A Novel Experience of Online Education in Public Sector Universities: Challenges and Lessons Learnt from Pakistan

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Abstract

Online education in public sector universities in Pakistan is a new experience amid COVID-19. This paper explores the experiences of students and teachers – who faced pandemic for the first time in their lives and experienced online education through qualitative research approach. It is explored that neither students nor teachers were ready for online education as it had never been part of the education system. The pandemic posed many challenges to everyone who was involved in education but mainly students and teachers. Students and teachers reluctance and preparedness is discussed throughout the article. It is found that with the assistance and training can help students and teachers to overcome anxiety, stress and depression due to COVID-19 and online education. However, a clear vision, complete planning and sustainable solutions needs to be developed for an equitable online education provision.

Keywords: COVID-19, online education, students reluctance, teachers readiness, equitable online education

Introduction

A newly identified coronavirus, SARS-CoV-2, has caused a worldwide pandemic of respiratory illness, called COVID-19.COVID-19 symptoms include cough, fever or chills, shortness of breath or difficulty breathing, muscle or body aches, sore throat, new loss of taste or smell, diarrhea, headache, fatigue, nausea or vomiting and congestion or runny nose. COVID-19 can be severe, and many cases have caused death. There is no coronavirus vaccine yet. Prevention involves frequent hand-washing, coughing into the bend of your elbow, staying home when you are sick and wearing a cloth face covering if you cannot practice physical distancing (Sauer, 2020) .

In Pakistan, the first case of COVID-19 appeared on 26th February 2020. The situation escalated quickly and in order to effectively contain COVID-19, on 23rd March 2020, complete lockdown was imposed in the country. This complete lock down was converted into 'smart lockdown' on 9th May, 2020. However, all the education institutions as well as big markets and all public places were directed to remain closed (Kaleem, 2020).

In this pandemic situation, education became one of the most important concerns for concerned authorities. The current education minister, Mr. Shafqat Mehmood announced the closure of educational institutions and gave different solutions such as distance learning, starting a TV channel and online education for the continuation of the learning and education. However, the readiness of educational institutions and students were not considered when such announcements were made and no extra budget was allocated and released for the educational activities.

Online education was not the practice of many government educational institutions including schools, colleges, and universities in Pakistan before COVID-19, unlike the rest of the world (Muller et al., 2020; Martin, Stamper & Flowers 2020). However, it is a fact that the novel Coronavirus has changed the lives of billions. It is reported that in the pandemic of COVID-19, almost 1.5 billion children are affected across the globe due to school closure decisions taken by the governments to protect children from this deadly virus (UNICEF, 2020). School closures brought many challenges for everyone including governments, educationists

and educational institutions, physical, and emotional health and overall wellbeing of individuals, slow economic activities among other things. All these factors affected the lives of individuals in different ways due to their different demographics such as education, health conditions, economic status, age, gender, accessibility to the latest technologies including electronic gadgets. Countries like Pakistan, where educational sector remained under budgeted and where technological use for education was not a practice, online education become a challenging situation. There were a few private educational institutions who had their Learning Management System (LMS) and they were using online education as a part of face-to-face education. In COVID-19, which put Pakistani educational institutions in a position to start online education for which no one was ready including administration, teachers/faculty and students and their parents. In this paper, we aim to explore the experience of the implementation of online education at the university level and its effects on the daily lives of students and teachers. At the time of writing this research, and to our best knowledge, a limited research is done on online education experiences of students and teachers in higher education in Pakistan amid COVID-19. Sharing of experiences and lessons learnt will help higher education institutions to develop strategies for the upcoming semesters, if COVID-19 situation does not improve, and if universities have to opt for hybrid mode of education.

Methodology

This study is based on personal experiences of faculty members and students of two public sector universities in Rawalpindi and Islamabad cities. The choice of public sector universities is purposely done as majority of the public sector universities in Pakistan do not have a proper Campus Management System (CMS) that incorporates Learning Management System (LMS) of streaming live lectures to the students. The COVID-19 lockdown that happened in March 2020 and subsequent government emphasis on online teaching in universities compelled the public sector universities to adopt and develop their own LMS systems without any budget or support from the government. Thus, universities had to adopt free open source softwares such as Google Classroom, Moodle, Loom, Zoom etc. for online teaching. Thus, in this backdrop, the study selected two public sector universities who had adopted free online teaching systems especially Google Classroom with Google Meet option and Zoom (free version with 40 minutes meeting time).

Sample

The selected universities had started their online teaching in the months of April and May, 2020. One of the university was quick to adopt online teaching and started its classes in April, while the other university started its classes in May, 2020. Faculty of both the universities were reluctant to offer online teaching as they did not had any previous experience of online mode nor were they comfortable in virtual mode of teaching. Thus, a sample of ten faculty members belonging to two cadres – lecturer and assistant professor of different teaching departments were conveniently selected for the study. Similarly, students were also found reluctant to engage in online learning processes. Thus, a sample of 20 students were selected. The student sample consisted of equal genders that is 10 males and 10 female students. These students belonged to different areas especially from Khyber Pakhtunkhawa province, Gilgit Baltistan and Azad Kashmir. Students from these areas were purposely selected as these areas neither have robust telecom structure nor some of the areas supported 3G access for internet connection vital for online teaching and streaming of live lectures.

Instrument

Semi-structured interviews were conducted from the selected participants through WhatsApp and telephone. Some of the interviews were completed through whatsapp chat, which formed the transcription bases. Before proceeding with the interviews, respondents consent was taken for recording of the call through chat. Once verbal consent was taken (as all key informants were adults), calls were made and recording was done of the interview. During the call, researchers again took permission from the respondents for recording of the calls. Confidentiality was ensured by the researchers and respondents were informed that their views would be used solely for research purposes and their names and profiles would not be shared and kept confidential.

For the analysis purposes, line by line coding is done of transcriptions (of semi-structured interviews) and themes were generated. The common themes are discussed in the next section of this article.

To gather the data from teachers who were involved in online teaching, this study took their personal experiences where they took part in preparation and implementation of online education. They have attended numerous meetings, endless communication with students and prepared online packs, and many policies were developed for the universities to get prepared for online education.

Results/Themes

The closure of educational institution has brought different emotional reactions among students and teachers. In the beginning, students were happy that they got a break of at least 3 weeks, they are free to enjoy sitting at home and will be involved in many activities. Initially, there were not aware of the social distancing (rather physical distancing) and sitting at home, which brought stress and anxiety at a later stage. A similar kind of feeling was with teachers as well, however, worried about the future of their students and their own kids' education; and online education because of a lack of experience of online education. There were/are many challenges for teachers for online teaching such as pedagogical concerns, how to engage students, how to develop syllabus pack for online education, 24 hours internet connectivity which caused cost burden, not having laptops, electricity issues, managing stress and anxiety due to fear of this deadly virus.

Students came to know all the above-mentioned worries of teachers when educational institutions started online education. Students realized the same issues which teachers were worried about. We are going to discuss in-depth, the most common issues which students faced while studying in a public sector universities.

Students -The denial phase

In the beginning, when the universities started teaching within two weeks of closure of the university through Zoom, Loom, WhatsApp (the most reachable mode of communication), the students and teachers were in the phase of denial. In this regard, teachers were in a better situation as directed by the authorities and ready to deliver. However, students were in complete denial phase because they thought they did not enjoy the holidays yet and online education has started already. Their denial phase can be observed by their conversations done in WhatsApp groups. As each instructor created a WhatsApp group of every single subject and with that group, more groups were also created. The students expressed their denial in this way:

Other universities did not start yet and our university has started too quickly. 9 a.m. is not a good time for the class as it is too early and we are still sleepy.

Why we need to start studying, let us have some rest. Why we cannot wait for the COVID-19 to be finished and start learning again. Meanwhile, we can enjoy Netflix.

Whats the heck to start online education. We are not used to it. We don't see our teachers and class-fellows, it's just like talking to myself and then wait for a long to get an answer.

There were innumerable messages from students about online education, which teachers had to read and to make them realize that online education is the need of the hour and there is no alternative. However, class participation and attendance remained an issue throughout the semester. For the quality assurance purpose and the development of special online course packs, classes again put on halt for at least 2-3 weeks (as per Higher Education Commission of Pakistan's instructions), students were again happy and indulge themselves in their social media activities, watching movies, online games among other activities.

Teachers' reluctance to online education came to an end when online education coaching and training started in the studied universities in this research. Teachers became ready due to unavoidable circumstances and spent most of their time on preparing online resource packs including rubrics, clear instructions to students about assignments, quizzes, projects, presentations, re-designing of course material and delivery of material, among other requirements. However, students' enthusiasm for online education could not have been created during 2-3 weeks' time. It is also worth mentioning that the outcomes of online education are remained to be observed as semesters are still running in the studied universities.

Difficulties of students to attend classes

It is to remember that every student has a different level of learning at higher education level. During this online teaching experience, most of the time students were complaining about accessibility to only 2 G network or broken connections (lack of internet facility), severe electricity issues across the country, involve in household chores, classes at odd timings – 8 a.m. was too early, and 8 p.m. was too late for them. As the schedule was followed at the ease of students, as a result, teachers faced a lot of difficulties in negotiating with students about class timings.

Lack of accessibility to the internet: About 36 percent of Pakistani households have broadband Internet access, according to government figures, but only 15.5 percent of the population used the Internet in 2017, according to the World Bank (George, 2020). Out study found that accessibility to internet to be a genuine issue – as explained in methodology section of this article - because many students live in far-flung areas of Pakistan such as; Azad Jammu and Kashmir (the Kashmir side attached to Pakistan), Gilgit and Baltistan (GB) and interiors of the Punjab, Baluchistan provinces (Khan, 2020). This is the main reason we have chosen students of these areas for our study. In these areas, the internet facility is provided but to a limited access due to restrictions put by the government because of the sensitive nature of the areas (border with India). For example students explained:

I have to go to the rooftop to catch the signals. Sometimes I have to sit outside my home to find a place where I can get signals. It is difficult to attend classes online and download the materials and videos too.

In my area, only 2 G works. I cannot upload or download anything in my areas. I cannot use even emails for communication. To get all material and upload videos, I visit the city once in fortnight and get all things done. This delays my submissions.

We do have internet package system which has a particular date to recharge. If our internet finishes early (as we are many users in a home), then my parents do not recharge before the due date. This practice delays my submissions and also made it difficult to attend classes online.

One day out of frustration, I wanted to climb the tower of the mobile company to download my lectures and assignments. My mother stopped me as I could have been dead due to a fall from the tower. The connectivity issue made me frustrated and stressed and it seems to me that I am a failure.

Moreover, internet packages at home have to be shared with other family members, their recharge issues faced by the students as well. Thus, internet accessibility remains an issue with students until the time of writing of this article. Thus, inequity among students remained.

Electricity provision and shortfall are issues in Pakistan for decades, and it is estimated that 50 million people lack grid electricity, and Pakistan is ranked 115th among 137 economies for reliable power (Zhang, 2018). In remote areas such as interiors of Punjab, GB and AJK, electricity shortfall remains an issue and due to which many students cannot complete their tasks in the given time. For example, quiz on Google classroom – which is designed there and time bound - many students could not complete on time because of the electricity issue.

In my area, electricity is an issue and I faced a lot of problems in completing my academic tasks. Sometimes it comes back after 24 hours and if I have to submit any thing in that time period, I cannot do that.

Due to electricity shortage, I am unable to complete my academic tasks and even cannot attend online classes. It really frustrates me as nobody can help me to solve this issue.

In the same vein, given assignments, projects, given readings and discussions on them, could not be done in the given time due to the above-mentioned issue. It creates continuous delays in getting smooth online education.

Stress and anxiety are an outcome of online teaching among students as well as faculty. Across the globe, it is found that online education has stressed and created anxiety among students because they were not used to online education (Lederman, 2020). Absence of required gadgets such as smartphones, tablets and laptops, which were not required when universities were open and face-to-face communication was done, put a lot of pressure on the families either to buy them, borrow from someone or sacrifice their children's studies.

I have only cell phone on which I do all my academic activities on it. It is difficult for me to buy a laptop, my parents cannot afford it. The only option I have is to use cell phone. This has impacted my eye sight badly.
I cannot take class regularly as we have only a laptop and my siblings have to use them as well. So if there is a clash of timings between our classes, then we negotiate with each other.

In most of the cases, students have to share resources (laptops, cell phones, internet recharge) with their siblings, which creates a tense situation in the family and a matter of priority as well. Most of the students, who study in public universities are from humble middle-class family backgrounds, and COVID-19 has exacerbated the economic situation and many family heads have lost their regular jobs, arrangements of smartphones and laptops became a tough job for parents. As public universities are facing a budget cut from the Higher Education Commission (HEC) and provincial governments, thus unable to make such arrangements for vulnerable students as compared to other private institutions such as Lahore University of Management Sciences – a private university, who have provided laptops and internet devices for needy students (see Johnson, Veletsianos &Seaman, 2020 for more details). This raises the question of equity among students while going for online education.

Furthermore, attending classes regularly, getting all required academic activities done, getting good marks put a lot of stress and anxiety on students while living and studying in such environment (Salman et al., 2020). Those students who already have mental and physical health issues such as depression, anxiety, seizure, insomnia, or any other unknown disease to teachers, caused more stress among such students, and they needed counselors, psychologists, and in some cases psychiatrists. It was not possible to have access to such services as these people became too busy with consultation on phone than allowing people to visit them. Consultation on phone might have not helped many students in this complex situation of the pandemic, where they want to talk in detail and want to see their physicians.

Coronavirus positive patients were also among family members of students or students themselves. This added anxiety - fear of losing their lives or loved-ones -, and depression among students (Salman et al., 2020). Fear of Coronavirus, closure of universities and all other activities of life, physical and social distancing, students missed social interactions and that have caused stress and anxiety. It is being reported that students learn from each other more than individual learning (Lederman, 2020). In the absence of social interaction and living amid fear, it was almost near to impossible for students to complete their academic activities including submission of assignments, taking quizzes, and giving presentations. However, students got support from teachers who helped them to cope with their fear, anxiety, and depression by listening to them individually and giving more time to complete their academic tasks. The empathetic approach of teachers was helpful for students to take care of themselves, their families, and also complete tasks when they could.

Difficulties faced by teachers

The unprecedented challenging pandemic situation created many difficulties and changed dynamics of work from home for everyone including teachers. Living in joint families, having husband/wife and children around, internet accessibility, electricity issues, communication with students on screens, motivating students to attend and participate in the classes regularly, developing online course packs, attending meetings and training to learn new software for teaching among other issues were some of the main difficulties faced by teachers which has put much a lot pressure on teachers to be on toes. Working from home became a nightmare for many as they could not cope with the new challenges brought by COVID-19.

Working from home might have been a dream for many employees including teachers, and many of them have wished for that as well. However, amid COVID-19, it was not a good experience for many. The stress and anxiety to handle family and work from home became a big challenge for many teachers. In addition to this, the fear of Coronavirus itself was a traumatic situation for many and in that taking care of family's hygiene, sanitization, food preparation by keeping doctors' instructions in mind, making arrangements for their own children's classes among other tasks to be performed by the teachers at home.

Economies of the households have affected many families in this pandemic situation which has put pressure on families' income. In such situations, the arrangement of classes, keeping recharge of the internet

for their children's classes and academic activities of their students, arrangements of extra required electronic gadgets has disturbed many families' financial positions where they have to prioritize things according to their importance. However, as professional teachers, compromise on their professional duties could not have been an option for them, thus put a strain on them to continue despite a humble budget for household expenses.

Working according to a schedule was one of the difficulties faced by teachers. As every one of the family members was at home, it was difficult to set a routine for a day even for children. Early or late night classes were one of the best timings for teachers, however, students were not ready. Taking classes or attending meetings during the day time was a clash with their children's online classes as well, thus made teachers to juggle around and try not to sacrifice the quality of anything what s/he is doing.

What is online education and what is my role? This question has created fear in the minds of teachers at the beginning of this phenomenon. As online education was a new phenomenon for everyone who was key informant of this research, there were many myths and fears in the minds of everyone who was involved with it. For teachers, it became more challenging because there was no Learning Management System (LMS) in the studied universities. At the time of the emergency of COVID-19, it was also the concern of many whether I would be able to learn a new system? Am I going to be left behind and ultimately left out because of technology? Is it very difficult? How I am going to learn all this? Who is going to help me? How online education is different from face to face communication? How online pedagogy is different from face to face teaching, among other many questions. In the start of online education, where teachers needed answers to all questions and to be able to get through it, it stressed them and created anxiety in them to survive professionally.

To help teachers, public universities have arranged **orientation and training sessions** for teachers to learn Google Classroom – when it became an official mode for delivery of online classes in the studied universities. Before Google Classroom, teachers were free to use WhatsApp, Zoom, Loom, or any other software for classes and it was easy for everyone because of the different choices. It was the matter of choice and ease as well. However, detailed orientation and training sessions were done by core teams of universities to continue to educate about the Google Classroom- a web-based service to create, distribute and grade quizzes, assignments, projects, presentations with many other features. Teachers have had faced difficulties to understand it as it was a new service – which was never used before- and it has so many features to make the lives of teachers and students easy. Google Classroom integrates docs, sheets, slides, Gmail, and calendar into a cohesive platform to manage student and teacher communication. However, the use of this web-based service was a tough job for many because never knew about it and never used it. Over time, teachers learned about this service and used both synrchornous (70%) as per policy of the universities, and asynchronous (30%) methods for interaction and teaching (Johnson, Veletsianos & Seaman, 2020), though interaction with the student on-screen remained an issue throughout online education.

Interaction with students was another challenge for teachers to deal with. Online education needed different kind of pedagogy which were unknown to most of teachers. To involve students online was the most difficult thing which teachers faced because teachers did not know whether students were present in the classes, although their names were seen on the screen. Calling their names for their participation and getting no response created a lot of frustration among teachers. Those teachers, who were used to move around in the class and were used to conduct different activities during the class to involve and get students' full attention and do some practical activities in the departments, felt upset and exhausted, if there was very less participation from students. For online education, the teachers have gone through a lengthy process where they prepared online course packs again by adding many things for the quality purpose and making sure that students get everything to facilitate their learning in this difficult time (Lee, 2020). However, it is to note here that teachers have lowered their expectations from students and changed their assignments and other academic activities to accommodate students (Johnson, Veletsianos & Seaman, 2020). Motivating students remained an issue for teachers throughout the semester, as mentioned above. Motivating students, their

children and it was like a rollercoaster for all teachers in the current semester. Continuous communication with students was an important part of motivation for online education.

WhatsApp groups were created for each class by the teachers for the direct, prompt, accessible, and easy communication instead of sending emails or sending messages on Google Classroom. Managing WhatsApp groups needed a lot of effort and time-consuming activity. Because if a communication thread starts either from the teacher's side or students' side, then it was a never-ending communication. To keep it professional, to the point and to avoid personal comments took a lot of energy from teachers because could have caused big fights and many myths related to academic activities. As this was the first time that teachers and students were in direct contact through WhatsApp, students did not understand how to communicate. There were many reminders for students that it is not the right forum to talk and you can talk in private either with teacher or class fellows. However, we found it as a learning experience for students because they got training on how, when, and where to raise their issues.

Ergonomics plays an important role in maintaining human health to avoid back, shoulder and neck pains. In offices, ergonomics were taken care by the employer, however to a very limited extent. This pandemic has forced everyone to work from home, thus needed to create a working place at home. However, there were many students and teachers who could not manage ergonomics requirements at home due to no information about it, small living places, costly equipment, and families' non-serious attitude towards it among many other factors. Thus, students and teachers both complained about pains in the body and needed to see doctor at different times.

Opportunities amid COVID-19

In the previous section of this paper, we have been discussing the difficulties and challenging situations of students and teachers. In this section of the paper, we want to focus on the positive aspects of online education in this pandemic. For students, it can be accessible, affordable, interactive, and student-centered (Lee, 2020), but might not be an easy task for teachers, administrators, HEC, and the Ministry of Education and any other person or institution which is relevant to education. It is because careful planning and its implementation are needed where all relevant policies were devised such as privacy and confidentiality of students, sharing of material, copyright issues, formative and summative assessments, among many others.

Students find it **accessible** and easy mode of learning if they had good speed internet. In face-to-face education, when they missed the day due to any reason, they could not have taken the recording of the lectures, as they were not being recorded. The use of Google Classroom gave them a chance to get recordings of all missed lectures and questions answers in them as well, as all lectures were recorded and recording were upload within 24 hours after class. Many teachers were quite innovative in it and used Jamboard which made it easy for students to understand all the conversations and lectures especially the subjects of economics, finance, mathematics, physics, etc. In addition to this, many teachers recorded their lectures and uploaded (asynchronous mode), and then questions answers sessions were done. More detailed discussions were done in WhatsApp groups and individually with the teachers.

Online education is **affordable** for those students who cannot travel on daily basis to universities. And amid COVID-19, when everything was on halt and school and universities are closed, this can be affordable for those who have electronic gadgets and internet as part of their lives. However, put a strain on those who cannot afford it. Overall, from the students' perspective, it is found that it was affordable to them, despite difficulties and challenges.

Interactions among students and teachers are one of the most important components of education- either face to face or online. Online education can be an interactive activity where all students can take part in the discussion. There were different strategies that teachers used to increase interactions among students. Class activities, discussion in small groups, group work, discussions on WhatsApp and informal meeting on Google Hangouts, frequent emails, were the interactive forums where students communicated with each other and teachers as well, but needed protocols to communicate in an appropriate and well-behaved manner (Peterson, 2016), as discussed in the previous section of this paper.

To make **online education student-centered**, there were different activities where teachers planned and implement to make it sure that students interact with the content of the studied subject, with fellow students and with the teacher as well(Shehzadi et al., 2020). For example, students were asked to write a summary of the studied topic, read a case study or any document, gave a general understanding of the read document, presented contents through the power-point presentation, lead the discussion, conducted a critical analysis of the given reading/document/articles/case studies/Act/laws, worked in groups and presented their work, uploaded detailed information about every academic activity by the instructor and held question-answer sessions, provided detailed feedback through track-changes among other student-centered activities (Riggs, 2020). This made students feel special that a lot of effort has been put by individual instructors and gave the feeling that it is for their future and a kind of motivation to continue semester online.

Access to online learning resources such as library, organizations' profiles and reports, journals, articles, research was provided to students and teachers. This access was supported by many organizations that have generously offered their services and access for free for a specific time period. This has helped students and teachers to continue their research and academic activities without any hurdles and delays. Special assistance and orientation sessions were provided by the librarian of both studied universities for those who needed help. Such assistance has boosted the morale and confidence among students and teachers that they can work, can be involved in academic and research activities, and can be connected to the rest of the world, even in this pandemic.

Discussion

In this study, we have discussed that in a country like Pakistan, where online education is nonexistent in public sector schools, colleges, and universities, and Pandemic such as COVID-19 has brought a big challenge for education. In a culture of face-to-face education and learning, it was a tough decision by the government to go online education without giving any support of extra budgeting to schools, colleges and universities to build their online systems. In addition to this, no training was provided and individual educational institutions were left with some guidelines to be followed. Such a situation created panic among students, faculty members, administrators, and all other relevant personnel.

Without clear guidance, blurred ways to be followed, lack of readiness of students and faculty members was one of the biggest challenges, discussed above. Non-willingness and non-cooperation of students further exacerbated the situation. Many of the students came out for protest against online education in different cities and in front of higher education commission offices at the federal and provincial level (Sachwani, 2020). Online education caused stress and anxiety in students, parents, and teachers as well because of its non-familiarity and its demands were different than face-to-face education.

Demands such as continuous availability of internet, electricity, electronic gadgets, attending classes, continuous communication with students, fellow students, and instructors, were a few of the demands for online education. However, many students were not ready for all these demands which put pressure on them and their parents, thus results in stress and anxiety. The fear of COVID-19 itself brought much stress in people's lives generally and to students particularly (Salman et al., 2020). Attending online classes – mostly synchronous-, taking online quizzes, and submitting assignments and projects remained challenges for students while living in the fear of COVID-19. Without giving students proper and detailed orientation and training of the chosen web-based service caused great stress and feeling of left out (Khan, 2020). In addition to this, those students who had an interest in technology and web surfing, they helped their class fellows to understand. In this difficult time, teachers supported their students and have taken steps individually to facilitate students. This included direct calls with students on phone, maintain WhatsApp communication, continuous feedback on emails, and having a combined meeting on Google meet have helped them to lessen their anxiety and stress as they felt that others are in the same positions and teachers were there to help them. However, webinars or training for students and technological support to students must be provided that online education can be a fun and exciting activity for them (Darby & Lang, 2019). And encouragement for teachers as well.

As far as teachers are concerned, they also went through the whole process of pressure, stress, anxiety to conduct online education as they were not trained, being part of the public sector university, and it is a fact that putting a class online is much harder (Darby & Lang, 2019). Getting ready in no time was a difficult task while living with families and especially managing children's education as well (Byrne & Donlan, 2020). Continuous meetings with the administration of the universities, regular orientation, and training sessions lessened anxiety, however increased stress to managing online education and family. It is a learned lesson that further professional training to teachers on online education, sufficient time to create engaging and effective online courses, and support from dedicated professional to help them in designing courses is needed (Darby & Lang 2019; Byrne & Donlan 2020). Online pedagogical orientations and training are needed as it needs different methodologies to involve students and to maintain their interest in educational activities throughout the semester (Barry, 2020).

Assessments are an integral part of the educational system to assess the performance of students (Eyal, 2012). This includes formative and summative assessments, which need special attention as far as online education is concerned (Perera-Diltz & Moe, 2014). Formative assessment is an ongoing activity (Byrne & Donlan, 2020) and summative is at the end of the semester where the taught subject is concluded in the form of final term exams or final projects among other modalities to measure levels of learning, defined by the department for each class. In this, special care and attention are needed as assessment criteria and methods are different from face to face education. The development of rubrics for every academic activity is an essential part of any kind of education including online education. Assessments such as practical work and work's presentations, comprehensive final exams (open book, case studies, scenario-based questions, etc.), reflection papers and journals, term-paper among others are some of the examples of formative and summative assessments which can be used in online education (Perera-Diltz & Moe, 2014). However, authenticity, reliability, and dishonesty remain an issue in such assessments (Gikandi et al., 2011). In this regard, training is needed to design formative and summative assessments in a way that will capture the learning of each student in a proper way.

Online education needs continuous updating course contents, adding or deleting things and improve in such a way that teachers and students both can learn as much as possible. In this regard, online resource links must be provided to teachers to upgrade about online education (Johnson, Veletsianos & Seaman, 2020). It is important to consider to support those students who are living in far-flung areas and cannot access the online material and lectures to maintain an equity concept in education. A sustainable educational plan should be prepared by the educational institution to enable every single student of the country to get online education in this pandemic.

The pandemic situation brought a lot of stress and anxiety among students and teachers, and in some cases depression too. There is an urgent need to have counselors and psychologists, who can help, to maintain stress and anxiety. It is also needed to train students and teachers on how to balance work and family life while working at home - which is one of the main concerns of human resource management.

Conclusion

This article highlights the experience of first time online education in public sector universities in Pakistan due to COVID-19. The pandemic has forced Pakistani public sector universities to change the mode of education from face-to-face communication to online education without having prior experiences at both ends, students and teachers. Thus, it was not planned and needed timely updates and changes. Students and teachers both faced many difficulties. However, this emergency response can be a learning experience to plan in future with all care, details and attentions. Proper training and orientation sessions should be held for students and teachers that online education can be a fun and exciting and learning at the same time. Through current experience, we can develop new ways and strategies to continue online or hybrid mode of education, however a clear vision is needed. COVID-19 has shown us that higher educational institutions can be resilient to emergency situations and can continue education no matter what situation comes. It is an enriching

experience on which we can built upon our future strategies to make online education as part of face-to-face education.

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