

Factors Implementation on Online Teaching and Learning during Coronavirus Disease (Covid-19) Pandemic in Higher Education of Khyber Pakhtunkhwa, Pakistan

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Abstract

The COVID-19 epidemic exposed Pakistan's higher education system's incapacity to react to widespread unpredicted disruption throughout the world, requiring curriculum transformation to e-learning, which is a problem for whole education participants. This research has the aim of exploring the critical experiments encountered by contemporary online learning systems, as well as the key factors that enable the use of online teaching and learning platforms in Pakistan during the COVID-19 pandemic, and the challenges faced by universities in determining their readiness. By examining the COVID-19 crisis, it was observed that the quality of service had a minimal effect on the satisfaction of learners, although both the quality of information and self-efficacy were found to have a considerable influence on satisfaction. A recent research conducted by universities in Khyber Pakhtunkhwa explored the online teaching experience of 25 university educators post the launch of online learning during the COVID-19 pandemic. A variety of methodologies, such as systematic structural analysis, collaborative research articles, general statements of knowledge, observation, and surveys, were used to collect responses from the participants. Upon analysis of the responses, the primary challenges faced by both university educators and learners included identifying the computer literacy, determining the electronic environment of the institution, providing support, preparing educational staff and preparing learners for online learning. The majority of respondents agreed that an educator's methodological work is an electronic educational setting different from traditional teaching approaches. The psychological, technical, methodological, and educator programmers are critical to reducing the adverse effects of rapid education modification and implementing effective online learning.

Keywords: *COVID-19 pandemic, online higher education, challenges, learners' satisfaction,*

Date of Submission: 27-12-2022

Date of Acceptance: 07-01-2023

I. Introduction

There are various advantages to taking an online course over attending a real class. For students whose schedules or locations make it extremely difficult can join face-to-face classes, e-learning provides flexibility and accessibility. There are various advantages to taking an online course over attending a real class. For students whose schedules or locations make it extremely difficult can join face-to-face classes, e-learning provides flexibility and accessibility. (Broadbent and Poon 2015). Despite these advantages, achievement in an online learning environment is strongly dependent on a learner's capacity to engage in the learning process independently and passionately (Wang, Shannon, et al. 2013). Over the past two decades, the proliferation of online education within the United Kingdom (UK) has been evident in higher education contexts (Kebritchi, Lipschuetz, et al. 2017). It is estimated that a significant proportion of students have enrolled in at least one online course (Keengwe and Kidd 2010). As online course enrollment and the number of offerings continue to increase, higher education institutions are in need of academics who are prepared to address current issues and lead in the design and teaching of online courses (Keengwe and Kidd 2010). The COVID-19 pandemic has had a profound impact on higher education systems in Pakistan, with a shift from traditional face-to-face learning to online and network-based instruction (Almazova, Krylova, et al. 2020). In accordance with the educational ministry, face-to-face lectures have been banned in all regions and replaced with online courses (Yudiawan and Sunarso 2021). This rapid transformation of existing courses to an online format presents educational institutions with a unique challenge and an opportunity to demonstrate organizational capability (Yudiawan and Sunarso 2021). In countries where the COVID-19 pandemic danger has escalated, traditional schooling has been postponed for the time being, and distance learning techniques have been implemented (Senel and Senel 2021). Electronic learning, often known as online learning, is the use of any electronic device connected to the internet to engage in the learning process from any location and at any time (Dhawan 2020). Until now, the global

education environment has been quite competitive. All educators are focusing on the growth of Internet-based online learning in this era of digital everywhere (Mustafa, Khurshed, et al. 2021).

For all instructors and students across the world, there are several barriers to gaining acceptable access to online learning. It is critical to understand the advantages of online education over traditional physical instruction. In order to effectively identify the challenges faced by learners transitioning to online learning, it is essential to gain insights into the perspectives of those affected (Paudel 2021). To ensure a successful transition to digital education, teachers must employ active collaborative teaching methods and assist students in developing their own digital learning style (Renatovna and Renatovna 2021). Furthermore, teachers must be cognizant of the opportunities and limitations presented by online learning platforms, and aid students in cultivating self-discipline, critical thinking skills, and independent study habits. Additionally, instructors should provide frequent feedback and assessment of student effort, with the aim of fostering a learning environment that encourages students to share their experiences with other online users.

Online teaching has been an established pedagogical strategy for a number of years, particularly in a variety of areas. Despite this, there is still a lack of expertise in the utilization of online learning platforms. With the recent rise in online learning and the incorporation of technology into teaching in Khyber Pakhtunkhwa Pakistan, it is critical to investigate what drives learners' pleasure in online learning environments and to give technical training and instructions. The use of a variety of technology tools enhances the online learning environment by encouraging critical thinking in collaborative interaction. Only a few institutions in Pakistan's Khyber Pakhtunkhwa are entirely online; the remainder is traditional classrooms. However, there has been a rising integration of technology tools employing online learning systems such as the Learning Management System in recent years, especially throughout the time of Covid-19 (Almusharraf and Khahro 2020).

II. Study Background

It's worth noting that Pakistani higher education has developed substantial skills in using the internet to perform instructional activities. The university's digital education environment contains electronic information resources, electronic educational material, and an amalgamation of information and communications technology that guarantees online learners' successful understanding of education programs. Pakistan's higher education has contributed to the creation and development of "Open Education" website, a cutting-edge educational platform providing online courses in core subjects taught at Pakistani educational institutions.

The emergence of COVID-19 in Pakistan's higher education system has caused all current education for undergraduategraduate and postgraduate degree students to be moved to e-learning. Several systems, including the LMS Moodle, are used to deliver online learning and coaching. Online courses have been established for all of the current semester's subjects. The MS Teams platform is utilized to assure communication between learners and instructors, with webinar rooms for each subject developed and webinar sessions generated automatically.

In order to facilitate the transition to online teaching instructions and materials have been developed and regular training webinars are conducted. Additionally, guide and digital support teams have been created to provide assistance. Utilizing the teaching resources (electronic textbooks, study guides, exams, methodology suggestions, and materials) from the university's digital document base, which is accessible to students, faculty, and staff, can improve the educational process in this particular format. The academic team is endeavoring to modify traditional education methods and teaching techniques to suit the current realities of digital communication with learners during the COVID-19 pandemic.

III. Methods and Materials

The present study aims to define and analyze the duties of coaches in Pakistani higher education through the use of empirical methods. It further examines the preparedness of instructors to effectively deploy e-learning in the wake of the implementation of online programs amid the COVID-19 pandemic. To this end, various scientific and educational research strategies are adopted, such as systematic structural analysis, amalgamation, documentation, an extension of experience, experimental studies, observation, surveys, etc. Moreover, the authors of this work have developed, and are continuing to accumulate, experience that may be considered as participant reflections on the development and the detrimental effects of the abrupt embrace of online schooling as participants in new forms of educational process organization.

A total of 25 university professors participated in this investigation. The current study focused on responders from three generations: 15 young scientists aged a maximum of 35 years, 47 educators aged between 36 and 55, and 15 educators aged a minimum of 55. The study began in March 2021, amid Pakistan's lockdown, and ended in March 2022, between which there are various levels of experimental investigation.

The starting part of this research focused on learning about the respondents' backgrounds and developing a series of questions to measure university lecturers' competence to show effectively online. All

questions were chosen based on a survey of literature detailing the problems and limitations of electronic teaching during the current COVID-19 epidemic.

The second component of this research study involved a series of online separate interviews with study contributors to determine their perspectives on the benefits and drawbacks of online teaching. The talks were held using Microsoft Teams. The third section dealt with the analysis of the results. As needed, the results were summarized using descriptive statistics.

IV. Results

The findings of this study done in Pakistan's Khyber Pakhtunkhwa province are described in this paper. Educators' perceptions of online teaching and learning, problems they experienced, and Pakistan's higher education preparation level of using E-learning and teaching were described throughout the time of the current COVID-19 pandemic at the Harbin Normal University of Harbin.

In this survey, 25 university educators aged between 25 and 65 with 3 to 35 years of teaching experience participated; 75% of respondents had a doctorate and master's degree in science, and 25% were undergraduate, graduate, Engineering, and Humanitarian Sciences. Table 1 contains information about the participants' backgrounds.

Table 1. Summarized participants' characteristic

		Participants	Percentage
Age	25-35	20	23%
	36-45	30	35%
	46-55	22	25%
	56-65	25	17%
Education	Master degree	15	17%
	Sciences`	50	58%
	Candidate	22	25%
	Doctor degree in sciences		
Teaching Experience	3-10	15	17%
	11-20	32	29%
	21-30	25	37%
	31-40	15	17%
Gender	Male	37	24%
	Female	50	58%

The ability to use computers and the capacity to use information communication technologies (ICT) in the educational method properly define the preparedness of educators for online teaching and learning. A self-assessment assignment was included in the questionnaire, in which educators were asked to rate their ability to use computers on a 5-point scale ranging "poor from 1 to outstanding 5" (table 2.).

Table 2. The computer literacy level of educators

	Skillfulness	Number of Universities	Mean	Standard deviation
1	Capability to using search engines	25	4.40	0.80
2	Capability of software installation	25	4.40	0.90
3	Access to the internet at home	25	4.90	0.80
4	Capability to the internet for academic research	25	4.30	0.80
5	MS Office performance	25	4.70	0.60
6	PowerPoint performance	25	4.70	0.70

7	ability to communicate and share info through a network of people	25	4.70	0.90
8	working knowledge of LMS	25	4.20	1.10

The participants gave their computer literacy capabilities a high rating, especially their capability to use search engines (mean = 4.4), MS office operation (mean = 4.7), and capacity to interact and exchange info with others through a network (mean = 4.3). In terms of knowledge about Learning Management Systems (LMS) (mean = 4.2), the majority of responders have only worked with the Learning Management Systems (LMS) model. The Cronbach's Alpha was 0.79, implying that the questions were trustworthy.

Participants in the survey were asked to reply to many questions to assess educators' preparedness to use electronic education during the current COVID-19 epidemic, as well as their views about it (Table 3). The Likert scale was employed, with 1 being entirely disagreed and 5 fully agreeing.

Table 3. Educator`s preparedness to implement electronic learning

	Questions	Number of Universities	Mean	Standard deviation
1	During the Covid-19 pandemic, I have adequate knowledge and expertise to apply e-teaching	25	3.80	0.80
2	I have the experieusing use electronic learning	25	3.90	1.00
3	I select traditional learning instant electronic learning	25	4.40	0.90
4	I have no knowledge about computer use for online education	25	2.70	1.08
5	Online learning is not relaxing for me	25	4.40	0.90
6	My routine is suitable for electronic learning	25	3.90	0.90
7	Online teaching and learning are time-wasting	25	2.00	1.23
8	Teaching online is very different From traditional teaching.	25	4.80	0.60
9	I find it difficult to create instructional materials for an electronic environment.	25	4.20	1.00
10	I have no enough skills to communicate with my student online teaching	25	3.60	1.24
11	The technical support provided by university for online education	25	4.40	0.60

12	The platforms of the University have chosen To Facilitate online learning are simple for use.	25	3.60	1.14
13	University's platforms of the Features and functionalities that I require.	25	3.40	1.17
14	The directions on how to organize a digital educational process are Sufficient and comprehensible.	25	3.90	0.90
15	I believe there is a deficiency in computer literacy.	25	3.70	1.11
16	I am aware of my lack of technical skills.	25	3.70	1.11
17	It takes a long time to create electronically instructional content	25	4.70	0.30
18	It's tough to switch to a new teaching Approach In the issue of days.	25	4.70	0.50
19	I believe that in a digital educational atmosphere, I should really be taught how to operate.	25	4.00	1.14
20	During the coronavirus outbreak, There is more profitable than disadvantages To Be e-teaching and learning	25	2.30	1.27

Teaching online differs substantially from traditional teaching, according to virtually all of the respondents (mean = 4.8), and creating electronic educational content takes a long time (mean = 4.8). During the COVID-19 epidemic, the participants felt confident in their ability to apply electronic teaching learning (mean = 3.8). The majority of them have prior awareness of online learning (mean = 4.00). Most of the respondents stated a desire to learn how to use digital educational resources setting (Mean = 4.00). The Cronbach's Alpha was 0.95, indicating that this conclusion was realizable.

According to Almazova, Rubtsova et al., “integration of online learning in the educational procedure necessitates not only teaching techniques, but also pedagogic modifications for learners who are habitual to the physical education system. One of the challenges to the successful implementation of digital learning is a lack of learners' abilities for concentrated use of information technology (IT) in teaching-learning procedure”. As a result, research participants were asked about the performance of their students in electronic educational environs on a Likert scale was employed, with “1” being entirely disconcur and “5” being fully concurred.

Table 4. The performance of learners online throughout the time of the coronavirus pandemic.

Questions	No. of University	Mean	Standard Deviation
1 During COVID-19, my students Have enough knowledge to using of online learning.	25	3.90	1.16
2 My students can accomplish their assignments using the E-learning platforms they've chosen.	25	4.50	0.61
3 The students come to internet educational procedure; my students have more technical issues.	25	4.40	1.05

4	Some students are not motivated to study online.	25	4.20	0.71
5	In Webinars and online discussions, my pupils are interested.	25	3.30	0.91
6	My students often miss deadlines.	25	4.40	0.61
7	My students have experienced psychological Discomfort while learning online.	25	3.10	0.91
8	My students have no Internet connection to participate in Online learning.	25	2.40	0.51
9	I trust that my online discussion with students is ineffective.	25	2.50	1.24

Participants emphasized the following points while describing learners' online presentations during the COVID-19 pandemic: Learners have enough knowledge and Information technology abilities to use online learning effectually (mean = 3.9), More students have miss deadlines (mean = 4.4) and are unable to find the motivation to study online (mean = 4.2). The Cronbach's, Alpha was 0.90, indicating that the question is trustworthy.

The survey's last section dealt with identifying the concerns, obstacles, and general perspectives of educators about online education during the coronavirus epidemic. In Microsoft Teams, during individual online interviews, the participants answered open-ended questions. In summarizing their responses, educators were engaged and driven to keep students interested in learning and to modify the traditional curriculum so that teaching became more than a formality, but a creative procedure of knowledge acquisition. Educators are drawn to online learning for two reasons: the mental challenge and the self-motivation to master the technology.

Simultaneously, this study revealed the members are practically united in their belief that the traditional teaching competencies and skills are insufficient to ensure the achievement of the online educational procedure. One of the responders, for example, when discussing the advantages of online learning, remarked, "The role of the educator is changing. A facilitator develops from a teacher who may post study materials, multimedia presentations, set timelines, perform multiple different activities, and communicate with participants at any time using multiple online portals." In terms of disadvantages,

"There is a strong need for collaborative initiatives for learners in humanitarian fields and foreign languages—pair work, small group conversations, and so on," one of the respondents said. Given that we offer online classes using Moodle, Zoom, and Microsoft Teams, it appears nearly difficult to coordinate this face-to-face effective collaboration." Another viewpoint is as follows to teach online effectively, one must be prepared to use a wide range of online education programs to arrange a productive lesson, including web apps, LMS, and so on." We have a lot to learn, which will take a lot of time and work." Respondents cited the following difficulties while describing the benefits, drawbacks, and impressions of online education (Table 5).

Table 5. The benefit and disadvantages of online schooling

Benefit	Disadvantages
Flexibility in the schooling process (71%)	Being unable to use the range of educational methods available in an offline class. (78%)
A chance to repurpose previously recorded teaching material (videos, audio and so on.) (47%)	Very little communication with learners (68%)
Developing professionally (31%)	Online/video programs are not a viable substitute for traditional classroom instruction (70%)
Formats that are interactive (33%)	
A chance to try new technology (21%)	

However, as the survey's findings revealed, when it came to adopting online education, the majority of respondents encountered several challenges that were a substantial impediment to a successful digital learning process.

- A lack of knowledge about how to use computers;
- Insufficient time for self-education, electronic educational resources, and other activities. Educators are stressed of the need for devoting a large amount of their efforts to creating online instructional content. It was discovered that creating traditional instructional materials takes twice as long. The instructors also brought up the following points:
- Inability to plan constructive online interactions with learners;

- Inability to educate using active/collaborative approaches;
- Lack of flexibility due to conservatism.

The goal of this study was to find out how prepared university educators were to deploy electronic teaching learning during the COVID-19 epidemic in Pakistan. The following important factors should be investigated in light of the above.

V. Discussion

The goal of this study was to look at how prepared university educators were to deploy digital teaching and learning during the coronavirus epidemic in Pakistan, and now even the problems they experienced. Keeping the above in account, the following critical considerations should be made. Despite having extensive computer proficiency and access to university information Technology resources, most educators confront various obstacles that are relevant to the research issue, according to survey replies. Appropriate Computer skills, Concerns were raised about the university's electronics, environs and support, university faculty preparation, and learners' readiness for web-based learning. These findings are constant with an earlier study that has recognized a variety of online education roadblocks. According to them (Gregory and lodge 2015). Carrying your advice, learning analytics and adaptive learning, increased and virtual reality, and robots are the following hurdles. (Alharbi) in his research, distinguished obstacles at the educator and institutional levels. (Alharbi) Digital Resources, time, and technical assistance, expertise and talents in technology-based education, institutional challenges, staff attitudes and views, and topic principles were all mentioned as impediments to effective online teaching adoption in their study. In terms of computer literacy barriers, educators over 55 raised several concerns, including the need for more teaching and additional IT assistance. This research found that demographic parameters such as faculty members' age, gender, discipline, teaching experience, and designation had no significant impact on their online learning readiness score (Lakshmi, 2021). This result supports the notion that faculty members are generally prepared to teach online courses.

Educational staff preparation and learners' preparation for digital education during the COVID-19 pandemic were critical obstacles faced by educators at Harbin Normal University, according to the research findings. The majority of respondents believed that an educator's work in electronic educational environments is considerably dissimilar to traditional ways of teaching, with 88 percent agreeing.

Educators agreed on a high level of content standard and collaborative environments, while learners evaluated access to online content material as the adequate, agreed. Educators also required active engagement and collaborative learning using online learning tools from students. Educators should consider a variety of learning techniques and a combination of a wider scale of media, such as online video and audio lectures, while students use materials for blended education (Encarnacion, Galang, et al. 2021) Both educators and students asked that evaluation score for student online works be made available, also a system, such as "Turnitin" Software, that checks the validity of students' course projects, exams, and assignments. Finally, educators recommended that more seminars or training be held (Al-Aghbari, Osman, et al. 2021) Learners requested orientation and special seminars, as well as a timeline for the Learn Online Portal, in instructional to keep them informed about new E-Learning software programs.

That is not enough to have good computer literacy abilities and a thorough comprehension of one's topic. Being able to succinctly and rapidly explain things online. The capacity to develop digital educational coursework; execution of remote and digital education, and organization of effective online contact and cooperation among an educator, a student, and management system should all be mastered through online pedagogy. The relevance of social interactions and online conversations in the development of online pedagogic skills is emphasized (Mc Carron, ole sofa at al. 2021). "The evident requirement for higher education online learning competence in the COVID-19 pandemic issue should be a reminder that universities must have the plan to develop this skill".

As a result, the educator's obligations for online instruction are as follows.

- Creating a conducive environment for the learnersto develop e-learning abilities.
- Giving pupils methodological assistance while using electronic instructional materials.
- Learners' critical and creative thinking abilities, as well as information processing skills, are developed.
- Realization of learners' education requirements as well as abilities to usethecurrent technology to improve the learning process.
- Improving learners' long-term drive to learn.

Respondents remarked that because current "digital natives" have a high level of technological literacy, for them that is not challenging to grasp the technical aspects of online learning quickly. According to educators' comments, most learners, lack organizational, and planning abilities and struggle with their regulation (Gonda, Pavlovičová, et al. 2021). Thus, during the COVID-19 epidemic in Pakistan, a well-organized transition curriculum to an online format would be achievable if the following prerequisites are met:

- Support for overcoming psychological hurdles while using online instructional activities;

- Created a technological foundation that included both hardware and software
- Organizational and methodological assistance, including suggestions for executing instructional tasks in an electronic educational setting.
- Educators' Professional development programs;
- Systematic assistance from the institution concentrating on establishing a university educator's academic burden when working online.

This is to the preceding (Aburizaizah 2021) Staff professional development programs are quite important, according to the findings.

VI. Conclusions

This paper demonstrated that successful higher education teaching in Pakistan and throughout the world is in jeopardy, necessitating a deliberate rise in the level of methodological and technological preparation of higher education educators for electronic learning and teaching.

The higher education system of Pakistan was confronted with significant issues that need a psychological, technical, and the methodological reorganization of traditional teaching. The electronic educational environment and structure of the educational process entail new instructional activities focused on cooperation among educators and learners, as well as effective use of current technology.

As a result, university teachers must be prepared to start organizing and conducting students' learning sessions on scientific and educational research activities wirelessly using LMS, Technological tools, Zoom, and other similar tools during the COVID-19 pandemic; to adopt and assess learners' schooling programs online; and to performing online meetings, online training, and other similar activities during the COVID-19 pandemic.

The results showed that the instructor's transactional presence was associated with learners' perseverance and satisfaction. Our findings show that perceived confluence and fit are more important than the number or quantity of these aspects in determining pleasure. We discovered that students' happiness with online courses reflects their knowledge of how the information is delivered, what it entails, and how students interact with teachers and peers, all of which are their goals for taking the class. In the end, these learner-driven aspects are intertwined with their interactions with the faculty and the course itself.

Potential issues in converting teaching and learning to an online format are linked to educational as well as university management obstacles. The most crucial, according to the present study's findings, was instructors and learners' preparedness to enforce electronic education. There is a lot of interrogation to be needed to answer promptly. In the framework of the COVID-19 epidemic, online learning has become a tool for preserving the lives and health of all educational participants while also avoiding squandering time. Only time will tell if the education system of is ready for this rapid internet shift. This research is one of the initial steps in analyzing the scenario and determining potential answers to the educator's learning issues.

The current study contains various flaws, the most significant of which is the study's participants. Educators were the only ones who took part. We want to emphasize the importance of understanding the issues that educators face while implementing online teaching and learning in sequence to be prepared to deal with the situation. More study into learners' perspectives of online learning is also needed.

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