with students throughout the US. After sometime, radio and television course delivery systems followed the parcel post approach and this was consolidated the launch of a federally licensed radio station in 1919. In the 1990s distance education grew rapidly because of the advance of the online technical revolution (Auf and Hamdi, 2021).

The practice of distance/ correspondence education in Ethiopia goes back to 1950s when the then Ministry of Education and Fine Arts established an audio-visual center in co-operation with USAID with the objective of developing senior secondary correspondence courses for adults working in various ministries, factories military organizations (Karanja, 1997). The practice has been developed into higher learning and diploma and degree programs has been operationalized, especially in private institutions.

At the onset of COVID-19 pandemic, distance/ remote learning has been widespread across the globe. Counties initiated emergency remote learning/teaching since the disease is contiguous and has unpredictably been spread throughout the world at alarming rate. Thus, as the World Bank (2020) acclaims, school closures are a critical pillar of the social distancing tools to mitigate the

spread of the disease and avoid an acceleration of cases that will put a strain on health services. Bearing this in mind, Ethiopia declared school closures soon afterwards the first coronavirus case was confirmed. Regarding the higher education, the then MoSHE announced a mandatory university closures and students were obliged to go back to their homes. During university closures, face-to-face instructions were suspended and universities were instructed to deliver lessons remotely through a variety of online platforms and electronic textbooks (MoSHE, 2020a). The study, thus, attempted to assess the crisis-mitigation measures taken by public universities with regard to ICTs infrastructure and staff capacity building which may lead them into adaptation of educational technologies to provide technology-assisted lessons and to introduce new learning content.

What is more, to adopt effective remote teaching, it is essential to devise a clear e-teaching implementation plan and to build a good e-teaching culture among instructors and students. Moreover, as Basak, Wotto and Bélanger (2016) proposed, it is wise to identify the following key factors for successful e-teaching/ e-learning in higher education institutions.
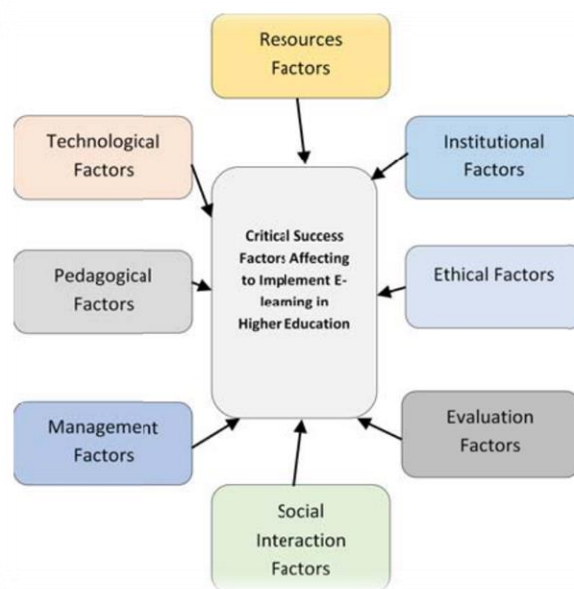
Source: Basak, Wotto & Bélanger, 2016, p. 2409

Figure 1. Critical Success Factors for implementing e-learning in higher education.

Since the introduction of e-education, several scholars identified important factors to implement successful e-learning. Most of them have taken learner, instructor, information technology and organizational support as key factors for successful implementation of e-learning (for instance, Selim, 2007; Sun et al, 2008; Malik, 2010; Frimpon, 2012, Basak, Wotto and Bélanger, 2016, as cited in Raman et al, 2019). For the present study, a model proposed by Basak, Wotto and Bélanger (2016) was adopted in order to identify the major pitfalls (likely mistakes/problems) associated with adoption of e-teaching during the pandemic. As shown in the figure above, eight factors can be considered for effective implementation of e-learning in higher education. During, the study, efforts were made to examine resource factors (availability of ICTs, connectivity and electric supply); pedagogical factors (digital pedagogy); institutional factors (needs assessment, financial readiness, leadership strategy and learning culture); and evaluation factors (content development process, delivery and usability of LMS).

2.2 Research Setting and Participants

The study was conducted in five geographically scattered public universities in Ethiopia (Addis Ababa, Bahir Dar, Dire Dawa, Hawassa and Jimma universities) which have learning management system (LMS). Academic staff of these universities were the target participants of the study. The study also involved ICT directors, e-learning focal persons and instructional leaders. Mixed sampling techniques were used to select the participants. That is, while academics were randomly selected, ICT directors, e-learning focal persons and instructional leaders were selected purposefully based on their role to facilitate e-teaching. Overall, the study involved 275 participants (250 academics, 5 ICT directors, 5 e-learning focal persons and 5 instructional leaders (academic vice presidents).

2.3 Instruments of Data Collection

To gather data for the study, three different instruments, viz., documentary, questionnaire and in-depth interview were used. That is, documents, such as guidelines for handling remote learning, webpages contents of the universities, and written correspondences were reviewed and analysed digitally. Considering COVID-19 pandemic, a questionnaire was administered to academic staff using Google Forms between December 2021 and January 2022 when the number of confirmed cases were at the highest stage in Ethiopia. In-depth telephone interviews were also conducted

with academic vice presidents, ICT directors and e-learning focal persons.

2.4 **Data analysis**

Both qualitative and quantitative data analysis techniques were carried out to analyze data and results were interpreted and discussed in relation to the research questions and the conceptual excerpts of the study. To analyze quantitative data, descriptive statistics, such as frequencies and percentages employed, as generated by the Google Forms. Qualitative data were analyzed using MAXQDA software package. Interviews were audio-recorded and transcribed verbatim in Microsoft Word format. Then, transcriptions were organized and imported to MAXQDA software as one document. After that, files were distributed in a predefined document that was created in the document system. After importing the document, the coding process was undertaken and the contents of the document were grouped into thematic sub-groups, such as mitigation measures taken during the COVID-19 crisis, the practices of e-teaching during COVID-19 pandemic, state of academics to use technology and factors for successful e-teaching/ e-learning in higher education institutions (please see Figure 2). Sub-categories were also formed for the last group. No labeling was used to identify individual respondent's view since the analysis did not focus on informants' individual conceptions.
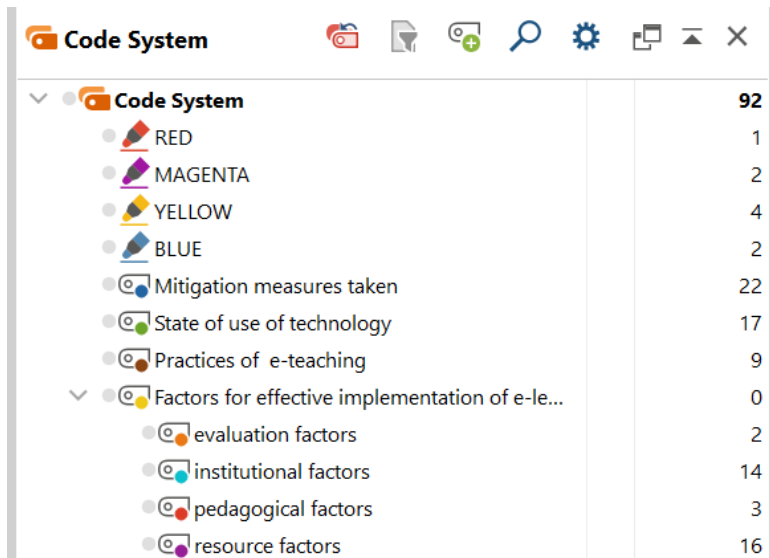

Code System	92
RED	1
MAGENTA	2
YELLOW	4
BLUE	2
Mitigation measures taken	22
State of use of technology	17
Practices of e-teaching	9
Factors for effective implementation of e-le...	0
evaluation factors	2
institutional factors	14
pedagogical factors	3
resource factors	16

Figure 2. Code System

The order of the categories was formed based on the research questions and different colors were assigned for each category to differentiate between different conceptions in the visual analysis tools (Figure 3).
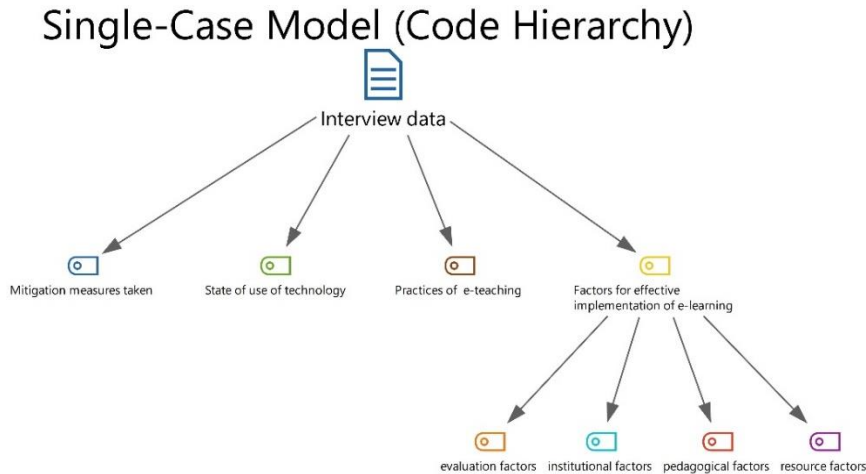

Figure 3. Code Hierarchy

Unit of meaning was also taken as a unit of analysis; that is, one or more sentences with a common meaning was included into a category and sub-category (for instance, please see Figure 4).
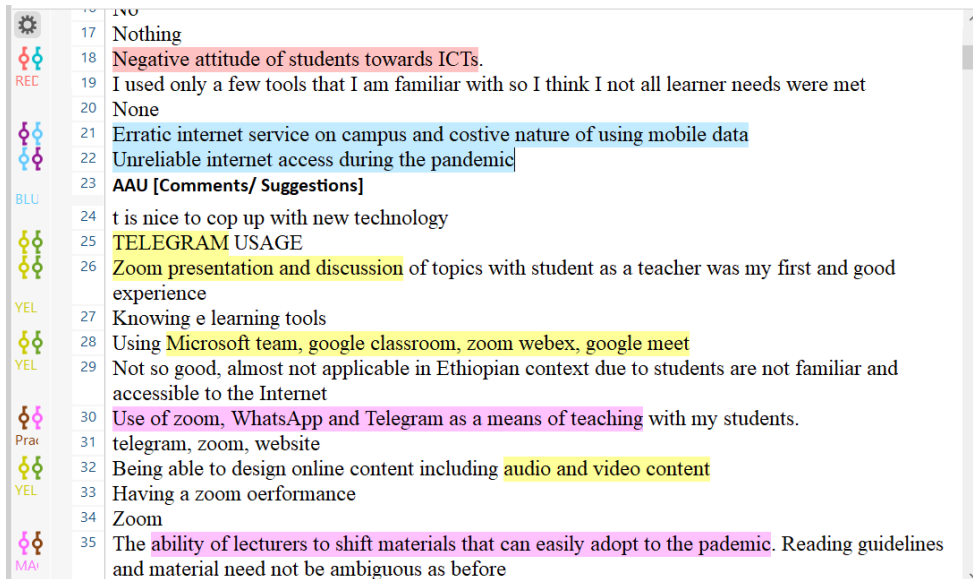

Figure 4: Example of a coded segment from interview data

Meanwhile, documentary data were also systematically reviewed and sorted out based on the objective of the study. Then, the files of documentary sources were imported into MAXQDA and

grouped according to the following thematic sub-groups: letter communications, website contents on COVID-19 and higher education, researches on COVID-19 and higher education, ICT4E policies, and directives and guidelines for implementing e-teaching during COVID-19, as shown in Figure 5 below. And the contents of the documents were grouped into the code system as categorized in the interview data.
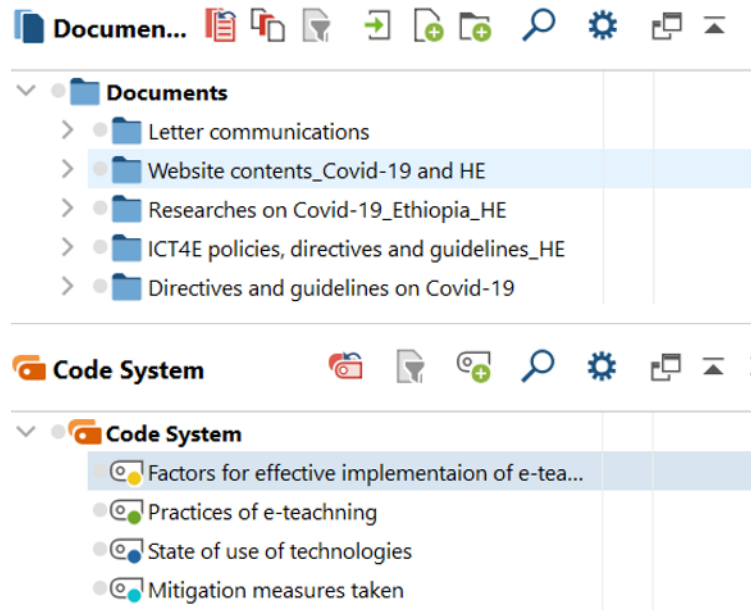

Figure 5. Documentary data organized in the thematic folders and code system

3 Results

This section is devoted to the presentation and analysis of results of the study under four sub-sections. The first sub-section presents the demographic background of the respondents while the second sub-section addresses the crisis-mitigation measures that the sample universities have taken during the COVID-19 crisis. Results related to state of academics' use of technology at the beginning of the pandemic are presented in the third sub-section. The last sub-section deals with factors that affect universities' adoption of e-teaching at the onset of COVID-19 pandemic.

3.1 Demographic Background of Respondents

As was said, the study was conducted in five public universities in Ethiopia (Addis Ababa, Bahir Dar, Dire Dawa, Hawassa and Jimma universities). The universities were selected on the base of stratified sampling and the availability of learning management system (LMS) in the universities. The universities were geographically scattered; they are located in the central, northern, eastern, southern and western parts of the country. To collect relevant data, a questionnaire for online survey was designed using 'Google forms'. Then, an email message was written to the Office of ICT Director of the respective universities in order to circulate the link of the online survey among the Universities' community. The Offices disseminated the link through group email accounts of staff. Responses were accepted for about two months between December 2021 and January 2022 and 207 valid responses with 82.80% response rate were obtained from the online survey. Respondents were from different colleges and institutes of the universities with various disciplines. Table 1 below summarizes the academic staff respondents' background information.

Table 1. Academic staff respondents' background information

Descriptions	f (%)	Descriptions	f (%)
Universities:		Qualification:	
Addis Ababa	60(29.0)	PhD	126(60.9)
Bahir Dar	35(16.9)	Master's degree	71 (34.3)
Dire Dawa	33(15.9)	Bachelor degree	10 (4.8)
Hawassa	37 (17.9)	**Total**	**207 (100)**
Jimma	42 (20.3)		
Total	**207 (100)**		
Sex:		Current academic rank:	
Female	59 (28.5)	Full professor	4(1.9)
Male	148 (71.5)	Associate Professor	37(17.9)
Total	**207 (100)**	Assistant Professor	69(33.3)
work experience in higher education institutions:		Lecturer	83(40.1)
		Graduate Assistant	14(6.8)
less than 1 year		**Total**	**207 (100)**
1-5 years	2(1.0)	Academics' internet access at home:	
6-10 years	19(9.2)		
16-20 years	65(31.4)	Yes	192
11-15 years	35(16.9)	No	(92.8)
16- 20 years	40(19.3)	**Total**	15(7.2)
> 20 years	46(22.2)		**207 (100)**
Total	**207 (100)**		
Types of internet connection academics have:		Academics' use of synchronous (at the same time) text chat or voice over tools at home or work place:	
DSL (digital subscriber line)	15(7.2)		
Cable broadband	17(8.2)		
Fiber optic broadband	7(3.4)		
Wireless/Wi-Fi broadband	80(38.6)	Occasionally	37(17.9)
Satellite/mobile broadband (mobile data)	36(17.4)	A few times a week	37(17.9)
		Every day	130(62.8)
Missing system	52 (25.1)	Missing system	3(1.4)
Total	**207 (100)**	**Total**	**207 (100)**

As shown in Table 1 above, the participants of the study comparably responded to the online survey, Addis Ababa University (29.0%), Bahir Dar University (16.9%), Dire Dawa University (15.9%), Hawassa University (17.9%) and Jimma University (20.3%). The majority of the respondents were males (71.5%); female respondents consisted of only 28.5%. This might be due to the fact that the majority of academic staff in sample universities is male. Most (60.9%) of the respondents were PhD degree holders. Master's degree holders consisted of 34.3%. The data further showed that many of the respondents (31.4%) had 16-20 years of working experiences in higher education institutions, and 22.2% of them had experience of 20 years and above. The result further indicated that the academic rank of most (40.1%) of the participants of the survey were lecturer, whereas 33.s% of them were with rank of assistant professor. As shown in the table, most of the academics had internet access at their home (92.8%). Wireless/Wi-Fi broadband was the

types of internet connection most of academics had (38.6%). The majority of them also rated that they used synchronous (at the same time) text chat or voice over tools every day at home or work place on Facebook, WhatsApp, Messenger, Imo, Viber and Telegram (62.8%).

In addition to academic respondents, the study involved ICT directors, e-learning focal persons and academic vice presidents (five persons from each university). While the qualification of the academic vice presidents was third degree (PhD), the qualification of ICT directors and e-learning focal persons was second degree. Furthermore, most of the vice presidents had more than 20 years of experience in higher education, but the experience of most of the ICT directors and e-learning focal persons ranged from 10 to 20 years.

3.2 The crisis-mitigation measures taken

At the epicenter of the virus, the then MoSHE wrote a letter to 45 public universities dated 16 March 2020, which imposed a university-wide lockdown for two weeks and initiated distance learning options. The ministry urged all universities to discontinue face-to-face teaching-learning and to deliver lessons through email communication and any forms of online learning (MoSHE, 2020b). The ministry further organized online forums on how to utilize e-learning to alleviate problems related to the pandemic. The Ethiopian Education and Research Network of the MoSHE has also made teaching and learning materials available on its e-learning portal/website (EthERNet, 2021). Followed by MoSHE's initiatives, universities encouraged academic staff to continue teaching remotely through a variety of online platforms and electronic textbooks. Most universities took e-teaching as a crisis-mitigation measure financed the digital curriculum and materials. They also advocated the implementation of e-learning using their learning management systems and organised a series of training sessions on online learning. For instance, universities like Addis Ababa, Bahir Dar, Hawassa and Jimma prepared a hands-on training on online collaboration Google Suite Tools, Google Meet, Zoom and other online delivering tools. As shown in the Figure 7 below, they, moreover, upgraded their e-learning portals and developed guidance manuals for teachers and students. A number of teaching-learning materials (lecture notes, modules and supplementary reading materials) have been made available using the portals in *Portable Document Format* (*PDF*), Microsoft PowerPoint (MSPP) and Microsoft Word (MSW) formats since the onset of the pandemic.
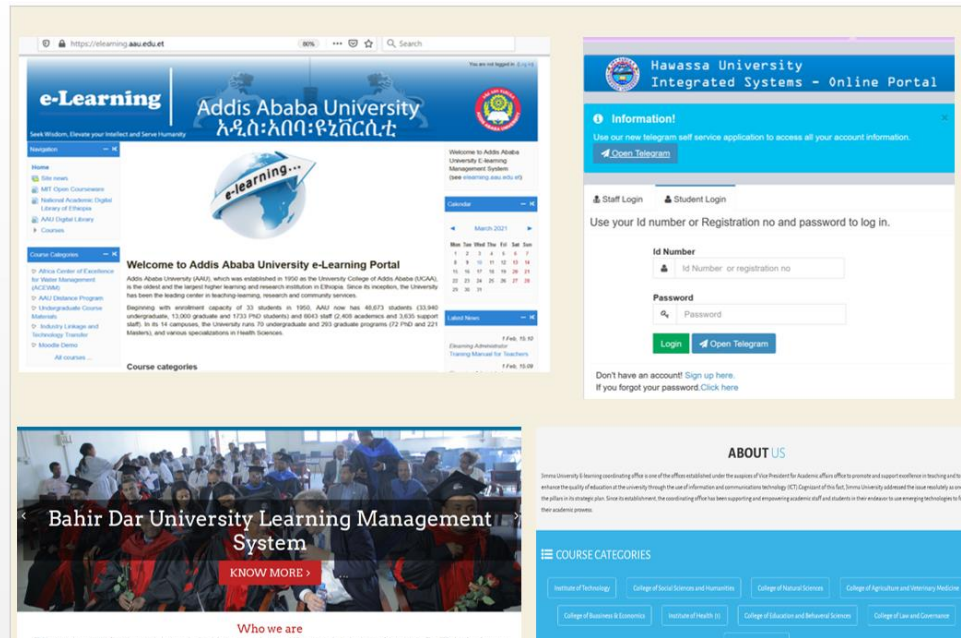
Figure 7: Screenshot of e-learning portals of sample universities (accessed on 10 January 2022)

According to interview held with e-learning platform focal persons, the universities collected existing lecture slides and handouts from instructors and made them available on the universities' LMSs during the pandemic. For instance, an e-learning focal persons pointed out, "The University collected lecture slides and soft copies of handouts from instructors and uploaded them in its e-learning portal to be available for students during the pandemic." However, faculty members during the interview mentioned that they rarely used their universities' learning management portals for their practices of e-teaching. The response obtained from one of the respondents to the open-ended question strengthened this. He stated, "There was no clear direction set by the university to use the e-learning portal of my university. I, personally, used my own tools and took my own assumptions to deliver the courses in a very efficient way possible…." Instead, instructors mentioned that they consistently used communication tools, such as Zoom, WhatsApp, Telegram and Google meets. They further said that they employed blended mode of e-teaching; they delivered their classes face-to-face taking the necessary health measures. Followed by, they integrated ICT with the face-to-face classes.

Meanwhile, faculty members were requested to rate their level of satisfaction with the mitigation measures the universities have taken using a four-point rating scale measurements (1=highly

dissatisfied; 2=dissatisfied; 3=satisfied; 4=highly satisfied) with 1 being to the least rate and 4 being to the highest rate. Results are presented in the table underneath.

Table 2. View of academics on their university's integration or adaptation of instructional technologies during COVID-19 pandemic

To what extent are you satisfied with the following measures that your university has taken during the pandemic?	N	Mean	Std. Deviation	Std. Error Mean
3.1 The steps that the university takes to minimize the impact of COVID-19 pandemic on the teaching-learning	201	2.84	.669	.047
3.2 The university's effort to implement distance learning strategy in response to the COVID-19 crises	201	2.71	.741	.052
3.3 The university's effort to provide ongoing education using technologies when universities are closed	202	2.63	.788	.055
3.4 The preparation of guidelines for use of the technology in the teaching-learning process during COVID-19 crises	200	2.57	.806	.057
3.5 Online forums/meeting that the university organizes as a means of mitigation during the pandemic	200	2.56	.901	.064
3.6 Any hands-on trainings (for example, designing and delivering e-learning courses) that the university provides during the pandemic	197	2.63	.801	.057
3.7 The university's effort to make available teaching-learning materials on its e-learning portal/platform	201	2.59	.856	.060
3.8 The infrastructure related to information technology at the university	199	2.56	.856	.061
3.9 The university's revision of course materials to suit to e-learning	200	2.41	.840	.059

As shown in Table 2, mean score of most of the respondents are marginally closed to the response rate 3(satisfied). That is, instructor respondents rated that they were satisfied with the steps that the universities took to minimize the impact of COVID-19 pandemic on the teaching-learning. They tended to acknowledge the universities' effort to implement distance learning strategy in response to the COVID-19 crises. Nevertheless, the majority of them rated that they dissatisfied with the universities' revision of course materials to suite to e-teaching (*Mean*= 2.41).

From the data obtained it can be inferred that there were initiatives to provide ongoing education using technologies during the pandemic. The Ministry and the universities took e-teaching as a crisis-mitigation measure at the onset of COVID-19 pandemic. However, the required arrangements were not made to frontline workers (faculty members).

3.3 Academics' use of technology at the onset of the pandemic

During the study efforts were made to explore academics' technology adaptation at the onset of the pandemic. That is, the participants of the study were requested about the types of ICTs they adapted while they were teaching during the pandemic. Furthermore, they were requested to indicate the major e-leaning tools they frequently used at the time of COVID-19. The summary of responses of faculty members concerning the e-learning resources they adopted is illustrated below**.**
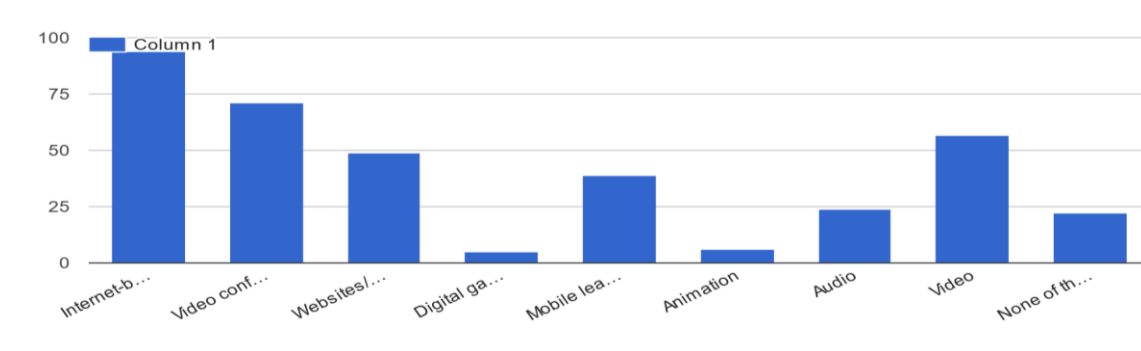

Figure 8: Major e-learning tools academics used frequently at the time of COVID-19 pandemic

As shown in the figure above, the majority of the instructors indicated that they adopted internet-based resources to deliver their courses. Basically, they delivered video lessons. The data obtained through the interview items also supported this. The ICT directors, e-learning focal persons and instructional leaders were interviewed about faculties'/ academics' adaptation/ use of technology during COVID-19 pandemic. Most of the interviewees articulated that internet-based lessons were widely employed by their faculty members and video contents were mostly used. They further mentioned that ICT gadgets, such as laptop computers and smart phones were utilized to create and delivered video lessons. Wireless or Wi-Fi broadband was the internet connection type the majority of the instructors used.

In the survey, efforts were also made to examine instructors' background of using e-learning content authoring tools. The results revealed that most of the academics were familiar with e-learning content delivery and authoring tools, such as YouTube, Google Suites and Microsoft Office Suites. Only few of them had an acquaintance with Camtasia, which is a widely used e-learning content authoring tool. Actually, some of them (17%) reported that they were not familiar with any of the authoring tools.
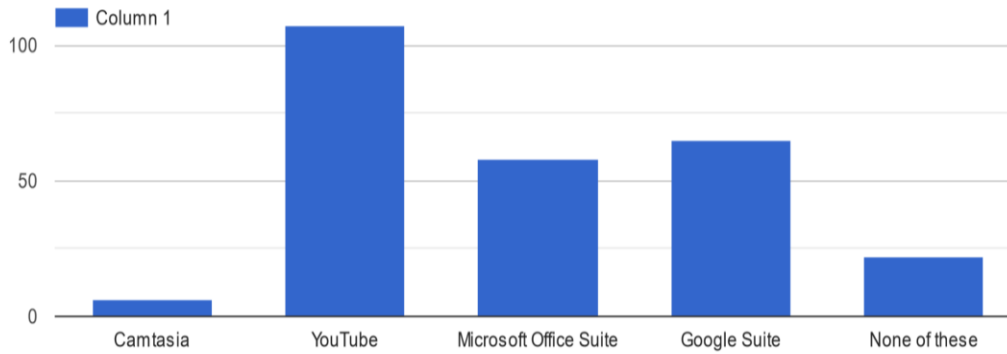
Figure 9: e-learning content authoring tools that academics are familiar with

Overall, based on the responses of instructors, ICT directors, e-learning focal persons and instructional leaders it can be said that web-based (internet-based) instructions were practiced at the onset of the pandemic. And video lessons were the most frequently employed instructions.

3.4 Factors that affect universities' adoption of e-teaching at the onset of COVID-19 pandemic

Different factors can play a great role to facilitate or hinder in adopting e-teaching. As has been said, factors like resource, pedagogical, institutional and evaluation and the like can play a major role in technology-based instructions (Basak, Wotto and Bélanger, 2016). Bearing in mind facilitating and inhibiting factors for adopting e-teaching, efforts have been made to identify the major problems of adopting e-teaching at the onset of COVID-19 pandemic in the sample universities. And the following major problems were identified among others.

a) Resource factors

During the study faculty members repeatedly articulated that inaccessibility of ICT gadgets, having unreliable internet access and providing electric supply were the major challenge to adopt e-teaching as,

Almost all students do not have technology gadgets, such as computers and smartphones the e-teaching require. Even, I don't have laptop; I used to use my desktop. The Internet connectivity is poos for student who live around rural and satellite areas. Moreover, most of video conferencing platforms like Microsoft Teams and Zoom are not effective on smart phones when the screen or presentation…. The Internet is not available all the time. The data bundles are also so expensive to deliver e-teaching outside my university…. There is also problem of electric power supply. Even, the eclectic power supply at campus level is not promising; there are frequent power outages in campus let alone outside the university…Limited internet connection, and lack of smart classes were our challenges.

The responses obtained from e-learning focal persons and instructional leaders also support this. For instance, they talk about the digital divide. They underlined that there was a gap between those students who have access to modern information communication technologies and those who do not. This is also seen among instructors. Respondents sated that there was a gap between veteran staff and newly hired staff in teaching using technologies. That is, most of the seasoned faculties preferred to teach in the conventional instruction taking health protocol measures.

It is to mean that unavailability of ICT gadgets, poor Internet connectivity and absence of electric power contributed for improper utilization of e-teaching.

b) *Pedagogical factors*

It is a fact that adopting e-teaching requires instructors' knowledge of the technology along with their subject matter and pedagogical knowledge. It requires the professional competency of academics, such as the use of instructional technologies, how e-teaching differs from the accustomed conventional classroom teaching, how to manage and administrate the technology, etc. Having this in mind, efforts were made to explore faculty member' professional competence while they were adopting e-teaching during the pandemic. As the results shows, academics' professional competency (digital pedagogy) in adopting e-teaching was identified as a major problem. The following respondents' responses are evidence for this. Faculty members described that that they were confident enough to teach their course using technologies, but they had problem of professional competence to employ e-teaching in effective manner. For instance, a faculty respondent mentioned, "I know nothing about how to design and develop e-courses. But I know what to do as an instructor. I don't have a good knowledge and skills of using Zoom and other

communication tools, for instance." Another instructor respondent also articulated that "I have a problem of how to use technology-based instructions remotely. Even most instructors have not the necessary skills of how to design and deliver e-courses. That is why most of us simply share the existing course materials digitally on Telegram and WhatsApp."

The responses of interactional leaders (academic vice presidents) supports this. They mentioned that the e-learning was suffered at epicenter of COVID-19 pandemic since instructors' knowledge of how to use the technology-based instructions in their lessons were minimal. E-learning focal persons also shared their responses as,

> Ok, when we are talking about adopting e-teaching, there are some problems, especially the senior staff. They are afraid of adopting e-teaching or e-learning. They don't have confidence. For example, they fear that the e-teaching may not reach to their students…. It's difficult to say all of the instructors have competence to work with technology since adopting e-learning requires innovative pedagogies…. I don't think they have competency to adopt e-teaching that is why instead of using instructional technologies they used the traditional way of teaching…. Teachers do not have any background about how to design, develop and deliver e-courses. They only know talk and chalk….

In fact, some e-learning focal persons and instructional leaders believed that the pandemic itself contributes to teachers' professional competency since it introduces e-learning delivering tools, such as Zoom, Teams, Google Meets and others. They pointed out that pandemic makes the instructors knowledgeable by adopting some technological tools.

The above results revealed that lack of instructors' professional competency (pedagogical factors) seemed to hinder the effectiveness of e-teaching during the pandemic.

c) Institutional factors

Absences of conducting needs assessment, poor financial readiness of universities, lack of proper leadership strategy of the e-teaching and the accustomed learning culture were among the major problems respondents mentioned. That is, almost all faculty members mentioned that needs assessment was not conducted in adopting e-teaching. Institutions simply enforced their faculties to adopt e-teaching at the time COVID-19 pandemic. Instructional leaders also mentioned that adopting e-teaching is costly. Universities were not ready to adopt e-learning. E-learning focal

persons, similarly, stated that universities were not ready to subscribe applications like Zoom. They simply persuade their staff to teach using Zoom.

Furthermore, most of instructors indicated that the remote teaching (e-teaching) was not properly led. The response of one of the respondents is an example of this. He had to say, "There was no clear direction set be the university on how the courses should be delivered. I, personally, used my own tools and took my own assumptions to deliver the courses in a very efficient way possible."

This is to mean that institutional factors hampered the adoption of e-teaching at the sample universities at the onset of COVID-19 pandemic.

d) Evaluation factors

During the study, an attempt was made to assess the mitigation plan and guidelines for handling the remote teaching. As has been said, the Ministry initiated universities to implement remote learning (e-teaching) during the COVID-19-driven university closures. Universities also prepared guidelines for guidelines for handling e-teaching. In order to look into the systemic approach to implement the remote teaching (e-courses development process, delivery and usability of LMS), and to identify the problems encountered, documents were reviewed and interviews were made with the respondents. The results are presented as follows.

As far as the documents reviewed and responses of the informants are concerned, the mitigation plan set by the Ministry without involving frontline practitioners, considering the interest of students, teachers, parents and other school community. One of the interviewees replies strengthen this as:

> What I want to comment is that there should be a cooperative work between the Ministry and universities. You see, the Ministry set mitigation plan to the pandemic without involving universities. Universities, moreover, set guidelines and persuade facility members to deliver classes without consulting them. The implementation of the e-teaching lacks coordination. No one also assessed the practices of e-teaching.

Another respondent also mentioned, "Administration should take the necessary steps to address the poor internet connection on campus before launching e-teaching."

From the above results it seems that there is lack of systemic approach to adopt the e-teaching at the onset of COVID-19 which embraces its practices.

2 Conclusion

Based on the findings of the study, it can be concluded that the experience of the COVID-19 pandemic has provided an abundance of lessons for adopting e-teaching in the higher education system of the country. The initiatives made by the Ministry and universities to adopt e-teaching at the onset of the pandemic was encouraging though the required arrangements regarding ICTs infrastructure and staff capacity building were not made. It is to mean that there was the mismatch between the intended and the actual e-teaching. According to the data obtained, it can also be said that academics adopted web-based (internet-based) remote teaching at the epicenter of the pandemic. What is more, the major factors that affect sample universities' adoption of e-teaching during COVID-19 pandemic were found to be closely linked with problems like resource, institutions, pedagogy and evaluation system. That is, factors like unavailability of ICT gadgets and poor Internet connectivity, lack of instructors' digital pedagogy, inadequate leadership strategy of the e-teaching and poor evaluation approach seemed to negatively influence the effectiveness adopting the e-teaching.

In a nutshell, it is reasonable to conclude that even though implementing bodies (the Ministry and universities) initiated remote teaching at the epicenter of the pandemic, the key implementers (academics) encountered challenges in adopting e-teaching. Technological facilities, systemic linkages, digital pedagogy skills, and instructional leadership of e-teaching were identified as the major pitfalls (likely mistakes/problems) associated with adoption of e-teaching during the pandemic.

3 Limitations and Implications

The study can be taken as a beginning to explore pitfalls of adopting e-teaching in the study areas. It has a good lesson for the future from the past. However, since the study involved limited participants with inadequate time length for collecting data, results of the study might have been influenced by the time at which the study was conducted.

Meanwhile, it is believed that the idea of remote teaching/e-teaching has significant implications for for Ethiopian higher education in general. As there is something special and different about teaching with or without technology, it is necessary to train academic staff regarding the connections between technology, content and pedagogy. The idea of 'connectivism'- learning by making connections- should be capitalized for quality remote teaching, we need to facilitate students to learn from what is in the world's brain. Above all, universities should also capitalize the usability of e-learning tools rather than their nobility.

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