
| RESEARCH ARTICLE

Status of Online Teaching and Learning during Covid-19 in Kenyan Universities: Teaching and Technical Staff Perspective

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| ABSTRACT

COVID-19 is still a major public health problem globally; currently, over 6million deaths have been reported worldwide. The pandemic affected approximately 1.6 billion learners in more than 200 countries. Since Covid 19 pandemic hit higher learning education systems globally, most countries have switched from face to face to online teaching. Subsequently, learning institutions have adapted online teaching/learning methods to mitigate against disruption caused by the Covid-19 pandemic. The current study aimed at establishing the status of online teaching and learning during covid-19 in Kenyan public and private universities among teaching and technical staff. The study adopted a descriptive survey design that incorporated both questionnaires and interview methods of data collection. Data were analyzed descriptively and thematically. The study was conducted in two (2) public and two (2) private universities in Kenya, which were purposively selected and constituted a sample of 64 lecturers and technicians. Findings indicate that both private and public universities utilized online teaching and learning; online teaching was more established in public universities compared to private universities. However, all universities were not able to offer practicals lessons online. The major challenge of online teaching was internet interruptions and poor attendance by the students, whereas the major opportunity was flexibility and cost-effectiveness. The study concludes that academic activities have been affected by COVID-19 at all levels and that digital transformation in teaching and learning is a necessity in Higher Education. Therefore, all teaching and technical staff must embrace and implement online teaching and learning as a viable alternative to face to face teaching and learning during and beyond Covid 19.

| KEYWORDS

Universities, COVID-19, Online Teaching & Learning

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1. Introduction

1.1 Background

Covid-19 is now a major global health threat (Walker et al. 2020). It has affected nearly 1.6 billion learners in more than 200 countries (Basilaia, G., Kavadze, D. (2020). Since Covid 19 pandemic hit the University education nerve center globally, most countries have stopped face to face teaching (Basset & Arnold, 2020 Sahu, 2020). DePietro (2020) concurs that the global higher education landscape has dramatically changed due to the spread of Covid 19. Consequently, learning institutions have opted to use synchronous and asynchronous online teaching/learning methods in response to the disruptions occasioned by Covid-19.

Like other sectors, Universities have been forced to change the mode of teaching and learning within a very short time, from traditional to Online Teaching & Learning (OTL). In Kenya, for example, different Universities and lecturers within the same Universities have adopted different methods of OTL, causing a crisis in Higher Education (HE). Yet, according to Beteille et al. (2020), lecturers play the main role in moulding students' personalities and attitudes as well as ensuring that they find learning

exciting. Further, teaching staff of all backgrounds and ages have had to prepare and deliver their classes from home, with all the practical and technical challenges this entails. This has come with little technical support (Hodges et al., 2020). Hence, this transition has brought in both challenges and opportunities, creating the need for research into OTL methods for teaching and learning. The purpose of the current study is to establish the status of online teaching and learning during covid-19 in Kenyan public and private universities among teaching and technical staff. The study was guided by the following key question: What is the status of Online Teaching and Learning (OTL) in Kenyan public and private universities? What are the experiences of lecturers & technical staff in OTL? Which Online T/L platforms are used for OTL? Which Online T/L Platforms are used in Universities for practicals, CATs, final examinations and oral defenses? What are the determinants of the choice of OTL platforms for T/L?

2. Methodology

The study adopted a descriptive design where both questionnaires and interviews were used to collect data. Analysis was done descriptively and thematically. The study was conducted in two (2) public and two (2) private universities in Kenya. The four (4) universities were picked purposively based on their capacity to conduct online teaching and learning and having established distance learning before COVID-19. The 64 participants constituted 2 lecturers from each school and 4 technicians from each university purposively selected to participate in the study. The constitution of the study population from both public and private institutions was informed by the following; Studies show that most public universities draw their students from poor backgrounds, whose tuition and upkeep are subsidized by the government. On the other hand, private universities mostly enrol students from well-to-do backgrounds, predisposing them to better access to digital facilities required for online teaching and learning. Interview schedules and questionnaires were used to collect data. Descriptive statistics were used to analyze quantitative data, while content analysis was conducted to analyze qualitative data.

3. Results

This section presents results on the demographic information, status of Online Teaching and Learning (OTL); Experience in OTL; types of online platforms used for OTL; types of Platforms used in Universities for assessment. This includes practicals, Continuous Assessment Tests (CATs), summative examinations and oral defenses. This section will also discuss the determinants of the choice of OTL among teaching and technical staff.

3.1 Demographic Information

Table 1: Demographic Information

	Parameters	Frequency	percentage
Gender	Male	38	59.38
	Female	26	40.62
Marital Status	Married	58	90.62
	Single	5	7.81
	Widow/widower	1	1.56
University	Public University 1	16	25.00
	Private University 1	16	25.00
	Public University 2	16	25.00
	Private University 2	16	25.00
Designation	Associate professor	2	3.12
	Senior Lecturers	2	3.12
	Lecturers	34	53.12
	Assistant lecturer	5	7.81
	Tutorial Fellow	7	10.94

	senior technologist/ clinical instructor	14	21.88
Level of education	Ph.D	22	34.38
	Masters	12	49.09
	Bachelor	30	46.88

The above results reveal that male respondents were more at (59.38%) compared to the female respondent who were (40.62%). This implies that more males than females are hired as teaching and technical staff. For marital status, most respondents (90.62%) were married compared to (7.81%) who were single. This shows that the study targeted adults working at the university, most of whom are mostly married. The four Universities were represented equally at (25%). In terms of designation, Associate Professors were represented at (3.12%); senior lecturers (3.12%); lecturers (53.12%); assistant lecturers (7.81%); Tutorial fellows (10.94%) and senior technologist/clinical instructor at (21.88%). Therefore, a majority of the staff at the four Universities are at the rank of lecturers position. Lastly, for the level of education, Doctorate holders were represented at (34.38%; Masters (49.09%) and Bachelors (46.88%), implying that there are fewer Doctorates at the four Universities compared to Masters and Bachelors.

3.1.1 Status of Online Teaching and Learning (OTL)

Respondents were asked whether online teaching/learning was going on in their universities. The findings are presented in Fig. 1 below:

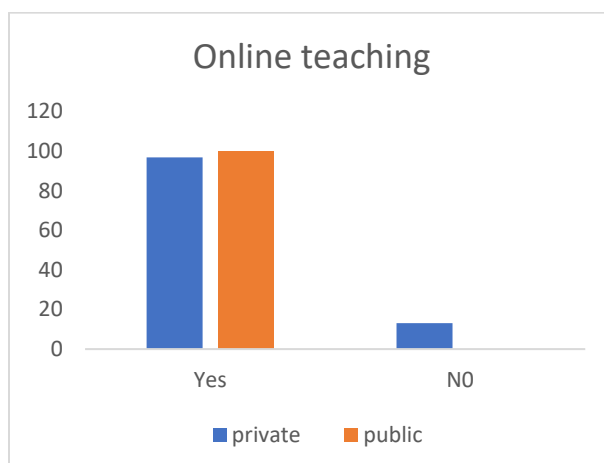


Fig 1. Status of Online Teaching and Learning (OTL)

Results in Figure 1 above show that (100%) and (96%) of staff from public and private universities, respectively, agreed that Online teaching and learning were going on. This is an indication that both public and private Universities were utilizing OTL during the disruption caused by the Covid-19 pandemic. However, through in-depth interviews with university technicians, it was established that private universities seem to have established online teaching and learning, practicals, assessment and oral defenses before Covid -19 as compared to public Universities.

3.1.2 Experiences in Online Teaching and Learning

The study also sought to establish the experiences of OTL among teaching and technical staff. The respondents were, therefore, asked about their experiences regarding the types of Online platforms used in universities for online teaching, practicals and assessment.

3.1.3 Types of Online platforms used in universities for OTL

Figure 2 below presents the results for the types of online platforms used in universities for OTL.

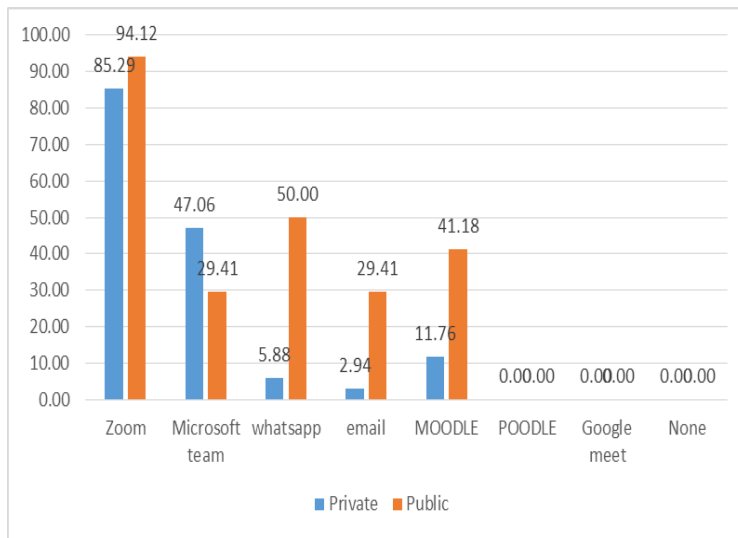


Fig. 2 Types of Online platforms used in universities for OTL

The above results indicate that Zoom was the most used platform in both public (94.12%) and private universities (85.2%). This was followed by WhatsApp, which was the highest in public Universities at (50%) and Microsoft teams for private Universities at (47.06%). This shows that Zoom was the most widely used platform. The interviews indicated that lecturers found Zoom to be friendly as it only required clicking on the provided link.

3.1.4 Types of Online platforms used for Practicals

Respondents were asked which type of online platform they used for practicals.

The results are presented in Figure 3 below:

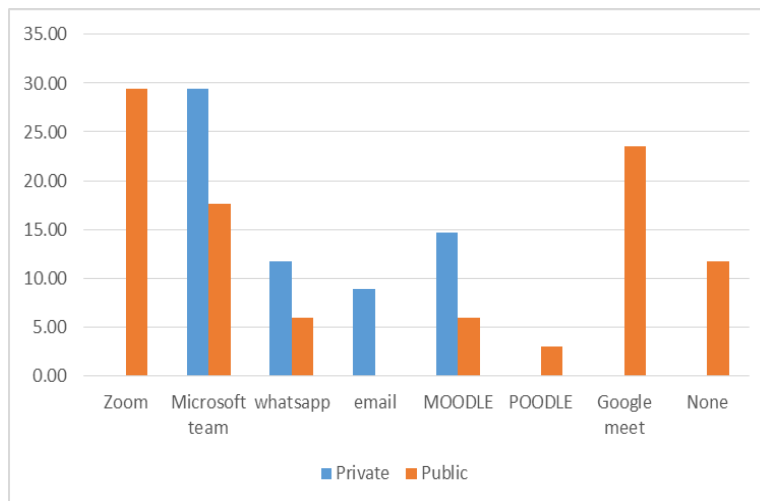


Figure 3: Types of Online platforms used for Practicals

The above findings reveal that in public universities, the zoom was used for Practicals (38%); Microsoft teams (16%), WhatsApp (6%), Moodle (6%), Poodle (3%), google meet (23%) but email was not used at all. In private universities, on the other hand, zoom, Poodle and google meet platforms were not used for Practicals. However, Microsoft teams were used (28%), WhatsApp (12%), Email (8%), and Moodle (14%). This shows that public universities employed a larger variety of platforms to carry out practicals compared to private Universities, which limited themselves to only four platforms. Some responses in public universities (13%) indicated that they did not conduct practicals online.

3.1.5 Online platforms and Assessment

The study also investigated the use of online T/L platforms in the assessment of Continuous Assessment Tests (CATs), Summative examinations as well as oral presentations.

3.1.6 Online platforms used for Assessing CATs

Respondents were asked which online platform they used for assessing CATs. The results are presented in Figure 4 below:

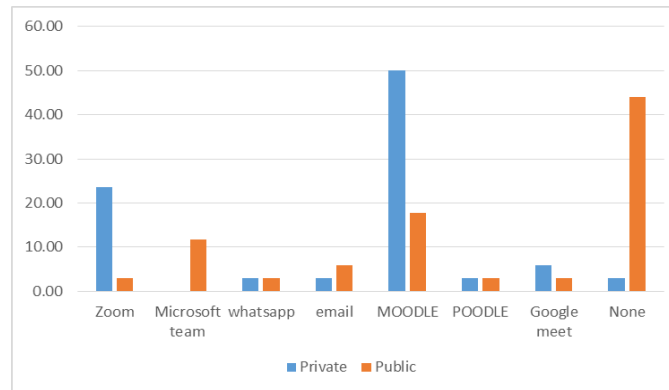


Fig.4: Online platforms used for Assessing CATs

Results in Figure 4 above reveal that in public universities, Zoom was used at (4%), Microsoft teams at (12%), E-mail at (8%), MOODLE at (18%) and Google-meet at (6%). On the other hand, in Private Universities, Zoom was used at (25%); E-mail at (6 %); MOODLE at (50%) and Google-meet at (8%). Interestingly, private Universities did not use Google-meet, but WhatsApp and poodle were used both in public and private Universities at (12%) and (6%) respectively. The population which did not make use of any online platform was high in public universities at 45% compared to private universities at (6%).

3.1.7 Types of Online platforms used in universities for Final Examinations

Respondents were asked which online platform they used for assessing summative examinations. The results are presented in Figure 5 below:

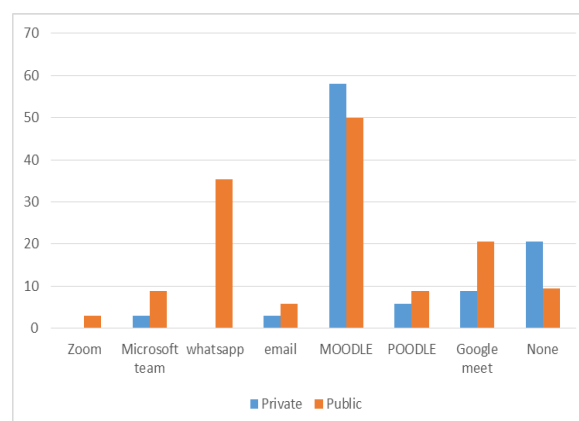


Fig.5 Types of Online platforms used in universities for Final Examinations

Results in Figure5 above reveal that MOODLE was the most popular Platform for assessment of final examinations for both private (68%) and public (50%) Universities, while Zoom was hardly used by private universities. Results further reveal that a significant percentage of private (20%) and public (10%) universities did not use online platforms for final examinations.

3.1.8 Types of Online platforms used in universities for oral Defences

Respondents were asked which online platform they used for assessing oral defences. The results are presented in Figure 6 below:

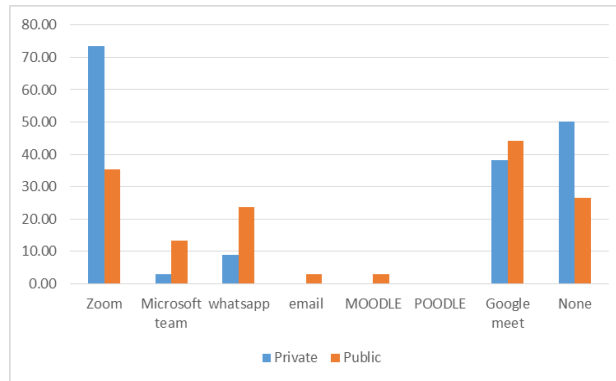


Fig.6 Types of Online platforms used in universities for oral Defences

The findings above show that for oral defences, the zoom was the most popular for private Universities at (75%) and (35%) for public universities. On the contrary, Google meet was popular for public Universities at (45%) and Private Universities at (38%). Although private universities embraced online platforms more for oral defences than public universities, 50% of respondents from private universities did not use online platforms for oral defences.

3.1.9 Sources of Information about which Platforms to Use

Respondents were asked how they learnt about the online platforms they were using. The results are presented in Figure 7 below:

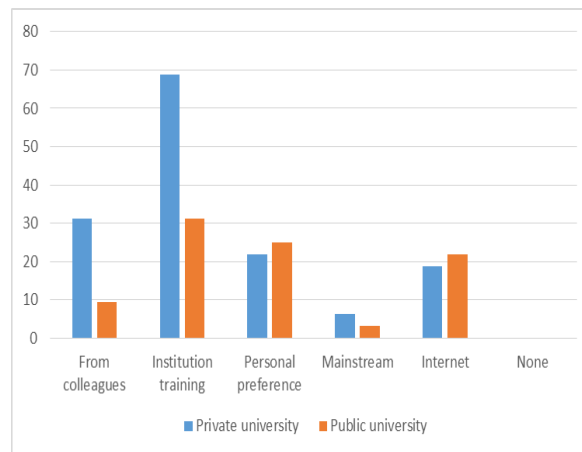


Fig. 7. Sources of Information about which Platforms to Use

The results in Figure 7 above point out that majority of the staff learnt about the platforms through institutional training (68%) for Private and (31%) for public universities. Most of the staff also learnt of the platforms through colleagues, which was higher in private universities at (31%) than in public universities at (9%). In addition, mainstream media was the least used source for both private (8%) and public (5%) universities. This means that institutional training has been instrumental in retooling staff in the wake of Covid -19.

3.1.10 Determinants of online platforms

Respondents were asked to indicate what determined their choice of an online platform for OTL based on six criteria, namely, accessibility, affordability, institutional policy, type of electronic gadget, familiarity and size of the class. The results are presented in Table 2 below:

Table 2: Determinants of online platforms

	frequency	Percentage
Accessibility	35	64.8
Affordability	18	33.3
Institutional policy	33	61.1
Type of electronic gadget	5	9.3
Familiarity	13	24.1
Size of the class	8	14.8

Results indicated that a majority of the respondents chose the online platforms due to accessibility at (64.8%), followed by institutional policy (61.1%), affordability (33.3%), familiarity at 24.1% and size of the class (14.8%). The least determinant was the type of electronic gadget (9.3%). This means that most respondents chose the online platforms depending on the level of accessibility.

3.4 Challenges and opportunities of Online Teaching and Learning platforms

In-depth Interviews were administered to selected key informants who included Deans, Directors of ODEL and Registrars of Academic affairs. They were purposively sampled from the four universities. The FDGs and in-depth interviews formed the basis of the results from the monkey survey. The qualitative data generated from FDGs and in-depth interviews gave a deeper understanding of the experiences of the online methods that worked in both public and private universities. The respondents were asked to explain the challenges and opportunities they had encountered during the OTL.

3.5 Challenges of Online Teaching and Learning platforms

The main challenges included problems with internet connectivity, non-affordability and inaccessibility of the online platforms. It also emerged that not all online platforms accommodated online practicals. For instance, quantitative data showed that in Public Universities, the zoom was the highest used platform (38%); Microsoft teams at (16%), WhatsApp(6%), Moodle (6%), Poodle (3%), google meet (23%) were all below the 50% mark.

Further, most respondents interviewed cited the dwindling student numbers in class attendance as well as the digital divide among students as other challenges to OTL. This is in tandem with, Rapanta (2020), who also reveals in his study that using e-Assessment to enhance student learning and evidence learning outcomes is very challenging.

Other constraints included lack of resources, internet disruptions, lack of proper interaction with students, the challenging administration and marking of online exams and minimal training among students and staff.

3.6 Opportunities of Online Teaching and Learning platforms

In spite of the challenges encountered in OTL, respondents revealed several opportunities which, if tapped, would enable the Universities to succeed in OTL. Such opportunities included cost-effectiveness and flexibility of OTL, provision of real-time feedback, saving on time and distance, OTL addressing the challenge of space at the University and the fact that OTL takes care of large classes.

In addition, respondents revealed that OTL was effective in monitoring work done and was not constrained by Covid -19 and other communicable diseases. This means that online classes can be administered anytime, anywhere. Moreover, OTL was said to be

appropriate for future reference and accommodative for evening students. These observations are in line with Lau & Ross (2020), who warn that the impact of Covid 19 is likely to be felt in the higher education sector long after the outbreak has eventually been brought under control. Rapanta C. *et al.* (2020), on the other hand, reveals that online learning allows for self-paced learning and reflection, enabling learners to review the learning resources for the improvement of learning activities. It is therefore worth investing in to guarantee the future of higher education. Rapanta further notes that a student-centred approach is more focused on evidence-based learning and continuous assessment.

4. Discussion

The majority of respondents were male, married, and with a master's degree. Age, gender and level of education are the major factors affecting E- teaching/learning uptake. This could be explained by the fact that the younger generation is already exposed to technology in general than the older generation; this increases their capacity and willingness to utilize other e-learning technology. The findings contradict Adamus *et al.* 2009, who reported that women were found to accept e-learning more than men. Other studies reported minimal variation between males and females in their uptake of e-learning (Toffoletti *et al.*, 2016). The differences in gender, age and level of education could be explained by the variation in the representation of the study participants and a reflection of the ratio in the higher learning institutions.

The majority of the faculty choose online teaching platforms based on accessibility and institutional policy. This is because most higher learning institutions in Kenya have official platforms for Online teaching; for instance, MOODLE is the official platform for summative assessment because it is possible to monitor the examination processes for quality assurance. Most faculty preferred ZOOM and Microsoft Teams for postgraduate oral defences because of their interactive nature; moreover, students are able to present their work in real-time and be cross-examined effectively. This is in agreement with Basilaia & Kavadze (2020), who point out that internet coverage and the availability of computers or smartphones are essential tools for online teaching and learning in the era of covid-19. According to Tosun (2018), YouTube comes second after Facebook in popularity as a social platform and is actually most preferred for learners to obtain and exchange information. Whatsapp was ranked in the third position. In the wake of COVID 19, e-learning was embraced in most higher learning institutions. Platforms like ZOOM, google meet and Microsoft teams were explored and complemented with WhatsApp and Email as established in the study. The informal platforms were preferred by most faculty over educational platforms like MOODLE because they attracted large numbers. The formal platforms were utilized most for summative assessment and were also limited to announcements and general information about universities. Formal E-learning platforms like Moodle, Blackboard, and Sakai, are still struggling to gain the popularity of zoom, Microsoft teams, Facebook and YouTube. It is important to note that the informal platforms like ZOOM, Microsoft teams, and google meet have also provided the same features to promote learning, for example, creating an account and registering.

Regarding experience in online teaching, results showed that most faculty had less than 2 years of experience in online teaching. This shows that most members of the faculty in Kenya used online teaching for the first time during COVID 19 period. This finding concedes with Fischer *et al.* 2014 who reported that older staff with long traditional teaching had limited interaction with technology.

The study participants cited flexibility as the major advantage of online teaching, while the major disadvantage was internet disruption, poor attendance, lack of technical skills in E-learning and inability to conduct practical lessons, especially for medical courses. This agrees with studies by Zalat *et al.* 2021 who reported that 59% of the university faculty preferred online teaching because of time flexibility. Bhardwaj *et al.* 2015, in their previous study, also reported that faculty members thought e-learning was time-consuming and also difficult to monitor and evaluate the learning process. These challenges are expected, especially in developing countries where internet access is poor, especially in rural settings. Al-Shorbaji *et al.* (2020) posit that lack of access to technology is a major challenge to technology-enhanced teaching in developing countries. Gillet-Swan (2017) reported that the use of technology and internet facilities among educators and students is a major barrier to e-learning. Rana, Lal, and Rajiv (2014), in their study, reported technological challenges, lack of interactive learning, development of e-learning materials and pedagogical issues in online learning as the major challenges to online teaching and learning. Therefore there is a need for higher learning institutions to provide suitable platforms for e-learning for both faculty members and learners. In addition, enhancing E-learning by educators to have a seamless and interesting learning process may motivate the faculty and learners to embrace using it as a mode of teaching and learning.

5. Conclusion

It is clear from the findings that academic activities have been affected by COVID-19 at all levels and that digital transformation in teaching and learning can no longer be ignored in Higher Education. All teaching and technical staff must learn to live and survive with the present crisis by implementing OTL as a viable alternative to face to face teaching and learning during and beyond Covid 19. The four relevant stakeholders at Universities, namely, administrators, lecturers, technicians and students, must work in tandem to experience and utilize the transition effectively. The study revealed that OTL went on without fixing the accountability of lecturers

regarding the exact online platform to be used. Several available OTL platforms such as Zoom, Google Meet and Microsoft Teams were put to need-based use, clearly showing that there is a need for a standardized OTL method for Universities in Kenya.

6. Recommendations

The study came up with three key recommendations, namely;

1. There is a need for a Standardized Online Teaching and Learning Model to tackle Teaching and Learning Challenges beyond Covid-19.
2. Universities should invest more in providing technical and professional capacity for their teaching and technical staff in online teaching and learning pedagogy.
3. Universities must now more than ever invest in e-resources to facilitate effective quality OTL in this era of Covid 19 and beyond.

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