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Student Experiences of ICTs in Online Learning during COVID-19 in Pakistan: Challenges and Prospects

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ABSTRACT

Outbreak of the COVID-19 pandemic altered the traditional model of face-to-face teaching and learning into remote learning through Information and Communication Technologies (ICTs). This paper investigates the experiences of students using these ICTs for online learning. Interviews were conducted with them to understand prospects and challenges of using ICTs when it comes to remote learning. The findings illustrated that most students were satisfied with the online mode as living in a technology-oriented era adoption is relatively easy. However, electricity outages and connectivity problems were faced by some of the students belonging to underprivileged and remote areas. The study concluded that the COVID-19 pandemic accelerated the use of ICTs on the one hand, but on the other certain prospects are not abundantly realistic and pervasive for all. Policy dialogue is recommended to adopt and practice blended technology-based learning methodologies at all levels of education to meet the current challenges of the education system.

Keywords: Online Education, Remote Education, ICTs, Education, COVID-19, Student Learning.

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1. INTRODUCTION

COVID-19 forced the closure of all kinds of physical activities in every sector of life and pushed educational institutions to shift to online platforms. Online learning comprises use of the Internet and other important technologies to develop online learning materials for education (Fry 2001). Synchronous and asynchronous learning techniques are used for effective and efficient online learning which requires instructors and institutions to understand their benefits and precincts (Hrastinski 2008). Advancement in technology has transformed the conventional mode of face-to-face teaching in classroom settings with the online blended learning methods. In this regard, technology is playing a significant role in introducing multifaceted ways of online blended learning. Transversely, over the past 20 years, the use of ICT has reformed practices and procedures of all forms of teaching and education. Even though within education, ICT was inaugurated, its impact has not been as extensive as in other fields (Oliver 2002).

Means et al. (2010) introduced blended classrooms comprising web-based teaching to extend easy access to the wide range of learning activities. Such classes provide a variety of learning modes and methodologies for enhancing teacher and learners' knowledge and skills. Empirical evidence supports blended learning techniques as they accelerate learners' ability to learn collaboratively, think imaginatively, study independently and modify their own learning capabilities to fulfil their individual needs (Cleveland et al., 2017). To avoid discontinuation of education during the ongoing pandemic, many institutions globally adopted technology-led learning techniques to facilitate learning from home (Mahaye 2020).

This paper seeks to examine the prospects and challenges of using ICTs for remote learning in higher education during COVID-19 pandemic. It asks the following questions:

- What are the students' experiences about the factors that affect the successful usage of ICTs in online education during the COVID-19 pandemic?
- What are the challenges that students faced in using ICTs?
- What are the policy implications for enhancing better usage of ICTs for remote learning during the pandemic?

The second section of the paper discusses related studies on online education and usage of ICTs, prospects, and challenges of e-learning worldwide. This is followed by sections on the theoretical background and research methodology that explain the data collection process and analysis techniques. The fifth section discusses the findings followed by policy recommendations and conclusion.

2. LITERATURE REVIEW

Online education, with the help of ICTs and digital devices, is envisioned to support remote learning (Clark and Mayer 2016). It provides ease of access from anywhere at any time, saves commuting cost, and provides flexible ways of learning, etc. (Nagrale 2013; Brown 2017; Bijeesh 2017). Most public and private institutions across the globe went into lockdown over various time periods due to the COVID-19 pandemic during 2019 to date. Among these, the education sector suffered to a large extent. Hence, educationists adopted online learning platforms to continue education in one way or the other. In the beginning, both teachers and students found it difficult to move away from the traditional way of teaching and learning towards remote learning, but gradually they became accustomed to the system as per the need of the time. Research conducted in Greece studied students' contentment with the new system and concluded that students found it interesting, adequate, modern, and convenient despite real time face-to-face social interaction with the teachers and their fellows.

The shift from traditional to remote learning not only enhances learners' capability but institutions also progress in developing and adopting various modes of digital infrastructure for improving distance learning in higher education (Kedraka and Kaltsidis 2020; Almaiah et al., 2020). Online learning has been the appropriate mode during the worldwide health emergency. It also enabled individual to keep in touch, even if remotely, with colleagues, friends, classmates and teachers and to continue education (Ismaili 2021).

Literature on the subject (Unger and Meiran 2020; Kedraka and Kaltsidis 2020; Toquero 2020) shows the effectiveness of online education during COVID-19. Despite facing numerous obstacles such as poor connectivity, slow-speed internet, power failures, cost, etc., remote learning was a success for students as well as for institutions. Various ICT tools and online networks, such as WhatsApp, YouTube, Facebook, Zoom, Google, etc., are being utilised for operational teaching and learning.

On the other hand, other studies, such as by Unger and Meiran (2020) highlighted anxiety among students due lack of preparedness for the immediate shift to the online learning environment. Similarly, Ferri et al. (2020) mentioned technological, pedagogical, and social challenges of distance education due to pandemic emergencies. The technological challenges include poor connectivity, lack of electronic devices, and lack of access to online resources. The pedagogical challenges include lack of digital skills, and lack of motivation among teachers and students. Whereas social challenges were reflected through lack of human interaction, lack of physical spaces at home to receive lessons, and lack of parental/familial support. Despite such constraints, institutions have implemented online learning as a possible solution to meet the mandate of continuous education.

Remote learning is defined as 'learning space' being extended with the help of a computer and communication technologies replacing time and physical boundaries of traditional teaching and learning methods (Khalifa and Kwok 1999). Ali (2020) elaborated the competencies of universities worldwide that are moving towards online learning. The study revealed that staff readiness, confidence, and availability of technological resources motivated students to play a significant role in e-learning.

The use of various technological gadgets has also been remarkable in the pandemic for to ensure that social distancing guidelines were followed, while at the same time, connecting with each other remotely. A survey by Aristovnik et al. (2020) conducted with 30,383 students from 62 countries elaborated the outstanding institutional performances and students' satisfaction with remote learning for online education. Besides the progression of online learning, students with deficiencies in technical skills showed frustration and worry about their future careers. Work-life balance, newly inducted students, and financial problems were also encountered by the students with low socioeconomic backgrounds.

3. THEORETICAL BACKGROUND

A sociological theoretical insight on the subject matter provided a wide horizon to link the practices of online education during COVID-19. The social system, according to Talcott Parson's Adaptation, Goal Attainment, Integration, and Latency (AGIL) model, is based on a structure that is flexible in adoption of new changes and integrates into the existing system for achieving goals to bring social change (Parson 1951; Barber 1994).

Pakistan, like other countries, also adjusted its system and adopted new ways for the functioning of educational institutes and implementing new policies for the continuation of educational activities. New modes of education were adopted in the form of online blended learning. Apart from bringing change in the educational structure, the pandemic also brought a shift in power as well as in roles and responsibilities. According to Pierre Bourdieu's analysis of capital and practice of habitus, the relationship and power dynamics among individuals, society, and institutions had been modified (Ihlen 2005). Bourdieu's 'Theory of Practice' reflected on how capital and habitus articulated in the field (Bourdieu 2007) which can be related to the current practices of using ICTs in online teaching that is increasingly becoming habitus in the field of education. The social and economic capital is being used to promote such practices in the current pandemic.

4. METHODOLOGY

By using a qualitative research design following the inductive approach, interviews were conducted with students to gather their experiences concerning the prospects and challenges of ICTs in remote learning. Thomas (2003) highlighted that the use of the

inductive approach in qualitative research design is used to imitate recurrently stated patterns of information. It is conveniently used to analyse qualitative data having diverse nature of responses and in-depth information. Furthermore, the qualitative research design is widely used by educational researchers to expand the quality of empirical evidence (Liu 2016).

The information was collected through online interviews with 15 students taking online classes at Fatima Jinnah Women University, Rawalpindi, and belonged to various regions of Pakistan, including Azad Jammu and Kashmir, Gilgit, and parts of Khyber Pakhtunkhwa, amongst others. A targeted sample size was employed by using qualitative sampling technique of saturation. Fusch and Ness (2015) described saturation as 'data reached to the point where there is enough information gathered to replicate the study and new information has been obtained.' Moreover, a convenient sampling technique was used to select the students and after taking their consent and willingness to be a part of the study, online interviews were conducted using Google Meet. Both English and Urdu languages were used to get the required information. By utilising the thematic analysis technique, the collected information was descriptively explained and supported by literature and empirical findings. Thematic analysis was performed at two steps: first, the initial coding was accomplished, which involved the generation of numerous category codes without limiting the number of codes (Charmaz 2006). The second stage involved focused coding where the researcher eliminates, combines, or subdivides coding categories identified in the first step. Recurring ideas and wider themes were then focused which emerged as the main themes of the analysis.

5. RESULTS AND DISCUSSION

Online teaching and learning experiences of the students from the target university are thematically discussed below:

5.1. Integration of Technology and Blended Course Content

Technology is changing rapidly due to which traditional methods of teaching are getting altered. A variety of blended learning accomplishments depends on both synchronous (e.g., web conferencing and virtual worlds) and asynchronous (e.g., wikis and social bookmarking) tools. The perspective of technologies in blended learning is two-way learning through web conferencing or wiki-based activities, to profound learning through blogs or digital storytelling projects, etc. (Innes 2018). In this regard, one of the respondents shared that:

> *The efforts of the department are clearly seen. Online classes are a great source of learning and communicating. The recording of the classes makes our lectures easier to understand as we can go through the lectures again and again if we are*

> *not able to understand any point. Giving recorded lectures on YouTube was the perfect solution as its low bandwidth is accessible in remote areas.*

A majority of the students were satisfied with the online classes due to the easy access of real-time lectures on Google Meet and availability of recorded lectures. Google Classrooms was perceived as a better way as it was easy to access for the students and teachers. Course material, relevant data, and lectures were available at any time.

According to Means et al. (2010), online learning is associated with the broader organisation of distance learning, which integrates earlier technologies such as online communication courses, educational television, and videoconferencing. Another respondent stated:

> *My experience regarding online classes is quite good. We can easily communicate and discuss the lecture's topic or any other difficulty with teachers through Google Classroom and Google Meet. All data and recorded lectures are easily available for us. Teachers are making a great effort to equip the class with the best of blended learning by incorporating various modes of technology. Online classes are the best way to study. The lecture is also available for us anytime and we can easily access it anywhere. The best thing about online learning is that we can learn in a relaxed manner.*

The findings of the data indicated that technology is a powerful tool for blended learning and providing an opportunity to take online classes. Google Meet is easily accessible, and all the material teachers provided helped the students to learn innovatively and creatively and is easily accessible. The students were happy that despite the closure of the university, they were still connected and learning because of technology and dedicated faculty. These findings are supported by Mahaye (2020) who illustrates the best use of blended learning techniques which has transformed the traditional mode of teaching and learning into a digital world.

One of the students shared that online teaching was good but social interaction with teachers and students had reduced. One student, who was infected with Coronavirus, was still able to take online classes as she could access live lectures and Google Classroom effortlessly from home. One visually challenged student also showed her satisfaction with online teaching as she could listen to online lectures on YouTube. These findings are supported by Adedoyin and Soykan (2020) who also gives importance to instructional technology adopted for teaching and research activities in educational institutions during the pandemic.

The findings depicted that with the help of various ICTs, availability of electricity, Internet, mobile phones, and laptops, institutions remained connected with each other.

The significance of digital learning increased during the pandemic since no other means of education were pragmatic.

5.2. Competence of Teachers

In the present epoch of globalisation and technology, most teachers have a certain level of proficiency for using various technical equipment, software, and the Internet. Further, trainings on enhancing their technical skills were also provided which enabled them to efficiently utilise online media. Redmond (2011) also highlighted the significant role educational institutions were playing for the implementation of online education by providing access to the Internet in remote areas.

One of the respondents stated:

> *Online classes are going pretty well. Our teachers are really cooperative, and I easily understand the lectures without disturbance. Although the online system was completely new for us, however, due to competent teachers, we were able to overcome our challenges.*

Another respondent added:

> *Professors are very cooperative and trying their best to fulfil our needs. I feel totally satisfied with these online teaching techniques. I don't think we are facing any hardships. We will try to do our best not to disappoint our professors. Conventional teaching is far better for our growth and for social practices, etc., but as we have no other option in this situation, so we have to get used to it.*

Another respondent shared:

> *I have had a great experience in attending online classes. I can easily understand each and everything in the lecture. Our instructors are doing and giving their best to us. Every lecture is very well explained, and I don't find any difficulty while learning online. I can easily access Google Classroom, Google Meet, and such apps and I'm totally satisfied with this system. I'm enjoying my online classes and excited to continue the remaining semester this way. All the materials, videos are very helpful. I have learned a lot.*

Furthermore, to appreciate the teachers' competence of transforming from the traditional way of learning into blended, one of the respondents stated:

> *I personally feel proud to say that our university and staff arranged such a system from day one for continuity of our classes. The online system of classes is an opportunity for students' future professional lives and skills development. In these challenging times, the online education system introduced by our university*

> *is admirable. I am satisfied with how teachers are putting in efforts to make it easy for us.*

The findings illustrate that teacher competence toward adoption of blending learning techniques to conduct online classes was successful and going very well as students were satisfied by this method of learning. Recorded lectures made learning easier for them if they were not able to attend online classes due to any issue or weak internet connectivity.

Moreover, to monitor teachers' competence, weekly meetings with the faculty members were conducted to get feedback on online teaching and student matters. All classes were monitored by competent authorities for 5-10 minutes at the beginning and end of the class time. As an academic institution, faculty members were encouraged to utilise their existing expertise as teachers to support and encourage learners to make the best of the situation.

5.3. Learner-Centred Teaching Methodology

Another significant aspect in the accomplishment of blending learning is the practice of learner-centred teaching methodologies. It comprises of provision of technical services such as technology troubleshooting, material access, and learning to communicate effectively online, as well as all the other usual support for understanding course content. In this regard, the study found many successful stories of students belonging to remote areas who could connect due to the kind of support extended by the teachers and institution. One of the respondents said that:

> *It is easy for me to access the Google Classroom and Google Meet. I can have access to all the lectures and related material provided by the instructors. My experience is pretty good. I am comfortable with this system managed by our department... Teachers are putting in their best efforts to make us understand the lectures.*

Another respondent noted:

> *I am completely satisfied with online classes which are totally student-centred. Every lecture is presented very well, and all of the lectures are also available on Google Classroom which is one of the most appreciated aspects of online teaching. And the best feature of online classes is the option of a mute microphone because it helps to resolve the noise and allows me to listen to my lectures more clearly.*

The above findings depict that the online learning platform was learner-centred and was suitable method for continued education during the pandemic.

Besides teaching and learning, students were also guided how to maintain their health by taking proper diet and precautionary measures against COVID-19. They were regularly counselled to consult their doctors properly and how to avoid delays and disruptions in their educational activities. The findings are also supported by Brooks (2014) who emphasised good health of students leading to better learning competencies and performance. UNESCO (n.d.) also emphasised that virtual education is primarily reliant on learners' mental and physical health as well as a healthy learning environment.

5.4. Challenges faced by Students

Online education also created social inequality among the students. Sources of digital learning are not evenly distributed for everyone in Pakistan. Poor connectivity and electricity shortfall were the major challenges for students and teachers belonging to remote areas. Cultural sensitivity and mobility constraints, particularly for females, accelerated their problems of outreach to ICT resources. One of the respondents mentioned:

> *Online classes are too difficult for students in Gilgit because here we need to work hard to get an internet connection. Besides, we have electricity issues too and then the connectivity of the internet is even worse. We have to go far from home because there are only limited spots where the internet is connected to our devices due to which online classes were a difficult experience for us.*

Furthermore, one of the respondents mentioned:

> *Living in the furthest part of Gilgit-Baltistan I was unable to take online classes. I didn't have WhatsApp access. Thus, for the sake of online classes, I left my home and moved to my sister's home. Here, the signals are quite better but again I have to go outside the home to take classes. It took almost an hour to reach the signal area. I used to take classes by holding an umbrella because it is too hot outside after 11:00 a.m. Moreover, to understand the lectures I used to listen to recorded lectures available on Google Classroom and YouTube. But for that, I have to wake up early in the morning at 4:00 a.m. to download the lectures from Google Classroom and YouTube as in the daytime till midnight, internet signals are too weak to download any material or to take an online class in real-time.*

Several students from Gilgit-Baltistan shared their struggle to access the internet by traveling one to two hours to the place where the connection was better. They were motivated to do this due to the efforts of faculty members who facilitated them in one way and another. All the above-mentioned struggles by the students were also appreciated by faculty members and the institution.

Despite all the challenges, faculty members were satisfied with online teaching and doing their best to facilitate students to utilise their time constructively. Faculty and students actively and in a timely manner responded to all WhatsApp groups created by faculty members and the department.

Bubb and Jones (2020) supported the argument mentioned above by highlighting quick adaptation of technology by students, teachers, and parents during the COVID-19 pandemic. Grounded on the experiences of remote learning imposed by the lockdown, teachers and students converted the crisis into an opportunity for more creative and innovative learning practices.

6. POLICY RECOMMENDATIONS AND CONCLUSION

The COVID-19 pandemic has altered traditional teaching methods and forced academic institutions to adopt e-learning. However, because of the problems of Internet connectivity and availability, students faced serious problems in underserved and unserved areas in parts of Pakistan, and they could not benefit from online learning. It is, therefore, essential that equitable and universal access to the Internet is ensured. Blended technology has emerged as a good solution to address the needs of educational institutions. Therefore, the adoption of blended learning techniques should be facilitated to meet the challenges of education in such exigencies. To meet the challenges of current and future educational needs, such adoption will not only enable academia to continue educational activities, but it would also reduce costs, increase flexibility and enhance student access to multiple sources of online learning.

The findings of the study demonstrated that in online teaching, using various technologies is the best solution during the current pandemic and lockdown where physical access to educational institutions has been restricted. The situation was especially challenging for students belonging to Gilgit-Baltistan due to which they missed real-time online interactions and felt deficient in prolific learning. Despite the challenges encountered by some of the participants, they appreciated institutional efforts to establish an online teaching system to avoid delays in the completion of their degrees. Students found their online teaching experiences as satisfactory and easy to comprehend.

Access to online reading material, live interaction with the instructors and easy communication with the instructors had a positive impact on their learning outcomes. From time to time, course progress was evaluated through student feedback as well as monitoring by the head of the departments to ensure faculty members were managing the course according to the outline in real time.

It is concluded that during the current COVID-19 pandemic, online teaching is appropriate for managing higher education classes. However, low-cost internet services should be provided by telecom companies across Pakistan. Learning institutions should

incorporate a technology-oriented system of teaching with easy access for the faculty and students. New modes of ICTs must be in place to enhance online learning competencies of both faculty members as well as students. This can lead to improving institutional performance and progression for achieving quality-based teaching and learning practices in higher education institutions.

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