Challenges and Implications of Online Education in Higher Education Institutions in Addis Ababa during COVID-19 Pandemic Lockdown- from the Perspectives of Teachers,

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ABSTRACT

This study investigated the challenges that higher education (HEI) teachers faced during the COVID-19 pandemic lockdown and their implications on the quality of online teaching, advising, and assessment processes, and competency of graduates. The study found that the most dominant modes of instruction were teachers sending reading materials and written communications through the Google Classroom platform followed by online in real-time with video conferencing. The most challenging factors found were weak internet connection, difficulty in having a definitive measure of students' performance, online security and privacy, and students' digital incompetence in meeting deadlines for submission of examinations and assignments. The study also found that internet strength and online security and privacy had a significant effect on the quality of online teaching, advising, and assessment procedures. The study finally suggested that HEIs in advancing a blended mode of delivery and assessment, as a regular mode of instruction, would adopt supportive applications and computerized adaptive testing for effective course delivery and interaction with students. The study's findings are important because they provide insights into the challenges that HEI teachers faced during the COVID-19 pandemic lockdown and their implications on the quality of online teaching, advising, and assessment processes, and competency of graduates. The study's findings can be used to inform the development of policies and strategies to address these challenges and improve the quality of online education.

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Introduction

The instability of the general macro environment and the specific education-related environment has distracted the stature of the quality of education. The ever-increasing price inflation in the country has, directly and indirectly, affected the quality of not only education but also the life of all, which ultimately would impact the quality of online education at HEIs in the country during the COVID-19 pandemic lockdown. According to Tiruneh (2020), the COVID-19 pandemic highly affects education in Ethiopia and drove it toward the brink of educational collapse with which nearly 25 million all-level learners were found to stay at home.

All private and government HEIs in Ethiopia started online learning and teaching methods after the pandemic outbreak, in which they had to adjust the educational processes to online teaching, advising, and assessment procedures in a very short period. In most of the HEIs in Ethiopia, the educational processes had been conducted online for six months when the COVID-19 pandemic lockdown started. Besides, HEIs had applied the blended mode of instruction with small class size contact, since October 2020.

In the pre-pandemic era, researchers identified broad challenges that hinder the successful implementation of online education in Ethiopia at both the institutional and national levels. Some of the substantial issues among others were reliable internet connection, technological infrastructure, and policy and regulatory frameworks in the education sector (Getahun, 2011). Even though online education is not new in the graduate and post-graduate program levels of education in HEIs of the country, the phenomenon certainly reached an altogether different level and intensity during the pandemic lockdown, with its limitations and challenges (Sareen & Nangia, 2020). The challenges faced by teachers in the online teaching, advising, and assessment processes, during the pandemic lockdown together with the implications in meeting the expected learning outcomes of courses, need investigation even though online teaching has much more debating dimensions in Ethiopia (Sareen & Nangia, 2020).

Reimers and Schleicher (2020) argue that the installation of synchronous collaborative software in offices for staff in line with the costs and impact of the strategies and practices

should be investigated through research. Sumitra & Roshan (2021) have also commented that policy-level intervention, which is required to improve the situation through further exploration and investigation in developing customized educational tools for affordability and accessibility by all learners of varied economic backgrounds and developing authentic assessment tools is an area for research. In general, how online education can be promoted through innovative approaches in HEIs of Ethiopia to assist and prepare the education system for similar uncertainties in the future should be further investigated.

Problem Statement

During the very rapid country-wide school closures globally, the online mode of teaching was a good stop-gap arrangement with no other options, leaving very little or no time for HEIs to prepare a strategy and transition to online education (Graham & Pasi, 2020 cited in Sareen and Nangia, 2020). Even though online education had not been new at the postgraduate program level of education in HEIs in the country, the phenomenon has certainly reached an altogether different level and intensity during the pandemic lockdown,

with its limitations and challenges (Sareen & Nangia, 2020). Besides, the lockdown of schools and colleges has not only affected internal assessments and examinations for the main public qualifications like Ethiopian University Entrance Examination (EUEE) but levels were also canceled for the entire grades in the country during the COVID-19 pandemic lockdown. These limitations and challenges could be dreadful possibilities that would have an impact on the future of education quality and skill competency of graduates.

Most studies used to investigate quality-related issues of online education from the perspective of students, family, institutional preparedness, and governance despite the teacher remains essential in routing students' learning and stabilizing the required level of quality of online education, in both direct instructions synchronously (in real-time) or asynchronously (recorded or self-paced) modes of instructions (Reimers and Schleicher, 2020). Therefore, the researcher found it reasonable to investigate the major issues and challenges of online education and their implications from the perspectives of teachers during the COVID-19 pandemic lockdown and to premeditate quality-oriented online teaching, advising, and

assessment strategies in HEIs. Thus, the research questions outlined for investigation are:

1. What are the most dominantly and effectively used modes of instruction by teachers during the pandemic lockdown?
2. What are the most challenging factors faced by teachers in the online teaching, advising, and assessment procedures during the pandemic lockdown?
3. What are the implications of the challenges faced in online teaching, advising, and assessment in the future?

The Objective of the Study

The purpose of the study was to identify the most challenging factors HEI teachers faced together with their implications on the quality of online teaching, advising, and assessment processes from the perspectives of teachers when the education process and HEI experience, in general, were concentrated on an online engagement during COVID-19 pandemic lockdown.

The study specifically aimed to:

- identify the most dominant online mode of instruction used by teachers in HEIs during the pandemic lockdown,

- investigate the most significant challenges faced by teachers in online teaching, advising, and assessment procedures during the pandemic lockdown,

- determine the implications of the challenges on the quality of education and the future of graduates.

Research Methods

Research Design

To attain the objective of the study, a cross-sectional survey was applied and the typology of the research design was explanatory. To supplement the data analysis in the quantitative approach, qualitative data were gathered to which thematic analysis was applied. In deciding how the results from the study would be related to already existing schemes of online education in HEIs, first-hand information about Heis's academic activities as responses to the ever-devastating crisis was assembled. Thus, both qualitative and quantitative

research approaches were distinguished as helpful in conducting the study.

Population and Sample

The study covers Private and Government HEIs in Addis Ababa that are running postgraduate programs, targeting on the teachers engaged in online teaching and advising during the Pandemic lockdown. As reported by Melaku (2010), HEIs offer graduate and postgraduate programs in the country w2 out of which 17 are located in Addis Ababa. Of these 17 Universities, 13 Private and Government Universities run 65 Master's programs and 5 Government Universities run 13 PhD programs.

The researcher believed that a teacher who teaches in a university at a graduate program level is engaged in teaching and advising at more than one University / College at a time. Thus, having a sample size of 43 respondents for the study would sufficiently represent the information supposed to be gathered from seventeen Universities offering graduate and postgraduate programs in Addis Ababa. A total of 37 responses were used for analysis, out of which 8 were from randomly selected teachers for an interview, 3 from

Government Universities, and 5 from Private Universities. In the process, the purposive random sampling technique was used in getting the best-positioned and able thinkers about the problem of the study.

Research Instruments

Google form questionnaire and interview were used in gathering primary data. The questionnaire was prepared in three sections with both open- and close-ended questions. The first section focused on the demographic profile of respondents. The second section encompassed teachers' perspectives concerning the effectiveness of the online teaching, advising, and assessment mechanisms during the lockdown, which was adopted from Distance Education Models and best practices in Academic Administration Practices (2011) cited in Alea, et al, (2020). The third section dealt with the challenges faced in online teaching, advising, and assessment processes and their implications, and the measurement questions were tailored from the research work of Alea, et al (2020).

The questions in the second and third sections of the questionnaire were designed on a Likert scale from 1 to 6 in

which the higher ranking of the responses implies higher preferences of respondents. The items under challenges faced by teachers were scaled into 6 levels not applicable, very challenging, challenging, moderately challenging, slightly challenging, and not challenging. The items in measuring assessment method and preventive measures effectiveness were scaled as totally insufficient, to a very small extent, to a small extent, to a large extent, to a very large extent, and no response. The items in measuring the effectiveness of the teaching, advising, and assessment procedures were scaled into 6 levels strongly disagree, disagree, neutral, agree, strongly agree, and no response.

The interview questions were unstructured and in-depth explanatory by nature that were designed to generate relevant data on the major challenges attributed to online education, their implications for the quality of education, and the way forward in possible academic policy strategies of HEIs in the future. Additionally, the researcher had been a participant observer in the Google classrooms, being invited by teachers to the online classes since the pandemic lockdown at the School of Graduate Studies in Hope Enterprises University

College. The secondary sources of data were educational policy documents, research outputs related to the quality of teaching and assessment in HEIs of the country, and research findings of different scholars that were produced during the pandemic lockdown.

Analysis of **Data**

In the qualitative data analysis, responses in the interview method together with reflections for the open-ended question in the questionnaire related to the most significant issues that affect the quality of online education during the Covid-19 lockdown were triangulated and analyzed thematically. An explanation of the challenges faced in the online teaching, advising, and assessment procedures, and the processes observed were incorporated in obtaining a comprehensive view of the implications of the challenges and the way forward based on the perspectives of teachers. The emerging patterns of the key elements for analysis from different perspectives of respondents were categorized into two major themes the challenges of online teaching, advising, and assessment (with students, the process and infrastructure, and resources) as they occurred during the pandemic, and

implications of these challenges on the quality of online education during the pandemic and on the future graduates.

In the quantitative data analysis, SPSS software package version 23.0 was used in having the descriptive summaries of data gathered through the online Google questionnaire. Descriptive summaries and statistical tests of kurtosis were computed to check the consistency and normality of distributions of responses in identifying suitable variables for further statistical analysis. Multiple regression analysis was used in formulating the predictive model of online teaching, advising, and assessment, following the tests of assumptions for the analysis. The online teaching, advising, and assessment procedures were taken as the criterion variable and the challenges faced by teachers were the predicting variables.

Result and Discussion

Descriptive Summaries of Respondents' Profile

From 35 questionnaires sent to HEI teachers online through the Google form, 29 replies were received with which the rate of response was found to be 82.86%. In the descriptive

summaries of respondents' profiles, as shown in Table 1 below, it was found that most of the respondents are working in both Private and Government Universities and the majority of them have the academic rank of associate professor.

Table 1: Type of Organization * Academic rank Crosstabulation						
			Academic rank			Total
			Ass Professor	Asso Professor	No response	
Type of organization	Private	Count	2	8	0	10
		% of Total	6.9%	27.6%	0.0%	34.5%
	Gov't	Count	0	2	0	2
		% of Total	0.0%	6.9%	0.0%	6.9%
	Both Private and Gov't	Count	4	12	0	16
		% of Total	13.8%	41.4%	0.0%	**55.2%**
	No response	Count	0	0	1	1
		% of Total	0.0%	0.0%	3.4%	3.4%
Total		Count	6	22	1	29
		% of Total	20.7%	**75.9%**	3.4%	100.0%

Source: SPSS output

In Table 2 below, the year of teaching experience of the majority of the respondents was 11 to 15 years. From this, it can be observed that most of the respondents are able thinkers or have adequate knowledge about the challenges and implication issues of online education raised in the study.

Table 2: Teaching years of experience in HEI		
	Year of experience teaching in HEI	Valid Percent
Valid	< 5	13.8
	5 – 10	13.8
	11 – 15	**31.0**
	16 – 20	20.7
	> 20	13.8
	No response	6.9
	Total	100.0

Source: SPSS output

Ten different types of fields of specialization of respondents were recorded, and as shown in Table 3 below, most of the respondents' field of specialization was found to be Business Administration followed by Commerce and Management Studies. 38% of the respondents were from other fields of specialization, namely, Information technology, Economics, Production Ecology, Urban Planning and Development, Educational Management, and Social Anthropology.

Table 3: Field of specialization		
	Field of specialization	Valid Percent
Valid	Business Administration	31.0
	Accounting and Finance	6.9
	Leadership	10.3
	Commerce and Management studies	13.8
	Others	38
	Total	100.0

Source: SPSS output

Descriptive Statistics

Table 4 below shows the descriptive statistics and test of kurtosis for the variables that were taken as predicting variables in the study. The mean statistic values showed the average rating of respondents about their perspective on the effect of these variables on the online teaching, advising, and assessment procedures. Respondents agreed that the challenges faced in internet connection strength, restricting cheating instances, online security and privacy, monotony and boredom induced by increased exposure to the screen, giving instructions and responding to queries, evaluating student work through digital media and digital competency of students (with mean values ranging from 3.48 to 4.62 out of a scale of 6) were high.

	N	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error
Internet connection strength / outage of network	29	3.76	2.099	2.073	.845
Restricting cheating instances	29	3.48	2.029	4.029	.845
Online security and privacy	29	4.48	2.029	.902	.845
Monotony and boredom induced by increased exposure to the screen	29	4.62	2.336	-.233	.845
Giving instructions and responding to queries	29	4.59	2.228	-.216	.845
Evaluating students work through email & digital media	29	4.38	2.352	-.294	.845
Digital incompetence of students	29	3.69	2.362	1.355	.845
Valid N (listwise)	29				

Table 4: Descriptive Statistics

Source: SPSS output

Moreover, as is shown in the statistical values of kurtosis for the variables, three variables have kurtosis values less than zero. Hence, respondents' responses regarding these three

variables lack consistency and were found not suitable for further statistical analysis. These variables are:

A. *Monotony and boredom induced by increased exposure to the screen,*
B. *Giving instructions and responding to queries online, and*
C. *Evaluating* students' *work through email & digital media.*

The Most Dominantly Used Modes of Instruction by Teachers

The descriptive summary of responses in the questionnaire was summarized in the online Google form as shown in Figure 1 below. The most dominantly used type of mode of online course delivery used by respondents was sending presentation slides and reading materials online to students (71.4%) followed by online in real-time with video conferencing/zoom meetings (53.6%) and written communication through googles classroom platform (35.7%). 7.1% or two of the respondents used online with an audio recording not in real-time and none of the respondents used online with a video recording not in real-time during this lockdown period.

Figure 1: Types of online modes of instruction used by respondents during the pandemic
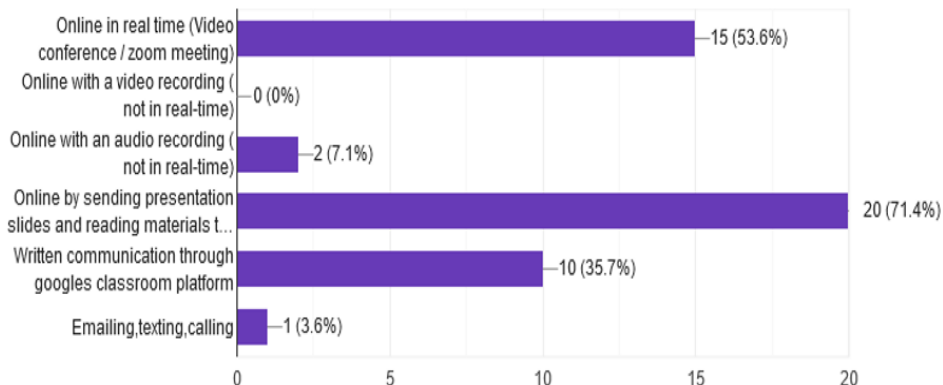
Source: Summary result of questionnaire in the Google form

Challenges in the Online Teaching, Advising and Assessment Procedures

Challenges Associated with Students:

In the qualitative approach, responses of respondents regarding challenges associated with students were transcribed as Students' digital incompetency was the most challenging factor that teachers explained as an impediment and reason to lag behind time; The repetitious activity of grade reporting with incomplete marks and revising for corrections now and then due to missing names/nicknames

and addresses of students in google classrooms; some students' lack of ethical behavior and commitment during online class interaction; regular phone calls for clarification; unclear pictures (images) of assignments; illegible handwritten (photographed) paper works that were hard to decipher; some students' negligence and poor time management in meeting deadlines for assignment and examination submission were also the greatest challenges that participant teachers mentioned.

Challenges Associated with the Procedures of Teaching, Advising, and Assessment:

As shown in Table 5 below, the majority of the respondents agreed that the online assessment methods, procedures, and expectations were clearly explained to students and related examples were also provided to a large extent. Some of the teachers respond that preventive measures have been applied to a small extent to make the online assessment free from cheating and fraud.

Table 5: Online Assessment Method and Preventive Measures								
Responses		Valid						
		Totally insufficient	To a very small extent	To a small extent	To a large extent	To a very large extent	No response	Total
In the online assessment method, procedures and expectations are clearly explained and related examples provided	Valid Percent	-	-	20.7	**58.6**	20.7	-	100
Preventive measures have been applied to make the online assessment free from cheating and fraud.	Valid Percent	17.2	17.2	**31**	20.7	10.3	3.4	100

Source: SPSS output

In Table 6 below, almost half of the respondents agreed that Google Classroom and other digital media were helpful to facilitate the assessment of student self-reflection and

feedback process and helped students in their future learning process. Also, a better number of the respondents have approved that the online assessment method applied is appropriate to evaluate the achievement of the student's learning objectives.

In explaining their perspective concerning the role of teachers in creating, shaping, and integrating their own experiences into the content of the courses, a large number of respondents agreed that the teacher's role has not been downplayed in this regard. Almost half of the respondents agreed that proper training and support have been provided by the University to teachers who were transitioning course content from face-to-face to online settings, while some respondents agreed that the bureaucratic barriers to easy access to technical resources in the institution have hindered the teaching process.

Table 6: Online Teaching and Advising Processes

Responses		Valid						
		SDA	DA	N	A	SA	NR	Total
The digital media were helpful to facilitate the assessment of student self-reflection and feedback process and helped students in their future learning	Valid %	3.4	-	13.8	55.2	17.2	10.3	100.0
The assessment method applied is appropriate to evaluate the achievement of the students' learning objective	Valid %	-	6.9	17.2	62.1	6.9	6.9	100.0
The role of teachers in creating, shaping, and integrating their own experiences into the content of the courses has not been downplayed.	Valid %	6.9	24.1	10.3	37.9	6.9	13.8	100.0
Proper training and support have been provided to teachers who were transitioning course content from face-to-face to online settings.	Valid %	3.4	13.8	24.1	44.8	3.4	10.3	100.0
Bureaucratic barriers for easy access to technical resources in the school hindered the teaching process.	Valid %	10.3	17.2	24.1	31.0	6.9	10.3	100.0

Source: SPSS Output

SDA=Strongly Disagree, DA=Disagree, N=Neutral, A=Agree, SA=Strongly Agree, NR=No Response

In addition, in the qualitative data analysis, the most challenging factors about the teaching process that participant teachers mentioned in the interview were: difficulty in assembling all the students for the class during real-time video

conferencing; difficulty to follow up on the learning progress of students; ensuring continuity and integrity of the assessment of students learning; privacy; fraud and cheating during assessment and control of plagiarism while advising. Besides, respondents raised problems that were associated with checking assignments and examinations such as uploading or downloading so many answer sheets was the most difficult task which required more time than the conventional assessment method. Also, the monotonous and increased exposure to the screen and the modus operandi of sitting in one restricted place for prolonged hours most of the time lent them to boredom as well. Two participant teachers, one teaching only in private and the other teaching in both private and government institutions, also explained that they sometimes faced technical problems due to insufficient training they got and incompatibility of computer operating software systems at their offices.

Challenges Associated with Resources and Infrastructure:

Regarding infrastructure and resources, all respondents interviewed critically put the frequent power interruption and its resultant internet disconnection along with weak internet connection strength as the most significant factors that adversely affected the teaching-learning and thereby the

quality of online education during the pandemic lockdown. Participants from private institutions commented on the missing and/or incompatible technological resources and online teaching infrastructure of the institution that exacerbated the problem of not delivering well-organized and consistent online classes during the lockdown Participant teachers suggested that HEIs have to invest in the facilities and equipment needed for online education to enhance the institution's capability in delivering quality online education.

Multiple Regression Analysis

Multiple regression analysis was applied in studying the simultaneous effects of the challenges the teachers faced on the online teaching, advising, and assessment procedures. The analysis helped to know to what extent the online teaching, advising, and assessment processes were influenced by these challenges. Primarily, all the variables were considered except the three variables, A, B, and C in the test of kurtosis under the Descriptive Summaries section above, which were identified as not suitable for further analysis. Thus, the dependent or criterion variable was the online teaching, advising, and assessment procedures, and the independent variables consistent for regression analysis were found to be internet connection strength, restricting cheating instances,

online security and privacy, and digital incompetence of students.

Table 7: **Regression Coefficients** [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics			
		B	Std. Error	Beta			Tolerance	VIF	R	R Square
1	Internet connection strength / outage of network	.306	.136	.320	2.245	.034	.082	12.264	.979	.959
	Online security and privacy	.402	.113	.481	3.562	.002	.091	11.014		
	Digital incompetence of students	-.040	.141	-.043	-.286	.777	.073	13.617		
	Restricting cheating instances	.244	.228	.239	1.071	.294	.033	30.099		
a. Dependent Variable: Mean of online teaching advising and assessment procedures										

Source: SPSS Output

As shown in Table 7 above, the coefficient of determination, $R^2 = 95.9\%$, indicates that the total variance in the online

teaching advising and assessment procedures is explained by the variation of the independent variables (Challenges) and R = 0.979 signifying the existence of a strong positive correlation between the dependent and independent variables. However, the significance values for Digital incompetence of students and Restricting cheating instances are greater than 0.05, which shows that these two variables are not significant predictors of the online teaching, advising, and assessment procedures. Besides, it was observed that the variance inflation factors (VIF) of all variables are above 5.0 and values of tolerances are less than 0.1, indicating that there is a problem of multicollinearity. This shows that a collinearity effect was detected that possibly would have an unfavorable effect on the prediction of the model. Thus, it was required to proceed with the stepwise regression analysis.

After applying stepwise regression analysis as shown in Table 8 below, the extent to which variation in the dependent variable is explained by variation in the independent variables was found to be 75.2% (R^2). The remaining 24.8% variation of the dependent variable may be explained by other variables, which were not considered in this research model. The total correlation of the independent variables with the dependent variable was 0.867 (R) showing the existence of a strong positive correlation between the dependent and

independent variables. Accordingly, the VIF for all variables is below 5.0 and values of tolerances are greater than 0.1 indicating that there is no problem of multicollinearity. Thus, the residual variables are well separated and no collinearity effect was detected that would possibly unfavorably affect the prediction power of the model.

Table 8: Coefficients

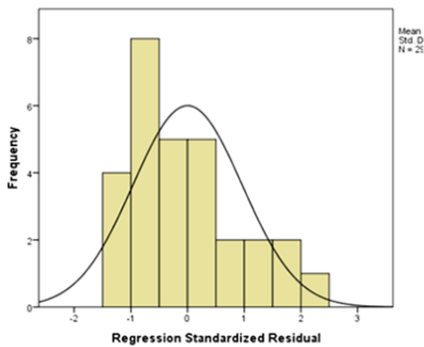| Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics			
	B	Std. Error	Beta			Tolerance	VIF	R	R Square
1 (Constant)	1.506	.306		4.930	.000				
Internet connection strength / outage of network	.323	.073	.539	4.419	.000	.641	1.559	.867[a]	.752
Online security and privacy	.266	.076	.429	3.514	.002	.641	1.559		
a. Dependent Variable: Mean of online teaching advising and assessment procedures									

Source: SPSS output

Accordingly, other required assumptions for regression analysis were checked. As shown in the histogram of Figure

2 below, the residual variables are normally distributed so that valid inferences can be made from the regression model. In checking the linearity test, the Normal P-P plot of Regression Standardized Residual as seen in Figure 3 below, almost all points lie around the line so that the residual variables are almost perfectly normally distributed, showing that there is an insignificant deviation from linearity and the model can be accurate in determining the significant indicators of the dependent variable.

Figure 2: Normality test

Figure 3: Linearity test: Normal p-p plot of Regression Standardized Residual

Source: SPSS output
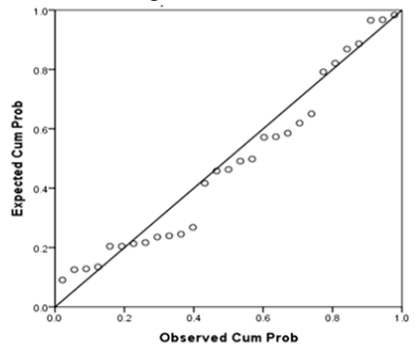
From the result of ANOVA in table 9 below, it can be observed that most part of the total variance is generated by the regression equation. $F_{(2, 26)} = 39.341$ with p-value 0.000

< 0.001 shows the goodness of fit of the model with the two independent variables or how well the independent variables significantly predict the dependent variable. In other words, the vulnerable online security and privacy and the weak internet connection had significant effect on the online teaching, advising and assessment procedures during the pandemic lockdown.

Table 9: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	33.227	2	16.614	39.341	.000[b]
	Residual	10.980	26	.422		
	Total	44.207	28			
a. Dependent Variable: Mean of online teaching advising and assessment procedures						
b. Predictors: (Constant), Online security and privacy, Internet connection strength / outage of network						

Source: SPSS output

The regression equation for online teaching, advising, and assessment procedures from the perspectives of teachers who were engaged in online teaching, advising, and assessment during the COVID-19 pandemic lockdown was found to be $Y = 1.506 + 0.323X_1 + 0.266X_2$, where X_1 is Internet connection strength and X_2 is Online security and privacy. This may show that by keeping other factors constant, 1 unit change in

Internet connection strength and 1 unit change in Online security and privacy will cause a 0.323- and 0.266-units positive change or effect on the online teaching, advising, and assessment processes, respectively. Thus, in the model, it is found that during the COVID-19 pandemic lockdown, the most significant challenges faced by teachers in online teaching, advising, and assessment were the weak internet connection and problems related to online security and privacy.

Implications of the Challenges on the Quality of Online Education and the Future of Graduates:

Respondents were interviewed about the would-be implications of the challenges on the quality of the teaching, advising, and assessment procedures and summarized as follows:

Students being passive observers from start to end of the semester rather than being active participants would make them unable to connect their learning and new knowledge with previous courses and real-world examples. This might result in placing them deprived of some vital competencies while anticipating to further their study in the future. Also,

respondents explained that prompts and responses of students to discussion assignments on the online platform were asynchronous occurring at different times as a consequence of which biasedness is faced in the performance evaluation of students. Though discussion on the platform was so helpful for the teacher in having independent students reflect on the assignment, it requires more time and patience for comparative validation of all students' responses with similar benchmarks at a time.

The majority of the respondents' view concerning the online teaching and advising processes was that the online class demand more time than the face-to-face classroom setting, to prepare, plan, teach, advise, and evaluate. Even small online class sizes would demand the same amount of time as large class sizes in some courses. This would be a deterrent to teachers interested in offering online courses who give priority to measuring how students are comprehending the course content and whether they are participating in their learning experiences. Respondents suggested that time was a major factor of online teaching that has to be taken into account in scheduling and setting grade submission deadlines.

One of the interviewees from Government University explained that

> "The quality of teaching and learning included the need for more concern in conducting authentic assessment mechanisms, creating an association of theories with practice, and facilitation of students' learning by providing them some additional guidance on the major areas of the course objectives. In the HE context, it is obvious that students are expected to organize their learning to prepare their notes, make presentations, do project works, and produce something new by themselves rather than expecting from the teacher and simply absorbing the ready-made. In the meantime, teachers are expected to support and consult those students showing an effort to learn."

Other interviewees also have a similar opinion in that despite more being expected from students' side in showing commitment and self-initiation of learning, teachers have to stimulate students' inspiration for independent learning by giving extra support and guidance in the online teaching and advising process, which would be real only if teachers are equipped with the required resources and support from the institution. To alleviate the possible unfavorable implications

of the challenges faced in the online teaching, advising, and assessment procedures during the pandemic lockdown, most respondents' perspectives were that HEIs shall plan for training programs for both needy teachers and students, and the integrity of assessment process shall be ensured and be a very critical concern in the online teaching and learning process in the future.

Respondents explained that the problems related to online education along with the instability of the general macro environment might handicap students in some competencies, which ultimately would put them in a disadvantaged position in coping with international competencies and in furthering their studies in the future. Even though teachers have some reservations about the quality of online teaching, advising, and assessment procedures, it was found that they have a favorable attitude towards the online mode of teaching if it can be used together with the conventional approach to enhance course delivery consistency and effectiveness, in line with technological tool adoption that would provide a comprehensive assessment system to secure assessment

mechanisms on the platform and at the same time, the requirements of both teachers and students would be met.

Discussion

The study aimed to investigate the effect of challenges faced by teachers on the quality of online teaching, advising, and assessment procedures and their implications during the Covid-19 pandemic lockdown in HEIs of Addis Ababa, from the perspective of teachers. There were substantial reservations about the quality of online teaching, advising, and assessment procedures in graduate and post-graduate programs during the pandemic lockdown due to the immediate shift to the online teaching process and the subsequent challenges to effective online course offerings, advising, and assessment mechanisms. The challenging factors in online education were associated with students, the teaching, advising, and assessment processes, and the missing or incompatible technological resources and infrastructure. Similar to the challenges confirmed by Mengistie (2020) and Getahun (2011) in their findings, the most significant factors adversely affecting online teaching, advising, and assessment procedures were vulnerable online security and privacy, and frequent power interruption and its resultant internet disconnection along with weak internet connection strength or insufficient bandwidth.

The Google Classroom and other digital instructions were found relatively helpful to facilitate the assessment, advising, and feedback processes of students during the pandemic lockdown. However, students being passive observers in the

online teaching process might handicap them in some competencies that would have been acquired through a physical classroom setting, which was also discussed by Mansureh, et al. (2017). Even though Rennert (2008) cited in Mansureh et al. (2017) confirmed that the role of instructors in creating, shaping, and integrating their own experiences into the content of the courses has been downplayed, in this study on the contrary, it was found that the role of teachers in creating, shaping, and integrating their own experiences into the content of the online courses has not been downplayed.

Despite Google Classroom and other digital media being helpful to facilitate the teaching, advising, assessment, and feedback processes, applying preventive measures during assessment procedures and restricting cheating instances were found challenging. In checking the actual learning of students, there was uncertainty and confusion among teachers and students to find the authenticity of students' work for assignments, examinations, and research works. Similar to the findings of Joshi, et al, (2020), the other barriers that lead teachers to boredom were uploading or downloading so many answer sheets, the monotonous and increased exposure to the

screen, and the modus operandi of sitting in one restricted place for prolonged hours, which by itself would affect the quality of the teaching and advising processes.

This study was cross-sectional and covered only the postgraduate programs of private and government HEIs in Addis Ababa. Also, it does not encompass undergraduate programs. If the study was extended to HEIs in other regions of the country and all level programs, the findings would have been more transferable and all-inclusive. Further research could make a longitudinal survey and come up with better findings and ultimately improve the quality of the online education system throughout the country in similar future uncertainties.

Implications for Practice and future research

To cope with similar unexpected uncertainty in the country in the future and improve the quality of online education, HEIs should advance a blended mode of instruction, online teaching and learning with the traditional setting, as a regular mode of instruction for effective course delivery and

interaction with students. More user-friendly and supportive applications with computerized adaptive testing should be organized in the institutions. HEIs should also consider drawing medium to long-term adjustments, rather than only making short-term adjustments in terms of accessibility and infrastructure, which may be done by investing in the facilities and equipment needed for online education to enhance the institution's capability to deliver quality online education.

The good practices of the Government and some Private institutions in creating and regularly updating their website to communicate with teachers, students, and the community about curriculum goals, strategies of research community outreaches, suggested activities and additional resources have to be adopted by all other HEIs in the country. HEIs need to make an exit or satisfaction survey a normal activity with which they would be able not only to constantly review programs in an attempt to meet the needs of students and quality of education enhancement but also in making appropriate investments into facilities. Moreover, continued monitoring and evaluation of online education by the MoE

would be of great importance for quality online education. The HEIs' proper implementation as it was assured in the first reopening phase, especially in fulfilling the adequate infrastructure and service inputs for online learning-teaching processes monitoring have to continue in a regular interval.

In general, the HE institutional strategic plan should comprise the development of competencies for the digital environment, establishing collaborative arrangements within HEIs, and installation of synchronous collaborative software in offices for academic staff in line with the costs and impact of the HEIs strategies and practices should be investigated through research. Thus, policy-level intervention is required to improve the situation through further exploration, and research should investigate how online education can be promoted through innovative approaches in HEIs of Ethiopia to support and prepare the education system for similar uncertainties in the future.

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