

## **University Teachers' Perceptions of Online Assessment during the Covid-19 Pandemic in Lebanon**

**Hanadi S. Mirza, PhD**

hanadi.mirza@ul.edu.lb

Lebanese University, Faculty of Pedagogy

### **ABSTRACT:**

After the Covid-19 pandemic forced universities worldwide to adopt remote learning, several studies on student perceptions of online assessment were conducted. However, only a small number of research addressed the perceptions of teachers. This study aims to fill this gap by exploring and reporting on the perceptions of teachers in the Faculty of Pedagogy/Education at the Lebanese University of online assessment during country's first lockdown in the spring of 2020. Participants were 10 teachers from four different departments. Data were collected online through individual interviews. Findings reveal that participants received limited training to conduct classes online, and no training to assess their students. Moreover, because of their lack of guidance on how to implement diagnostic, formative, ipsative, and summative assessments online, almost all participants chose not to use online quizzes and exams to assess validity, reliability, and other practical elements. Instead, they used projects, oral presentations, reflection papers, and performances as assessment tools. Consequently, participants reported being very satisfied with the university's decision to administer final exams in-person and on campus, all the participants agreed that this practice should be used in the fall of 2020-2021 in case remote or blended learning are maintained.

**Key words:** online assessment, higher education, teacher perceptions, Covid-19, types of assessments

### **INTRODUCTION**

In the spring of 2020, the rapid spread of the Covid-19 pandemic and its high death rates compelled educational institutions around the world to rapidly shift from their long-established modes of education to remote instruction. This abrupt shift to online instruction caught both teachers and students unprepared to navigate a fully digitally mediated learning environment. As a result, educators, students and their families faced multiple challenges managing teaching and learning online. Teachers, however, were expected to quickly create new strategies for lesson planning and virtual classroom management while adapting the complex elements of assessment to a fully online learning environment.

Prior to the Covid-19 pandemic, various universities successfully invested in combining educational technology (ET) with established teaching practice in offering online courses. In addition, integrating ET into higher education has been the goal of many governments around the world for the past two decades. Therefore, various studies have been conducted to address the perceptions of teachers and students of online learning and online assessment or e-assessment (Dermo, 2009; Khan & Khan, 2018; Özden et al., 2004) and gauge its effectiveness.

Online assessment is simply defined as an electronic version of activities that have been commonly used in the in-person classroom to evaluate students' achievement and give feedback such as quizzes, exams and essays. Various online assessment activities can include pre- and post-testing, diagnostic analysis, student tracking, rubric use, the support and delivery of authentic assessment through project-based learning, artifact collection, and data aggregation and analysis. In other words, online assessment helps students improve their ability to learn in online settings (Weleschuk et al. 2019) while exams and other practical assessments had to be reworked by teachers in order to fit the new online reality (Bearman et al., 2020).

Online assessment relies heavily on new Information and Communication Technologies (ICT) such as web-based testing which has been more commonly used in various schools and universities than traditional assessments (Cigdem et al., 2016). Some of the benefits of web-based testing for both teachers and students include flexibility of time and place, quick results, immediate feedback, and automated grading. In addition, the appropriate use of assessment tools is crucial to plan for hybrid and distant learning instruction. Using Learning Management Systems (LMS) is essential to develop and process online quizzes and tests (Cukusic et al., 2014) such as Microsoft Teams and Moodle.

Developing online quizzes and exams for each lesson is time consuming for teachers and requires a high level of creativity. Yet, online quizzes can be effectively used at the beginning of a lesson to diagnose students' prior knowledge of a specific topic, during the lesson to check students' understanding of its content as formative assessment, and at the end of the lesson as a summative assessment (Cukusic et al., 2014). However, it is worth noticing that while summative assessments can have wider purposes, formative assessments help to identify students' progress in a specific course and are a means to manage instruction and learning (Baleni, 2015). Teachers can provide students with different forms of feedback during formative assessment including written, audio-recorded, or video-recorded comments (Johnson & Cooke, 2016).

Moreover, teachers in higher education were encouraged to give more feedback through ipsative assessment to help students improve their work by comparing their current performance to previous ones (Zhou & Zhang, 2017). In addition, ipsative or self-referential assessment encourages students to monitor their own progress by using feedback sandwich to enhance future work (Hughes et al., 2014). Other studies have also noted that ICT, which are the basis of online assessment, can promote individualized learning and encourage creativity and independence (Carhill-Poza & Chen, 2020).

Various studies have highlighted the many benefits and challenges of online assessment for students and teachers. Some benefits offered to teachers include the ability to more efficiently evaluate different types of assignments and promptly identify students who need academic support. Among the obstacles of online assessment, research has pointed out insufficient information and communication technologies (ICT) skills of both teachers and students, the fact that some students have limited access to ICT and computers, and the poor infrastructure in developing countries (Alruwais, Wills & Wald, 2018). Studies have also mentioned that online assessments can be perceived as an

impersonal tool, although they require a great amount of work off-line from teachers. In addition, the teachers in Kearns' study (2012), for example, reported new and difficult challenges to assess their students online such as establishing rapport due to physical distance; handling students with poor time management of their work; being pressed to learn new technologies fast and with limited support; and having to keep gathering data from different assessments and providing constant feedback.

Some educationalist established that assessment is what determines student's learning. They argued that since the teach-learn-assess and feedback series (Frederiksen & Collins, 1989, as cited in Suen, 2014) is considered as essential in education, assessment for learning is inseparable from teaching and learning. They also noticed that the type of feedback assessment for learning offers can help teachers adapt their modes of instruction so students can better navigate the learning process. Well-managed peer assessment, for example, is a good means to offer feedback (Suen, 2014). Similar to other forms of assessment, assessment for learning is effective only if students are responsible for their own learning. Although students are mainly motivated to work on assignments if they are graded, a study investigating the impact of grades on students' motivation highlighted that grades have increased students' anxiety instead of improving academic motivation (Chamberlin, Yasué, & Chang, 2018).

Holding final examination online or on campus has been a debatable issue during Covid-19 pandemic. Several higher education institutions opted for the remote or online exams as a possible way to carry on summative exams (E.g., Dermo, 2009; Son et al., 2020). Various studies, however, revealed the negative effect of Covid-19 on university students' mental health whereby among 1019 respondents, 32% reported feeling more stressed with remote or online exams (Elsalem et al., 2020). On the other hand, the Lucknow University, for instance, offered practical ways to hold final examinations on campus mainly to support students who lack ICT resources or skills by adding shifts and decreasing the number of students in each exam hall (The Hindustan Times, May 2020).

### **Study Objectives and Research Questions**

This study aims to shed light on the experiences of teachers who faced a global public health crisis coupled with a domestic socio-economic crisis by addressing their challenges navigating an uncommon learning environment and dealing with students who were enduring economic pressure and other anxieties in the Lebanese context. It will also report on the strategies they used to adapt their practices to remote instruction.

This study examines the perceptions of university teachers of online assessment in the Faculty of Pedagogy at the Lebanese University during the first Covid-19 outbreak in the spring of 2020. It attempts to address the following research questions:

1. What challenges did the teachers at the Faculty of Pedagogy face while assessing their students online in the spring of 2020?
2. What types of assessments did they choose to use in their online courses and classrooms to better evaluate their students' learning?

---

## **METHODOLOGY**

This exploratory study adopted the qualitative approach by using descriptive and analytical research methods to attempt to answer the questions above. Data were collected from a small sample of participants who took part in an online interview created by the researcher.

### **Participants**

The ten participants in this study were eight females and two males Ph.D. holders who teach in various humanities departments of the Faculty of Pedagogy including Educational Psychology (3), Languages (3), Social Studies (2), and Educational Sciences (2). They were using the Microsoft Teams platform chosen for instruction by the Lebanese University, the only public higher education institution in Lebanon.

### **Data Collection and Analysis**

All of the participants were interviewed individually via WhatsApp for 20-30 minutes during the summer of 2020, mainly during August-September period. They were asked questions about their challenges teaching and assessing learners remotely, in addition to the types of assessments they used online. Interviewees were asked the following questions:

1. What were the main challenges you faced while you were teaching remotely during the outbreaks of Covid-19 in spring 2020?
2. How would you describe your experience using online assessment during the Covid-19 lockdown or stay at home orders?
3. Which different types of assessments did you use online? Give a clear example of each type, i.e., diagnostic, formative, ipsative, and summative.
4. If you were to continue to teach online in the fall semester of 2020-21, what would you do differently to assess your students?

The qualitative data collected from each of the ten interviews were coded, grouped in themes or concepts, then analyzed using theoretical sampling (Corbin & Strauss, 2008). Anonymity and a statement about confidentiality were also provided to participants.

## **RESULTS**

The answers to the four interview questions elicited the following responses:

### **Challenges of Remote Teaching**

The challenges all the participants in this study faced while teaching remotely included issues related to use of technology, relationship with students and planning.

One challenge all the participants faced while teaching remotely were the disruptions caused by the frequent power cuts in Lebanon, in addition to slow internet and poor network connectivity. Moreover, neither teachers nor students had previous training in the Microsoft Teams platform and had to learn it on their own by trial and error. An additional challenge was having to master platforms such as Zoom before moving on to Microsoft Teams. One participant expressed anxiety about her ability to learn both technologies while teaching and doing assessment online.

Seventy (70%) of participants mentioned that their students were not trained to use MS Teams and had poor technological skills, while the remaining teachers reported having benefited from the assistance of their tech-savvy students to learn what they called “new technologies.” Participants also added that some of their students did not own mobiles or laptops and that MS Teams required high data usage which limited and negatively affected lesson delivery and online assessment.

Participants mentioned that, because students had often to turn off their cameras to improve internet reception, they were “unable to see their eyes and facial expressions” for the duration of the class. As a result, interaction between teachers and learners, and among the learners themselves was inadequate. “Communication with students was difficult,” noted one of the participants, while all of the participants complained that it was difficult to find out who was in fact attending the online sessions or participating in class.

The majority of participants (70%) reported not trusting students who claimed to have a poor internet connection. For them, those students were simply making excuses for missing classes.

In addition to the technological hurdles aforementioned, all participants mentioned that as a whole they did not have enough time to adequately prepare their courses and move to online assessment due to the sudden changes in academic life caused by the Covid-19 outbreak.

### **Teachers’ Experiences with Online Assessment**

All of the participants emphasized that they found online assessment difficult especially in regard to issues of validity, reliability, and practicality.

A common problem all participants reported was that some students would claim that they could not sit for exams because they had no electricity at the exam time. One of the participants questioned whether it was valid and reliable to create another exam exclusively for those students, or whether they should be given the same one the class had taken.

Another participant mentioned that she did not use online exams in her remote classes because she does not use them in her in-person courses, and, instead, relies on a variety of activities to do formative and summative assessments. In fact, giving quizzes and exams online was not always feasible. The first time one of the participants gave a ten-minute online quiz, the whole class time was wasted because the students were not familiar with the technology she used.

Other participants (6/10) mainly relied on project-based assessments though they are not sure whether the students themselves completed the assignment or whether they were helped by a surrogate.

### **Use of Various Online Assessment Types**

The interviews focused on four types of assessments: diagnostic, formative, ipsative, and summative. When asked about the different types of assessments they used in their online classrooms, all participants said that they had divided their online assessments into two main parts as requested by the Lebanese University. Activities and other grades made up for continuous or formative assessment (40%), while the final exams or summative assessment weighted 60% of the total course grade.

**Online Diagnostic and Formative Assessments.** Most participants (8/10) asked oral questions at the beginning of each session to diagnose their students' knowledge of materials from previous courses or knowledge of materials of the previous sessions of the same course. Two participants did not use diagnostic assessment because they assumed that their courses were being taken by their students for the first time.

**Table 1. Diagnostic and Formative Assessments in Online Classes**

Types of Assessment		Examples from Verbatim Quotes
Assessment for Learning	Diagnostic	<ul style="list-style-type: none"> <li>- "I mainly relied on oral discussions."</li> <li>- "I did not use diagnostic assessment."</li> <li>- "I checked orally, at the beginning of each session, whether the students had grasped the content studied in the previous session."</li> <li>- "I asked a set of questions to evaluate their knowledge of materials studied in previous courses or in the previous session of the same course."</li> </ul>
	Formative	<ul style="list-style-type: none"> <li>- "I used MCQ and T/F online quizzes. I also encouraged students to work on assignments in pairs."</li> <li>- "I didn't use online quizzes because the students themselves had to make-up exams and create lesson plans."</li> <li>- "I gave one online quiz, and assigned a project, and oral presentations in my courses."</li> <li>- "I mostly graded the students' assignments and checked for their understanding by asking them to comment orally on their classmates' lesson plans and delivery."</li> <li>- "I assessed students using graded assignment and penalized late submissions, I also gave short 10-minute</li> </ul>

		<p>online MCQ quizzes and assigned weekly reflections and presentations of each chapter studied.”</p> <p>- “I checked for students’ understanding using oral questions, projects, and case studies.”</p> <p>- “I asked students oral questions, solved exercises synchronously, and asked them to summarize the lessons’ main points. Oral presentations were done in groups.”</p> <p>- “I asked students questions about materials I sent to them ahead of each class.”</p>
--	--	--

All of the participants used formative assessment or synchronous learning during their online sessions and asked comprehension check questions to make sure students had understood the materials. Projects, graded assignments, online quizzes, oral presentations and case studies were the most common types of formative assessments used (see Table 1). They mostly gave oral (synchronously) and written (asynchronously) feedback. Sometimes the participants gave individual or group feedback, and they asked students to comment on their classmates’ projects or performances using specific rubrics.

Most participants who taught courses in action research, practicum, methodology and pedagogy considered the materials they covered too complex to be addressed by multiple choice online questions. As a result, they resorted to using project-based and performance-based assessments in addition to case studies.

Participants who used online quizzes and exams, and participants who chose not to use them faced similar challenges that affected their classroom practices including power cuts, poor internet connection, systematic cheating, and other issues related to validity, reliability, and practicality.

Regarding formative assessment, 40% of participants used the same types of formative assessments they normally use in their in-person classes. Mostly, they corrected students’ projects, provided written feedback, and assigned grades. One participant would give oral and immediate feedbacks via WhatsApp to each student who had presented a lesson plan during class time. Others (3/10) offered their feedback in class and encouraged students to do peer assessment. One participant encouraged students to work in pairs on various assignments because “they [were] going to work together [after class time] anyway”.

**Online Ipsative Assessment.** Around half of the participants used ipsative assessments in their online courses. Their main motivation to do so was to help their students improve performance and learning (see Table 2). Some participants asked their students to monitor their own progress by moving from lesson plan 1 to the last written



lesson plan in the semester. Other participants helped students improve their written projects and reflections by offering constant feedback and grading only their last assignment.

**Table 2. Ipsative Assessment in Online Classes**

Type of Assessment		Examples from Verbatim Quotes
Assessment as Learning	Ipsative	<ul style="list-style-type: none"> <li>- “Students were encouraged to comment on their friends’ presentations on parts of a lesson that focused on language, audiovisual aids, participation, introduction, and others. One question asked to both the presenter and to the rest of the class was: If you were to do your work over again, what would you improve? If you had been in her place, what would you do to improve her presentation?”</li> <li>- “Students showed great improvement preparing their lesson plans from lesson 1 to lesson 4.”</li> <li>- “The first three reflection papers were not graded because the students were learning how to write them.”</li> <li>- “In training, during online microteaching sessions, one student would play the role of the teacher and two classmates the role of students. Discussions involved commenting on their performance and suggesting ways to enhance the next role play assignment.”</li> <li>- “The final grade was based on the projects that I corrected and returned to the students several times to help them improve their work.”</li> <li>- “I asked students to create a folder to be used as a portfolio in which to collect their multiple lesson plans and other course work so they could monitor their progress.”</li> </ul>

**Online Summative Assessment.** In most courses, the final exams were paper-and-pencil exams taken at the university in spring 2020. All of the participants were very satisfied with this administrative decision. Consequently, all students will be offered the same chances for success seen that many students lack ICT skills and resources. Moreover, teachers stated that they can control cheating more efficiently in the faculty. However, in courses such as practicum I, practicum III, and action research II, the final exam was substituted with a project.



**Table 3. Summative Assessment in Online Classes**

Type of Assessments		Examples from Verbatim Quotes
Assessment of Learning	Summative	<p>- “It was a great relief to find out that the students were going to sit for the final exams on campus because online exams aren’t trustworthy. We never know who is actually working on the exam.”</p> <p>- “We were not trained to construct online exams and stop online cheating.”</p>

### **Online Assessment in Fall 2020-2021**

All of the participants were pleased with the university’s decision to hold the spring 2020 final exams in-person and on campus while following the preventive health protocols. They all agreed that if instruction continues to be remote in the fall of 2020-2021, the final exams should also be taken on campus.

Should remote instruction continue in the fall semester, most participants plan to use projects and graded assignments as tools of formative assessment. One participant plans to forgo online quizzes because she simply cannot monitor cheating, while another is considering using online quizzes because she would have quick results and save class time for discussions. She also said that she believes microteaching should be done exclusively in-person. Another participant said that she plans to use graded assignments such as a set of questions she will prepare for individual students at each online session. That way, she will be able to verify whether they are studying the course materials.

According to a few participants (3/10), the current system the university uses for grade assignment should be reviewed to accommodate online summative assessments, which they find more convenient during the pandemic. However, they are aware that such changes would require new educational policies that take into account blended learning. Their views are articulated in the statement of one teacher who concluded her interview by saying: “I believe assessment was not that easy to do, but I think we could reach satisfactory results considering the difficult circumstances we are facing in Lebanon.”

One last point all participants made is that they agree with their students in that they will need to receive a thorough and adequate training in the Microsoft Teams platform if classes in the fall 2020-2021 are to be held online.

## **DISCUSSION**

When asked about the challenges’ teachers at the Lebanese University’s Faculty of Pedagogy faced while teaching and assessing their students online in the spring of 2020, they reported technical issues, poor LMS training, and the use of traditional tasks instead of online quizzes and exams.

### **Technical Challenges**

The ten participants in this study faced multiple challenges while teaching remotely during Lebanon’s first Covid-19 pandemic lockdown. However, all of them noted that

their most significant challenge was having to tackle the problems caused by the country's poor infrastructure, i.e., power cuts and poor internet connection. As a result, essential aspects of teaching and learning, were disrupted, including assessment.

### **Limited LMS Training for Teachers and Students**

The participants pointed out that the university also neglected to provide them with clear guidelines and with a web-based system to assess their students. Their comments reinforce the notion that resources such as Learning Management Systems (LMS), in this case Microsoft Teams, should be tapped into and properly mastered by educators since they can be essential to help develop and process online quizzes and tests (Cukusic et al., 2014).

Another of the participants' main challenges was the fact that their students themselves had no training on how to use the various applications and platforms needed to take online classes. Consequently, class time was wasted working on and submitting online quizzes on Microsoft Teams, for instance.

### **Alternatives to Online Quizzes**

All of the participants concurred that online assessment was extremely difficult particular in relation to validity, reliability, and practicality. Many teachers (8/10) admitted they were not trained to construct online quizzes since traditional types of assessments need to be reworked to fit the new online classrooms (Bearman et al., 2020).

The 10 participants were clearly pro-active and engaged in tackling different activities to assess their students online using exams, written and oral projects (Weleschuk et al., 2019). Therefore, they opted for the project-based assessment, lesson planning and delivery, reflection papers, and oral presentations in an attempt to decrease/control cheating and better assess the learned content in different courses. However, the very good solutions they found did not go unchallenged. 60% of participants said they were unable to verify the identity of the individuals working on a project when their students were assigned individual or group projects. For all participants, such an array of hurdles made online assessment impractical and unreliable.

Besides the challenges aforementioned, the participants explained the different types of assessments they used in their online classrooms to gauge their students' learning. They used diagnostic and ipsative assessments to motivate students in addition to formative assessment and continuous feedback to monitor progress. They also supported holding final exams on campus to ensure the reliability and validity of these tests.

### **Motivating and Engaging Students Online**

In an attempt to engage their students, most participants (8/10) relied on diagnostic assessment. Typically, they would ask their students oral questions to check their knowledge of a specific topic before starting each lesson (Cukusic et al., 2014). The results of the interviews showed that graded assignments and ipsative assessment motivated students to work on various online activities. According to one of the participants, some students were not able or motivated to take charge of their learning

and study independently unless she announced their assignments would be graded (Baleni, 2015). As an alternative to student passivity, various participants resorted to ipsative assessment to encourage their students to improve the content and delivery of their own presentations, lesson plans, reflection papers, and other projects (Zhou & Zhang, 2017). Working on projects in pairs or in groups was also encouraged in participants' classes seen that students would rely on each other and work together anyway, one teacher clarified.

### **Commonly Used Online Formative Assessment and Feedback**

Participants relied heavily on formative assessment tools. They utilized a variety of graded activities to monitor their students' progress during their online sessions, including oral questions, project-based activities, oral presentations, online quizzes, and other graded assignments. They also provided their students with continuous oral and written feedback (Rolim & Isaisas, 2018) including audio-recorded feedback which they regularly sent via WhatsApp to each of their students (Johnson & Cooke, 2016). In addition, many participants encouraged their students to practice peer assessment and comment on their classmates' presentations and lesson plans (Suen, 2014). Engaging most students online in various activities was very challenging to most teachers; thus, they found peer assessment beneficial to enhance students' learning of the content under study.

### **Supporting Final Examination on Campus**

Despite the benefits mentioned in the literature about the flexibility and practicality of online quizzes in summative assessment (Cukusic et al., 2014), all participants supported the university's decision to hold final exams in-person and on campus. All health protocols were mainly followed such as adding the shifts and accommodating smaller numbers of students in classrooms similar to the precautions taken by the Lucknow University (The Hindustan Times, 2020). All participants agreed that the university's web-based system was not well developed to handle the tests of a large number of students, monitor test-taking and prevent cheating.

### **CONCLUSION**

All of the participants in this study had their practice as educators radically altered during an unprecedented time in which a public health emergency created by the Covid-19 pandemic converged with Lebanon's political and economic collapse. Consequently, they were compelled to face various obstacles at simultaneous and different levels, some of them, as in the case of Lebanon's crumbling infrastructure, were completely outside of their control. As teachers, they were suddenly called to rethink and restructure their classroom practices without minimal technical, educational and administrative support. Thus, dealing with essential aspects of instruction such as planning, classroom management, and interaction with students after classes were moved online was a constant and difficult challenge.

Conversely, and precisely because they were expected to adjust to new and difficult circumstances, some of the participants reported being very satisfied with their performance at the end of the spring semester. They also feel more confident in their

ability to deal with new educational technologies and consider themselves better prepared to return to online teach in the fall of 2020-2021 if they are required to do so.

Although this study is still preliminary, it offers a well-grounded overview of how the teachers at the faculty of Pedagogy of Lebanon's only public university managed to maintain their daily classroom routines. They also had to adapt the assessment tools they use to an entirely digital format with a limited support from the administration during the early stages of the Covid-19 outbreaks.

Given the limitations caused by the current health crisis, this study's pool of participants was small. Clearly, more teachers from different faculties should be invited to participate in future research. However, in their well-meaning rush to gauge the benefits of online instruction, implement its use, and address the challenges faced by parents and educators during a public health crisis, researchers neglected to pay attention to the needs and anxieties of teachers from whom much was expected. In addition, more studies should explore the possibilities of supporting students socially and psychologically in case remote teaching and learning are maintained due to a prolonged period of Covid-19 pandemic.

## REFERENCES

- Alruwais, N., Wills, G., & Wald, M. (2018). Advantages and challenges of using e-assessment. *International Journal of Information and Technology*, 8(1), 34-37. Retrieved from <http://www.ijiet.org/vol8/1008-JR261.pdf>
- Baleni, Z. (2015). Online formative assessment in higher education: Its pros and cons. *The Electronic Journal of e-Learning*, 13(4), 228-236. Retrieved from [www.ejel.org](http://www.ejel.org)
- Bearman, M., Dawson, P., Ajjawi, R., & Tai, J., Boud, D. (2020). Re-imagining university assessment in a digital world. *The Enabling Power of Assessment*, 7. Retrieved from <https://doi.org/10.1007/978-3-030-41956-1>

- Carhill-Poza, A., & Chen, J. (2020). Adolescent English learners' language development in technology-enhanced classrooms. *Language Learning & Technology*, 24(3), 52-69. Retrieved from <http://hdl.handle.net/10125/44738>
- Chamberlin, K., Yasué, M., & Chang, C. (2018). The impact of grades on student motivation. *Sage Journals*. Retrieved from <https://doi.org/10.1177/1469787418819728>
- Cigdem, H., Ozturk, M., & Topcu, A. (2016). Computer in human behavior. *Elsevier*, 522-531. Retrieved from <http://dx.doi.org/10.1016/j.chb.2016.03.070>
- Corbin, J., & Strauss, A. (2008). Basics of Qualitative research: Techniques and procedures for developing grounded theory. *Thousand Oaks*, 12(3), 614-617. Retrieved from <https://doi.org/10.1177/1094428108324514>
- Cukusic, M., Garaca, Z., & Jadric, M. (2014). Online self- assessment and students' success in higher education institutions. *Elsevier*, 100-109. Retrieved from <http://dx.doi.org/10.1016/j.compedu.2013.10.018>
- Dermo, J. (2009). E-assessment and the student learning experience: *A survey of student perceptions of e-assessment*. *British Journal of Educational Technology*, 40(2), 203-214. doi: 10.1111/j.1467-8535.2008.00915.x
- Elsalem, L., Al-Azzam, N., Jum'ah, A., Obeidat, N., Sindiani, A., & Kheirallah, K. (2020). Stress and behavioral changes with remote E-exams during the Covid-19 pandemic: A cross-sectional study among undergraduates of medical sciences. *Elsevier*, 60, 270-280. Retrieved from <https://doi.org/10.1016/j.amsu.2020.10.058>
- Hughes, G., Wood, E., & Kitagawa, K. (2014). Use of self-referential (ipsative) feedback to motivate and guide distance learners. *Open Learning: The Journal of Open, Distance and e-Learning*, 29(1), 31-44. Retrieved from <https://doi.org/10.1080/02680513.2014.921612>
- Johnson, G., & Cooke, A. (2016). An ecological model of student interaction in the online learning environments. *Handbook of Research on Strategic Management of Interaction, Presence, and Participation in Online Courses*. doi: 10.4018/978-1-4666-9582-5
- Khan, R., & Khan, S. (2018). Online assessments: Exploring perspectives of university students. *Education and Information Technologies*, 661-677. Retrieved from <https://doi.org/10.1007/s10639-018-9797-0>

- Kearns, L.R. (2012). Student assessment in online learning: Challenges and effective practices. *Merlot Journal of Online Learning and Teaching*, 8(3), 198-206. Retrieved from [https://jolt.merlot.org/vol8no3/kearns\\_0912.pdf](https://jolt.merlot.org/vol8no3/kearns_0912.pdf)
- Özden, Y., Ertürk, I., & Sanli, R. (2004). Students' perceptions of online assessment: A case study. *Journal of distance education*, 19(2), 77-92.
- Rolim, C., & Isaias, P. (2018). Examining the use of e-assessment in higher education: teachers and students' viewpoints. *British Journal of Educational Technology*, 50(4), 1785-1800. Retrieved from <https://doi.org/10.1111/bjet.12669>
- Son, C., Hedge, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of Covid-19 students' mental health in the United States: Interview survey study. *Journal of Medical Research*, 22(9), 1-17. doi: [10.2196/21279](https://doi.org/10.2196/21279)
- Suen, H. (2014). Peer assessment for massive open online courses. *International Review of Research in Open and Distributed Learning*, 15(3), 312-323. Retrieved from <https://doi.org/10.19173/irrodl.v15i3.1680>
- Weleschuk, A., Dyjur, P., & Kelly, P. (2019). Online assessment in higher education. *Taylor Institute for Teaching and Learning*. Retrieved from <https://taylorinstitute.ucalgary.ca/sites/default/files/TI%20Guides/Online%20Assessment%20Guide-2019-10-24.pdf>
- Zhou, J., & Zhang, J. (2017). Using ipsative assessment to enhance first-year undergraduate self-regulation in Chinese college English classrooms. *Ipsative Assessment and Personal Learning Gain*, 43-54. Retrieved from [https://doi.org/10.1057/978-1-137-56502-0\\_3](https://doi.org/10.1057/978-1-137-56502-0_3)
- (n.d). (2020). Post Covid: Lucknow University panel suggests ways to hold exams. *Hindustan Times*. Retrieved from <https://www.hindustantimes.com/lucknow/post-covid-lucknow-university-panel-suggests-ways-to-hold-exams/story-7xLQYfJm1t9TtH7klNUgHJ.html>