

# Lessons Learned: Online Examination and Assessment Practices During Pandemic

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Universities embraced online mode of teaching in lieu of traditional classroom teaching due to global emergency of CORONA virus all over the world. Universities and degree awarding institutions (DAIs) in Pakistan broadcasted online lectures and conducted examinations via same mode of communication. Online examination system was grounded on the philosophy to safeguard wellbeing of students, teachers, and examination staff deputed on examination duties. This research deliberates online examination and assessment practices employed during pandemic in Pakistan. The leading author engaged online classes and conducted online examination during this national emergency. Microsoft Teams Computer Software was used for E-teaching and E-examination. E-examination posed certain barriers for students since it was entirely new and novel experience for students. The potential barriers were uploading answer scripts on software, uploading answer scripts in irrelevant box, answer script submission via email, WhatsApp, load shedding of electricity, sluggish internet speed, low motivation, physical and mental fatigue and poor voice quality. Quality of uploaded answer scripts was dull and problematic for assessing and awarding marks. This study recommends robust, safe, reliable and secure mechanism of online teaching and examination mechanism in Pakistan. In this dimension, both Universities and Higher Education Commission (HEC) of Pakistan establish a joint venture to formulate sturdy strategies mitigating online examination and assessment issues in larger interest of academics in the country.

**Key words:** *Online Examination, Assessment, Practices, Global Emergency*

## 1. Introduction

Sudden outbreak of COVID-19 affected education system of the world. Institutions stopped academic activities instantly to safeguard safety and security of students, faculty and staff working in academic institutions. Alternative means to continue system of education were hurred imparting education to students at their place of living. Universities decided launching online mode of teaching and learning to save semester loss of students. YouTube, Moodle, Gmail, Google classroom and Microsoft Teams software was used for online mode of education by different universities of Pakistan. Since classes held online thus; examinations were conducted through same mode of communication. Teachers prepared question papers and uploaded on computer software. Students were already registered for online classes thus, only an examination folder was designated on the software. Teachers uploaded instructions pertaining to examination hours and submission of answer scripts in specified folder designated for examination purpose. It is mentioned that universities set different examination hours according to their suitability and sustainability of system. This online mode of examination was never without difficulties and problems for many students. Results were prepared, shared with students and then submitted to examination departments for official announcement. This paper discusses landscape of online examination and assessment practices employed by universities during COVID -19 pandemic. Significance of the study relies on the rationale that this scholarly work depicts picture of online examination and assessment practices in wake of COVID-19 pandemic

## 2. Review of Related Studies

Literature review indicates teachers and students' perceptions about advantages and disadvantages of online examinations (Kuikka et al., 2014; Baleni, 2015; Farzin, 2016; James, 2016). The main advantage of online examination is fast feedback (Hodgson & Pang, 2012; Kuikka et al., 2014) provided to students since answer scripts are in quick approach of teachers. E-examinations were familiarized as an effective mode of assessment because of timely and quick feedback and it is challenging for teachers in shape of large classes (Nuha Alruwais et al., 2018). E-examinations have considerably changed academics in the world (Andrew E. Fluck, 2019) specifically in pandemic. Normally, examination departments conduct examinations and handed over answer scripts to teachers at respective departments. This old fashioned system of examination devours time, energy and financial revenue of organizations. Online mode of education facilitates teachers assigning home assignments to students, checking, sharing of marks, and uploading results on computer software for student satisfaction before submission to examination departments. In case any mistake is detected it is corrected immediately. This practice generates sense of student satisfaction and motivation for online learning. Online assessment has advantages but it has certain flaws too e.g. poor technical infrastructure, students' hardware and software poor knowledge, assessment process, scoring issues and evaluation of group projects (Nuha Alruwais et al., 2018).



Technical failures in E-examinations are likely even in this technological advancement era (Mathew Hillier et. al, 2020). Technical problems imperil e-examinations validity and open window of cheating (Aparna Chirumimilla et al., 2020). Kishore Bisht et al., (2020) study exposed internet connectivity as problematic in online examinations during COVID-19 pandemic. Internet is problem for poor students because they do not have internet with computer devices (Najmul Hassan et al., 2020). Online assessment mode in place of traditional examination system may have ethical considerations and assessment errors (Nazia Mumtaz et al., 2021). Universities give less importance to internal assessments during COVID-19 resulting cancellation of examinations (Burgess & Sievertsen, 2020). These authors add that students given predicted grades in place of actual grades can influence labor market. Hodgson and Pang (2012) surveyed students at Hong Kong University. Results reported that students were satisfied with online examinations because of timely feedback. Educators count numerous benefits of online examination for instance; saving of time, effort and cost (Dreher et al., 2011; Baleni, 2015).

Online examinations save students', teachers, university time, effort and expenditures. It minimizes paper work e.g. printing, time and staff effort (Dreher et al., 2011). If principles of academic integrity are strictly followed, e-examinations can be reliable, robust and valid, and credible in all aspects. Academic integrity means fair, honest, and upright behavior of people working in universities. Teachers, students, administrators and staff fall in this domain. Thus, it requires from all stakeholders to uphold high principles of integrity shaping image of universities globally bringing them in world ranking. Student integrity is based on high moral and ethical principles to be pursued in all fields of life. Teachers integrity trusts on the principles imparting quality education to students with all sincerity, devotion and dedication considering a noble profession. Administration integrity encompasses that university heads should be fair, honest and true professional run universities affairs effectively and efficiently. They should be free from corruption, favoritism, and nepotism. They should always uphold organizational interests upon their own. Unfortunately, it has been seen that various university heads in Pakistan face charges of corruption and embezzlement of university funds. Thus, they face corruption cases in accountability courts of the country. Sadly, the approach of plain living and high thinking is missing in higher education institutions of Pakistan. Honest and dedicated faculty just anxiously wait for any miracle to happen that can boost culture of merit, honesty and dignity in higher seat of academic learning. Heinrich et al. (2009) describe that marks given to students should be reliable. Online examination marking is more accurate compared to paper-based checking (Dermo, 2009). Students exhibit positive opinion about examination marking accuracy, because they consider that technology assessment is more reliable and free from errors (Baleni, 2015). Online examination system is more suitable for MCQs and short-answer questions (Farzin, 2016). Fairness, transparency, and accuracy of grading in online assessment attract students (Iannone & Simpson, 2013). E-examinations develop student confidence due to transparency in marking and preparation of results without delay (Baleni, 2015; Farzin, 2016).



Online examination benefit it minimizes cheating chances if questions are given inversely (Farzin, 2016). Each student be given different set of questions randomly selected (Dermo, 2009). However, there is possibility that some students may have difficult questions then fairness issue can arise (Dermo, 2009). Lim et al., (2006) investigated medical students' perceptions about computer-based versus paper-based testing. Results say that students favored computer testing, because it allowed images of good quality. Ferrao (2010) studied MCQs use in Statistics and Mathematics course at University of Beira Portugal. Results came that students preferred online examination for Mathematics and Statistics. Kuikka et al., (2014) surveyed teachers at Turku University of Applied Sciences Finland. Results revealed teachers defended old type examinations because of certain problems in online examinations. These authors concluded that teachers need training to overcome online examination challenges. Whitelock (2006) stated that online examination policy shadow pedagogical principles, rather symbolizing innovative technology. Sorensen (2013) studied perceptions of students about e-assessment in Moodle quizzes in chemical engineering module. He found that students favored online assessment and desired to be followed in all courses. Al-Saleem et al., (2014) discussed security need in online examinations and propose various systems improving teaching, learning and assessment mechanism.

Anusha et al., (2012) highlighted cheating issues in examinations as students can interact and browse material from internet. Authors proposed webcam use monitoring student examinations. They supported weblock software use for displaying examination material only and other applications be locked. Not only this, but screen capture, copy paste, right-click menu options, browser menu, toolbar and function keys be disabled. Another security requirement is identity confirmation of test candidates. It can be employed through hardware and software tools e.g. webcam, fingerprint readers and biometric machines (Sarrayrih et al., 2013). Layefa & Jackson (2019) indicate that student identity confirmation is major issue in online mode. These authors suggested that institutions should adopt encryption process stopping data transfer. Student motivation play paramount role in achieving integrated learning in situations like COVID-19 as per studies (Debra Hampton et al., 2020; Lokanath Mishra et al., 2020). Inayatullah Kakepoto et al., (2021) study on "Pedagogical Shift: Faculty insights about online teaching Barriers during COVID Pandemic" revealed that load shedding of electricity impeded online teaching in universities of Pakistan. Inayatullah Kakepoto et al., (2021) explored poor computer literacy, load shedding of electricity, and slow internet speed as online learning barriers for students in Pakistan. Inayatullah Kakepoto et al., (2021) study on 'Higher Education Commission COVID guidelines and Online Readiness of Universities of Pakistan' exhibited that evaluation quality and internet problems were online barriers of students.

### **3. Research Methodology**

Descriptive qualitative research approach was used for this study. Qualitative methods include descriptive data in spoken or written words (Sugiyono, 2014). This study does not cover



numbers, symbols, or coefficients generating relationship among variables. Observation and semi structured interviews were research tools for this study. The leading author taught online course, conducted examination and interviews with students. This study rationale is based on this phenomenon. Observation facilitated students' academic development, assessment, grading marks, and semi structured interviews led analyzing students' examination preparation. Broadly speaking, unfair means element can never be eradicated in E- examinations. Observation and semi structured interview approach provided judgement about perceived and practical knowledge of students for examination. Interview approach allowed researchers drawing outcomes of online examination. Fifty-three (53) students were participants and each student was given 8-10 minutes' semi structured interview. Interview process lasted about 6-7 hours. The Higher Education Commission of Pakistan pressed public and private universities of the country assessing students' academic progress during pandemic. Universities were advised no student should be promoted without assessment. Assessment mode may include 10-minutes presentation, 15-20 minutes' oral examination, audio video presentation, multiple choice questions, writing subject research paper, and open book examination of 2-3 hours (HEC Guidance on Assessments and Examinations). This research involved written examination of 2-3 hours and 8-10-minute semi structured interviews and result was prepared in form of a report. Qualitative data focuses on text rather numbers. Text that qualitative researchers analyze is often in transcripts, notes, pictures and images. Preparation of data results in ordinary words, without using symbols in informal method (Ihsan, 2011). This study describes findings in words and themes generated from data.

## **4. Results**

### *4.1 Written Examination*

Universities adopted diverse examination modes assessing students' subject knowledge during pandemic. The most common method of assessment was written and viva-voce examination. These methods focused on identifying students' academic strength, weakness and improvement in subject knowledge. First, Midterm semester examinations were conducted followed by Final semester examination. Midterm semester examination had choice for attempting questions and in final semester examination there was no choice for attempting answers. Written semester examinations demonstrated that students' scored well and teachers adopted lenient approach. Because, online teaching had certain problems that students and teachers faced together. In online examinations use of unfair means for instance, sharing of material with each other or searching answers from internet can never be rejected on the part of students. Interestingly, students had enough time for submission of answer scripts. It ranged from 2-3-8 and 36 hours in certain instances. The rationale for providing enough time for answer script submission was developed on the philosophy that students of rural areas face various problems for example, load shedding of electricity, and poor internet speed. Additionally, following problems surfaced in online examinations.

**Table 1.** Written Examination Barriers

S#	Variables	Description
1	Load shedding of Electricity	Load shedding of Electricity is an old issue of Pakistan and its history is spread over many decades. All governments of his time claim tall claims to overcome this important issue but still it lingers on. It affects academic, economic, social and industrial development of the country. Power companies schedule different load shedding timings in urban as well as rural areas. Due to load shedding of electricity, students failed to submit answer script within given time and they registered such complaints with teachers via text messages, and WhatsApp messages.
2	Slow Internet Speed	Slow internet speed is communal practice in Pakistan. Internet companies/ warehouses charge exorbitant rates of internet packages, but fail to provide speedy internet quality to consumers up to international standards. Slow internet speed is unable to run computer software used for academic purposes for few hours continuously. Students complain about slow internet speed and because of this problem they could not upload answer scripts in designated folder within time.
3	Quality of Answer Copies	The quality of uploaded answer scripts was of poor quality. It created problems for teachers to assess appropriately and grading. It might be due to poor computer skills of students or lack of experience towards online examinations.
4	Poor Image Quality of Answer scripts	Some students uploaded answer scripts in images taking shots from mobile. Quality of such images was very poor, dull and problematic for teachers for assessing answer scripts and grading. It speaks that students need computer trainings in terms of software and hardware to meet academic challenges of the time.
5	Submission of Answer Scripts in irrelevant folders	Some students uploaded answer scripts in irrelevant folders. Teachers created various folders on computer software for teaching, assignments, and examination purpose. It is possible that due to examination anxiety, pressure, nervousness or poor computer knowledge and skills students submitted answer scripts in irrelevant folders. It twisted problems for teachers for assessing and awarding marks.
6	Answer script submission via Emails	Some students submitted answer scripts via email. Because, after expiry of specified time computer software denied submission of answer scripts. Thus, students found it better submitting answer scripts to teachers via email. They traced teachers' email ids from university website. Requesting messages were sent to teachers for accepting them, because load shedding of electricity and slow internet speed did not allow them answer scripts in time.
7	WhatsApp communication	Some students used WhatsApp for answer script submission. Altogether, they sent same answer scripts via emails. Requesting messages were sent requesting therein for accepting them since they failed uploading answer script on software. Actually, in

		COVID pandemic situation various organizations run official business on WhatsApp thus, students think that it is an official mode of communication.
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#### 4.2 Viva-Voce Examination

Viva-Voce examination was conducted following written examination. Semi structured interviews were conducted from topics covered during the course. Main focus was on topics covered in question paper. Each interview lasted about 8-10 minutes. This session was very tough for teachers and students. Because, teachers and students were engaged in written examination in morning time. Interview session lasted late evening thus, students faced anxiety and boredom with this process. Students keep anxiously waiting for a call form teacher. Apprehension prevailed they might miss teacher interview call. Moreover, they had apprehension that due to load shedding electricity can go any time, or internet can become slow that can disrupt interview session. The home environment is not soothing and any untimely eventuality can happen that affect grading of marks. The interview objective was analyzing students actual prepare about examination. Additionally, it had to assess that students have not used any kind of unfair means in written examination. In e- examinations the impression of using unfair means on the part of students can never be dispelled. Thus, 8-10 minutes' interview strategy was designed to stop unfair means in examinations. In interview session these barriers surfaced e.g. student low motivation, physical and mental fatigue, home environment, load shedding of electricity, slow internet speed, interview anxiety, and poor voice quality.

**Table 2.** Viva-Voce Examination Barriers

S#	Variables	Description
1	Student Low Motivation	Students faced low motivation because of long hours waiting to participate in interview session.
2	Physical and Mental Fatigue	Students faced physical and mental fatigue since early in the morning they had written examination. Later, they participated in viva-voce session.
3	Home Environment	Home environment for some students was not soothing for speaking since different type of voices and noises affected interview of the student.
4	Interview Anxiety	Anxiety is part of oral communication for many students. Students were found anxious and apprehensive during interview. It might be due to long hours of waiting.
5	Poor Voice Quality	Poor quality of voice affected interviews. It might be due to network problem, slow internet speed or different type of noises in the vicinity.



## 5. Discussion

Load shedding of electricity is a leading problem of Pakistan in this modern age of rocket science technology. It is not the problem of today but it lingers for many decades. It affects academic, economic, and industrial development of the country. Truly speaking, every political party before coming into power assures public that after coming into power they will overcome energy crisis in the country. Unfortunately, still it has remained merely a dream for the people of Pakistan. It poses serious threats to online education in Pakistan specially COVID pandemic days. Students could not attend complete online lecture series during to this problem. Not only this, but they faced problems in appearing e-examinations. In summer season when there is high consumption of energy 5-8-10-12 hours' load shedding of electricity is observed in urban and rural areas in a day. Pakistan is an agricultural country and its major population lives in rural areas. Major population of students come from rural areas and are enrolled in public sector universities of the country. The academics of these students suffer in emergency days. It was the reason that universities allowed answer script submission time to students ranging from 3-5-8 to 36 hours. Sadly, world has reached high pinnacles of progress in computer, information, and communication technology but Pakistan faces energy crisis in the country. On the other hand, the same country is a nuclear power. So the rulers of the country must develop this approach 'where there is a will, there is a way'.

Slow internet speed is common problem in Pakistan. Home users, offices and universities affect because of this problem. It poses serious problem to students specially in pandemic. In fact, it is the responsibility of state imparting education to students at their home stations. Moreover, an effective mode of examination and assessment procedure must be introduced electronically. Slow internet speed complaints students registered with Higher Education Commission of Pakistan. As a result, HEC communicated same student concerns and issues to Universities Degree awarding institutions (DAIs). Internet warehouses or companies operating internet business in Pakistan claim tall about high quality of internet speed but in true sense situation is entirely different. Thus, Ministry of Information Technology (IT) Pakistan should talk to internet companies for redressing internet issues of students, institutions and general public. Quality of answer scripts uploaded on computer software was of poor quality. There might be many reasons but students' poor computer skills, expertise and lack of e-education and e-examination are one of the reasons. Students of all disciplines such as Engineering, Science, Arts, and Medical Universities of Pakistan should provide computer training to students in order to face future challenges of COVID like emergency situations. Authors are of the view that in forthcoming computer knowledge and expertise shall occupy major place since world is moving towards digitization of all businesses of life including academics. Thus, it is need of the time that students across all academic disciplines should possess computer knowledge and skills.





Surprisingly, some students uploaded images of answer scripts on computer software used for examination purpose. Quality of uploaded images was quite dull and problematic in reading the material. Therefore, it created serious problem for teachers assessing answer scripts and award marks. Not only this, but some students uploaded answer scripts in irrelevant folders, because computer software contained various folders for example e-teaching, assignment, and examination folder. Upon not locating few students' answer scripts teachers became apprehensive that students may not lose the marks since the labour of complete semester is involved in it. Sensing the situation, teachers messaged students on computer software used for online examination that answer scripts of these roll numbers are missing. Then students realized that they have uploaded answer scripts in irrelevant folder. Such type of weird situations created problems for teachers. Student loss was that they could lose the marks. This is either ignorance of students or poor computer software knowledge.

Few students submitted answer scripts via Email. Because, they failed to upload answer scripts on assigned computer software. Teachers email Ids were located on university websites. Teachers were requested for accepting answer scripts and award of marks. It emerged that universities should arrange various computer trainings on software and hardware application use for students. Universities have potential for arranging computer trainings through directorate of continuing education or student consultative bureau. On the other front, few students routed images of answer script on teachers WhatsApp numbers. In COVID pandemic, for student convenience teachers shared contact numbers with his students and they were allowed that in case of any academic problem they can contact with teacher specially during online examination. Teachers were requested for accepting their answer scripts since computer software did not allow them file submission. As a mark of precaution, students emailed the same answer script that can be kept as record. WhatsApp communication is generally considered an unofficial mode of communication. But COVID pandemic has increased importance of WhatsApp. Many organizations use WhatsApp for academic as well as official purpose. Such situations generated fuss for teachers. It is highlighted that for examination purpose WhatsApp communication has no importance and it is never reliable, authentic and robust mode of communication.

Oral examination results indicated that certain factors affected via voce student examination. Student low motivation is one of them. Students waited for 5-6 hours for their turn of interview. Experiences speak that in future universities should schedule written and oral examinations on different days. Because, it gives an air to the wrong impression that universities have adopted examination policy just for formality. Additionally, due to long process of online examination students faced physical and mental fatigue. It is mentioned that working on computer for many hours is an exhausting job. Home environment for some students was not feasible for viva-voce examination. Interviewer and interviewee both need good space for interview. If home environment is not suitable for interview thus, it shall affect academic performance of students. It is highlighted that in Pakistan, there is a joint family system and many families live together



under one roof. Thus, it is not possible that every student enjoys separate room for study. One of the students during interview shared this information that he is attending interview at his village while sitting under a tree. Interview anxiety was a problem for many students. Students felt apprehension that interview call from teacher can come at any time. If they missed it, they shall lose marks. Thus, they became victim of anxiety due to this fear. Voice quality of many interviews were of sub-standard. There can be various reasons of it for instance, slow internet speed, noises, and mobile network problem. All these variables contributed towards online examination and assessment practices in Pakistan and many lessons were learnt during this process.

## **6. Conclusion**

Online examination and assessment procedures played paramount role during COVID-pandemic and many lessons were learnt from this practice. But, it is noteworthy to mention, that this experience was never without problems, issues and challenges for students, teachers and institutions. Although many impediments came on the way but sincere efforts of students, teachers and administration universities saved precious time of students. Higher Education Commission (HEC) of Pakistan also guided universities and degree awarding institutions (DAIs) to move in this dimension and an advisory issued also. Looking at future requirements, universities, and HEC should formulate operational strategies to overcome issues and barriers that come on the way of online education in Pakistan in terms of online teaching, examination and assessment practices. By completion of academic degrees in time these budding graduates shall join organizations of their choice and shall contribute in various academic, economic, social and industrial fronts. As a result, all these factors shall contribute towards progress and prosperity of Pakistan. One thing that is very important to mention that the role of information technology in education increases day by day thus, universities of Pakistan should establish effective learning management system (LMS). Moreover, computer hardware and software trainings should be arranged for teachers, students and other staff to meet challenges of the time.



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