Online Teaching Practices During the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic has had a remarkable economic impact worldwide, including in Pakistan, and was soon declared an international public health issue. The education sector in Pakistan, specifically school (K-12) education, has seen a staggering impact due to obstacles in delivering alternative forms of education during the pandemic. Educational institutions in Pakistan closed on March 13, 2020, and then, on April 13, 2020, the Ministry of Education, in collaboration with the Information and Broadcasting Ministry, announced the launch of a "tele-schooling" initiative. Teaching staff, who are arguably the most vital resource in any schooling system, faced considerable physical, mental, and financial challenges due to an overnight shift to an online mode of teaching, with issues concerning inadequate digital pedagogical knowledge and infrastructure limitations relating mostly to power connectivity. The current study investigated the perception of Pakistani school teachers regarding their online teaching practices during the COVID-19 pandemic. In the study, a qualitative research strategy was adopted, with semi-structured interviews conducted via Skype with 10 school teachers from Pakistan's renowned Army Public School and College System (APSACS) schools located in the Rawalpindi and Islamabad regions of the country. Saldana's (2016) structured inductive data analysis method was used in analyzing the collected data. The study's results highlighted the issues and challenges confronted by school teachers in delivering online lessons via Google Classroom, Zoom, and Microsoft Teams such as high-cost Internet packages, uncooperative learners, low attendance of learners, teachers' technology confidence, limited availability of educational resources, lack of ICT knowledge, and poor network infrastructure. However, the creativity, dedication, and community spirit which the school teachers demonstrated in working with very limited facilities were exemplary. Hence, based on the study's findings, changes were proposed as a way forward. It is hoped that the study's findings will help policymakers and the Ministry of Education in Pakistan to focus more on human capital development, interpersonal development, communication and technology management training, and support programs, especially for school teachers as the foundation of the next and future generations.

Keywords: COVID-19, online platform, learner, teacher, technology challenge, COVID-19 pandemic, Pakistan.

Overview

The swift development and growth in technology has played an essential role in making distance education mostly hassle-free (Murphy, 2020) for both instructors and for learners. The literature has revealed varied terms for distance learning such as web-based, online, blended learning, and computer-mediated learning, etc. The commonality is the capability to utilize computers connected to a network in order to facilitate learning from virtually any location (Basilaia et al., 2020). Thus, the learning experience can be achieved in both synchronous and asynchronous environments through the utilization of various technological devices such as smartphones, laptop computers, and tablet computers, along with networked connectivity, which fundamentally defines online learning (Dhawan, 2020). Bao (2020) highlighted the delivery of a massive number of online courses, and certain teething problems related to both the technology and its usage (Demuyakor, 2020). UNESCO (2020) reported that 165 billion learners worldwide, equivalent to 87% of the world's student population, suffered to some degree due to the impact of the COVID-19 school closures. Recent research has shown that the COVID-19 pandemic sent shockwaves throughout the entire education system on an unprecedented global scale, with lockdown orders, physical distancing, and online classes introduced swiftly in most countries (Johnson et al., 2020).

The COVID-19 pandemic affected education systems with the closure of schools in both developed and developing countries, resulting in long-term adverse effects on education, as well as broader consequences in terms of economic growth and development (UNESCO et al., 2020). The substitute for classroom teaching has been emergency online teaching, which encountered various obstacles such as limited technical knowledge and tutoring capabilities, inadequate and weak infrastructure, and issues with online connectivity. Similarly, inequalities of learning outcomes also occurred in rural areas where there are known paucity issues related to reliable power supply and Internet availability (Uwezo, 2020). The European Commission's (2020) Digital Action Plan stated that the closure of schools in most countries affected more than 60% of the student population. The Digital Action Plan also stressed the application of an essential support and development program for online teaching practices and strategies across all European member states.

A report by the European Data Portal (2020) stated that worldwide, 50,134,558 students from partially-closed schools and 1,130,169,834 students from fully-closed schools were affected by the pandemic. Educational Technology (EdTech) has been considered as part of the solution to cope with this alarming situation and to minimize the effect of school closures by providing distance education on a global scale (Malik, 2020). As a country, Pakistan possesses a vast and intricate education system that includes 41 million enrolled students across primary and secondary education aged between 5 and 16 years old. However, UNICEF (2020) reports that 22.8 million children are not enrolled in school, representing 5.3 million drop-out cases, and 17.5 million having never attended school (Bank, 2019; Danjou, 2020).

In Pakistan, the provincial government and the Federal Ministry of Education are responsible for the country's national education system. The Ministry of Education and Federal Training (Pakistan) (2020) identified technology-based education interventions as a means to support learners through television, radio, and online teaching applications such as Zoom, Google Classroom, and Microsoft Teams that are accessible via internet-connected

computers and also via smartphone mobile technology. Notably, the COVID-19 pandemic has fundamentally changed the teaching practices for school teachers who would typically be used to classroom teaching (Zhang et al., 2020). This change of process from face-to-face classroom teaching to online teaching practice influences the school teachers' teaching norms, their professional role, and the teaching strategies they apply, with the virtual model of education a largely new experience for most school teachers in Pakistan. Teaching staff are therefore facing difficulties in adopting and adapting to the online mode of teaching due to their limited expertise in online education and platforms.

The current study explores school teachers' perceptions regarding online teaching practices during the COVID-19 crisis in Pakistan. Since a successful education system is comprised of a quality schooling system and a powerful teaching force, the most critical decision relates to the investment in teachers to order improve the overall learning outcomes of its students. School teachers are the custodians of the future generations, and act as mentors to nurture students' academic growth, meaning that any nation's future lies in the hands of its teachers. Undoubtedly, teachers have to face various challenges and difficulties in performing their role efficiently according to the stringent teaching practices and activities of today, including lesson planning and writing, controlling and managing students in the classroom, and meeting the varying needs of their learners (Burgess, 2015; Thormann et al., 2012). COVID-19 has required countries to urgently step-up in preparing school teachers to utilize the latest technologies for the purposes of continuing classroom teaching practices within an online environment.

The research objective of the current study is as follows:

To explore the perceptions of school teachers in Pakistan towards online teaching practices during the COVID-19 pandemic.

The research question and sub-question of the current study is as follows:

What are the perceptions of school teachers in Pakistan towards online teaching practices during the COVID-19 pandemic?

What are the common challenges that school teachers in Pakistan are likely to encounter during online teaching during the COVID-19 pandemic?

Methodology

The current study explores the perception of school teachers in Pakistan regarding online teaching practices during the COVID-19 pandemic. A qualitative research strategy was adopted in the study, as the investigation is exploratory in nature regarding a new area of study leading to the development of a hypothesis (Miles & Huberman, 1994). Bradburn et al. (2004) stated that qualitative research involves the collecting of data through self-administered and open-ended questionnaires. Qualitative research is considered useful for the application of investigative questions as a guide to a detailed research design (Easterby-Smith et al., 1991). The current study employed the phenomenological approach in order to understand and share the participants' views (Creswell et al., 2012). The research design plays an important role and helps the researcher to answer specific research questions and acts as a focus for the entire research (Hall et al., 2016).

An explanatory research design is deemed more appropriate in finding answers to the research objective where the study is exploratory in nature. In the current study, data were collected through semi-structured interviews conducted with 10 teachers from the

renowned Army Public School and College System (APSACS) school branches in the twin cities of Rawalpindi and Islamabad in Pakistan. The selection of the number of participants in the current study is based on (Creswell et al., 2012) suggestion of between 5 and 25 respondents, which is considered adequate for a phenomenological study such as this. The semi-structured interviews were conducted between July 1 and July 20, 2020, via Skype, with each interview lasting between 30 and 45 minutes. The APSACS organization is comprised of 168 schools located throughout Pakistan, with a student population of approximately 224,997, and a teaching staff of 13,533 (APSACS Secretariat, 2020). Ethical approval for the current study was received from the APSACS secretariat in June 2020.

A semi-structured interview technique was deemed to be the most appropriate qualitative research method (David & Sutton, 2004) for the current study. The key preparations in the study was the development of the questions to be applied during the semi-structured interviews. Table 1 details the interview questions developed for this study (Covin & Wales, 2018). Bryman and Bell (2007) stated that prolonged inquiries should not be sought, and negative items need not be included in an interview guide. Similarly, technical language needs to be largely avoided in questioning as it is essential that the interviewees clearly understand the meaning of each question asked of them.

The modified version of Moustakas's (1994, as cited in Saldana, 2016) technique, which was introduced by Saldana (2016), was employed for the current study. This technique is comprised of the following seven analytical steps: i) manually group and transcribe comments from participants, ii) removal of irrelevant and redundant information, iii) categorize information into clusters and themes, iv) validate themes, v) construct textual descriptions based on participants' experiences, vi) create structural explanation by analyzing textual descriptions, and vii) establish final themes based on the participants' actual experiences (Hall et al., 2016). The structured method of inductive data analysis was employed in the current study, as it is considered to be a flexible qualitative approach to analysis (Braun & Clarke, 2006; Merriam, 2010). Table 1 presents the interview questions to which answers were sought during the semi-structured interviews.

Table 1. Interview Questions

	Semi-structured interview questions
1	How do you feel about this new culture of teaching and learning?
2	Are you comfortable integrating new classroom technologies such as Zoom and Google Classroom into your courses?
3	What issues are you facing with online teaching practices?
4	What is the biggest challenge you have faced in switching from face-to-face classroom teaching to online teaching?
5	What is your opinion regarding the implementation process for online teaching strategies from your school administration?

Table 2 presents the profile of the participants interviewed in the current study.

Table 2. Interviewed Participants

No	Variables		ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10
1		25-30 years	√	×	×	×	×	×	√	√	×	×
	Age	31-35years	×	×	×	×	√	√	×	×	√	√
		36-40 years	×	√	√	√	×	×	×	×	×	×
		41-45 years	×	×	×	×	×	×	×	×	×	×
2	Gender	Male	√	×	√	×	×	√	×	×	√	√
		Female	×	√	×	√	√	×	√	√	×	×
3	Educational level	Bachelor's	×	√	×	√	×	×	×	×	×	×
		Master's	√	×	×	×	√	√	√	√	√	×
		MPhil	×	×	√	×	×	×	×	×	×	√
4		Urdu	×	√	×	√	×	×	×	√	√	√
		Science	√	×	√	×	√	×	×	×	×	×
	Subject	Math	×	×	×	×	×	√	√	×	×	×
		English	√	×	×	×	×	×	×	×	×	×
		Islamiyat	×	√	×	√	×	×	×	×	×	×
		History	×	×	√	×	×	×	×	×	×	×
5	Teaching experience	3-6 years	×	√	×	×	×	×	×	×	×	×
		7-10 years	√	×	×	√	×	×	√	√	×	×
		11 years or more	×	×	√	×	√	√	×	×	√	√
6	Prior online teaching experience	Yes	×	×	×	×	×	×	×	×	×	×
		No	√	√	√	√	√	√	√	√	√	√
7	Personal laptop	Yes	×	√	√	×	√	×	√	√	×	×
		No	√	×	×	√	×	√	×	×	√	√

Note: ST1 = School Teacher 1

Table 2 presents the profile of the participants. From the 10 participants, four were aged 31-35 years old, whereas three were aged 36-40 years old, and three aged 25-30 years old. There was an equal participant gender split, with five male and five female teachers. Regarding the teachers' qualification, two of the participants held a Bachelor's degree (ST2, ST4), whilst six held a Master's degree (ST1, ST5, ST6, ST7, ST8, ST9), and two held a MPhil degree (ST3, ST10). The majority of the participants had teaching experience of 11 years or more (ST3, ST5, ST6, ST9, ST10), followed by 7-10 years (ST1, ST4, ST7, ST8), and 3-6 years (ST2). The participants taught subjects such as English, Science, Math, Islamiyat, Urdu, and History. None of the participants had any prior online teaching experience, and half (five) of them owned a laptop computer (ST2, ST3, ST5, ST7, ST8). Table 3 presents the various perception attributes of the school teachers regarding online teaching during the COVID-19 pandemic. Table 3 show the generated themes.

Table 3: Generated Themes

Perception attributes	Dimensions	No of participants
Online teaching culture	Limited resources (power and connectivity)	10
	Lack of technology knowhow	8
	Content restructuring	7
	Minimal learner support	10
	Shortage of facilities	10
	Restricted time	7

| Perception attributes	Dimensions	No of participants
Issues	Scarcity of e-devices (e.g., laptops)	5
	High-cost Internet packages needed for smooth connectivity	8
	Lack of expertise in online teaching	7
	Uncooperative learner attitudes	10
	Lack of cooperation from learners' families	10
	Low attendance of learners	10
Challenges	Creative lecture preparation	9
	Poor network infrastructure	8
	Lack of ICT knowledge	9
	Poor content development	7
	Student support	10
	Teachers' technological confidence	10
	New learning style confidence	9
	Limited availability of educational resources (especially in Urdu, Islamiyat)	9
	Limited feedback	8
Implementation Process	Training of teachers	5
	Knowledge management	7
	Counselling of students' families	6
	Email & telephone calls to parents	9
	Online class announcements via social media	7
	Online classes sourced from school premises (new strategy)	7
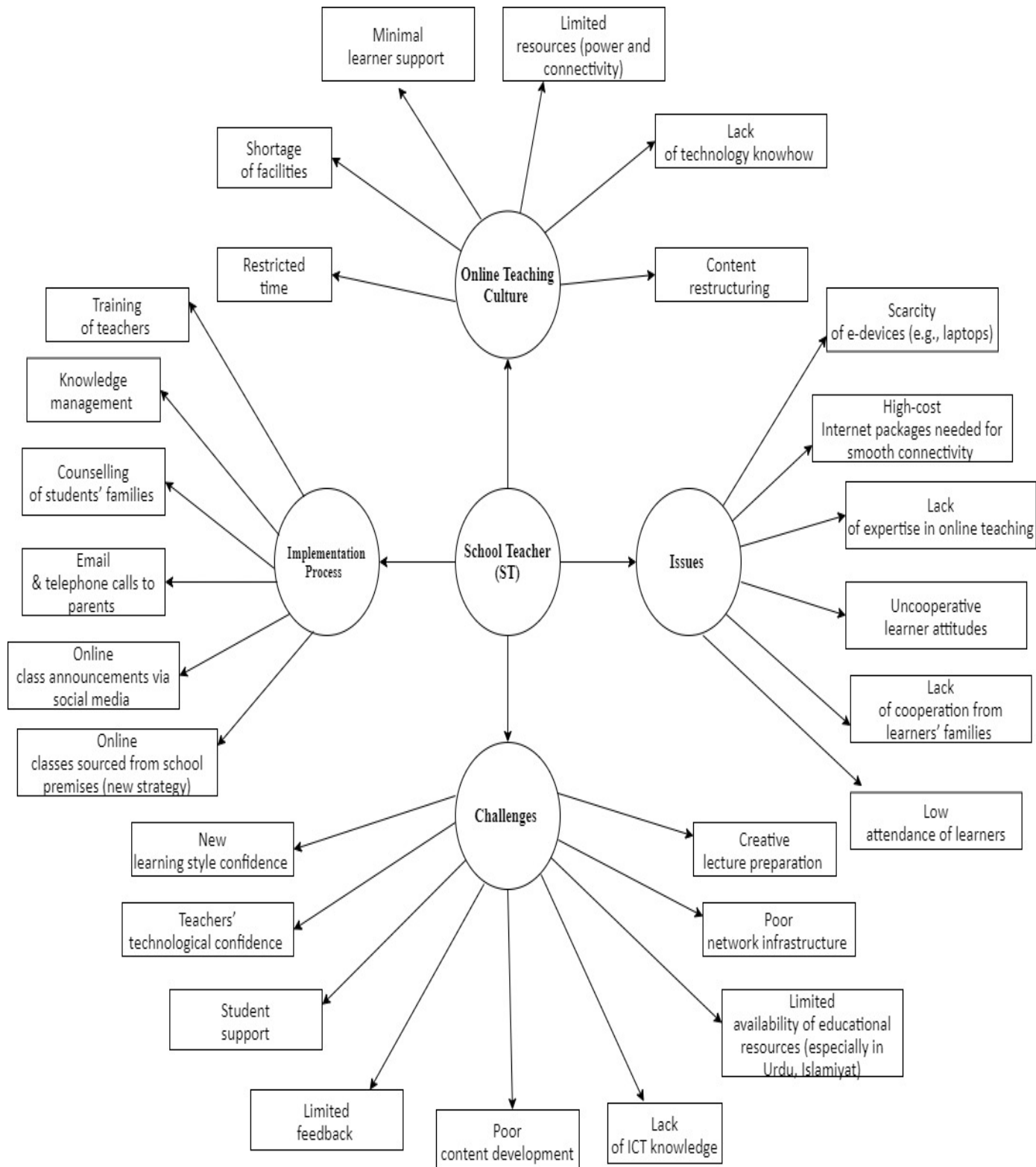
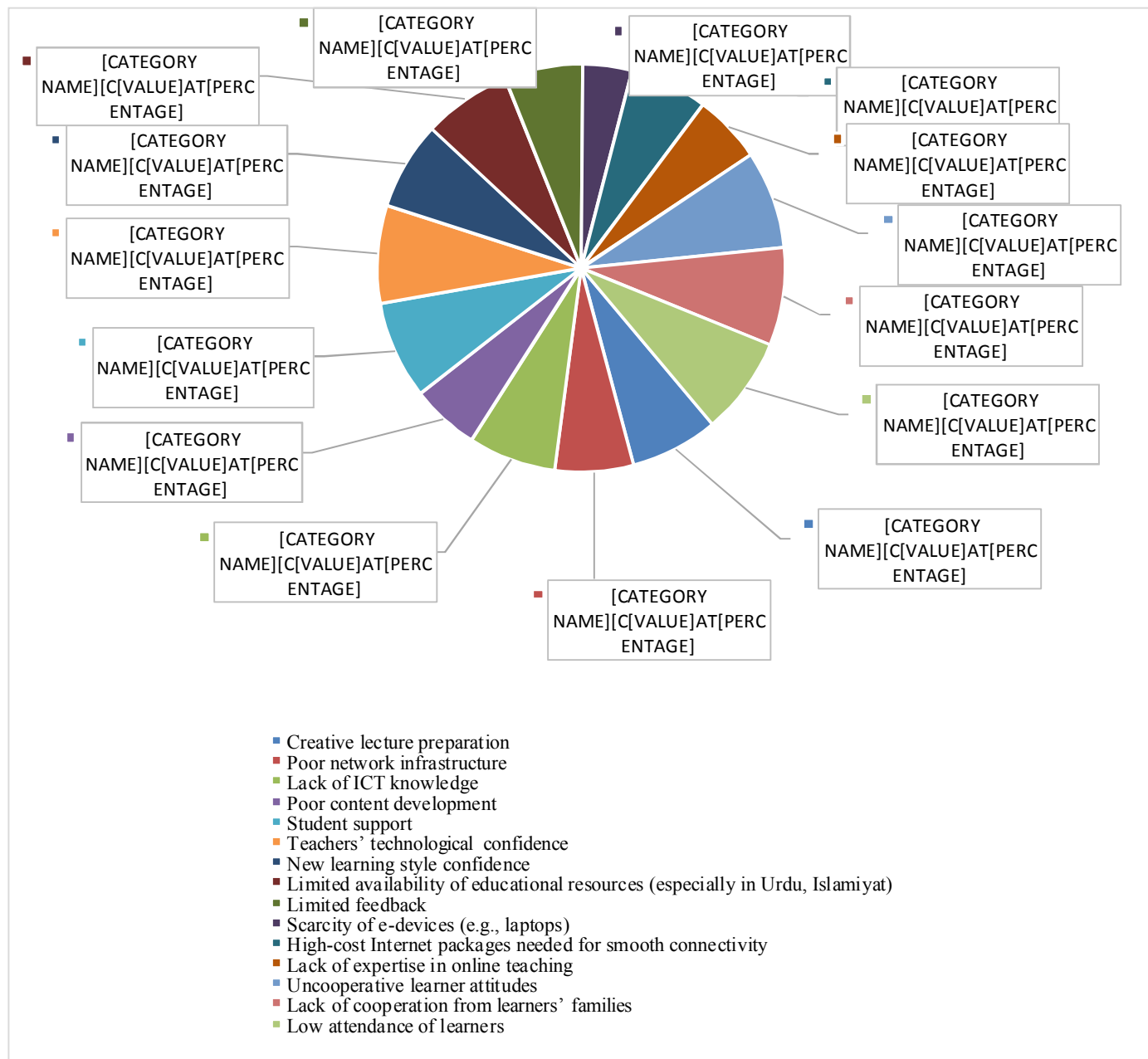**Figure 1.** School Teachers' Perceptions regarding Online Teaching Practices

Figure 2. Issues and Challenges confronted by School Teachers regarding Online Teaching Practices during COVID-19 Pandemic

Findings

The findings of the current study regarding the perceptions of school teachers in Pakistan concerning online teaching practices during the COVID-19 pandemic are summarized in Figure 1. The participants highlighted that limited resources (power and connectivity), minimal learner support, shortage of facilities, lack of technology knowhow and content restructuring were hindrances to the smooth operation of an online teaching environment.

The power and connectivity issue is a great hassle for us. This online teaching culture is new for us. Consequently, teachers are struggling hard and giving their input, but what can we do when heavy rain disrupts the Internet connection. We are suffering from a

shortage of facilities; and 2 days ago, an electrical transformer was damaged in my area, and I could not then give my classes due to the resulting power failure. (Participant ST2)

I want to say that support by the students is much reduced, with most joining the class very late, and 50% never even join; although they are still paying their monthly dues. We have restricted time for classes, as after that we have to join our next class. We are trying our best to help the learners, but if the students do not cooperate or respond, as teachers we are helpless. (Participant ST8)

I will say that 95% of teachers have no technological knowhow regarding how to make a PowerPoint presentation or how to manage online teaching applications. However, we have had hands-on practice and we have learned. We have worked hard to meet the required standards, to which our school management has set, even though we have shortages of facilities and fewer resources such as power and connectivity. (Participant ST3)

At the start, we were not comfortable with delivering the course; it presented a jump from face-to-face to online delivery that was new to us. We had hands-on practice, and shared our experiences during these hands-on practices and learned from each other. (Participant ST1)

Regarding the issues that the teachers were facing with online teaching practices, the majority of the participants talked of the scarcity of e-devices (e.g., laptops), and high-cost Internet packages needed for smooth connectivity, lack of expertise in online teaching, uncooperative students and their families, and the low attendance of learners.

The majority of teachers have no laptop. We invested in purchasing a laptop and changed our home Internet connection for smoother connectivity. Teachers have given their full efforts, from the adoption of the new mode of teaching until its implementation. But we are fatigued. (Participant ST4)

I will not say now I am perfect in using online teaching applications such as Zoom and Google Classroom, but well, I will say that I have learned a lot. The COVID-19 pandemic has given us a chance to learn new things. We have had hands-on practices and our school administration has helped us in this regard. (Participant ST6)

The learners' attendance is low and students are not always cooperative; even when we ask questions, they respond less. We are doing the best from our side, but I think responses and attendance from the students is hopeless, even with the various reminders sent to parents about attendance policy. (Participant ST7)

Concerning the challenges faced by the teachers, the interviewees voiced about poor network infrastructure, creative lectures preparation, lack of ICT knowledge, poor content development, student support, teaching technological and new learning style confidence, limited availability of educational resources, especially for Urdu and Islamiyat subjects, and limited feedback.

I am living in the upmarket area of Rawalpindi, but have still suffered from limited Internet connectivity, especially when there is bad weather such as rain. I changed my Internet connection and purchased a new laptop. Teachers are trying their best to cope with this situation, but the student support is virtually nil. The majority do not send in their assignments, even after repeated reminders. (Participant ST5)

We are unaware of how to type in Urdu and face challenges in preparing PowerPoint slides for our lectures. Second, e-books for subjects such as Urdu and Islamiyat are unavailable, so we have weaknesses in the content development of these subjects for online classes. Still, we are struggling and trying to give the best to our students. (Participant ST9)

The interview findings revealed the obstacles which school teachers in Pakistan have faced regarding online teaching practices during the COVID-19 pandemic. The most quoted issues and challenges were as follows:

- High cost of Internet packages;
- Uncooperative attitudes of learners;
- Reduced cooperation from students' families;
- Low attendance of students;
- Teacher technology confidence;
- Limited availability of educational e-resources (especially in Urdu and Islamiyat);
- Lack of ICT knowledge;
- Poor network infrastructure.

Related to the implementation plan, the participants explained that their school management had taken an unprecedented step of trying to facilitate a more smooth online learning process through teacher training, knowledge management, the counselling of students' families, and with online class announcements made via social media channels.

The school administration made the necessary arrangements for hands-on practice in using online teaching applications, and provided their best effort in counselling the parents to make sure their children attended online classes. Still, attendance is 30% in online classes. Due to shortages of e-learning equipment in the home, parents are unable to provide every child with a laptop or smartphone due to having 4-5 children in one family. (Participant ST2)

This new strategy which schools have adopted, uses Zoom classes delivered from the school's premises as from July 20, 2020. Teachers are doing their best, but feedback from the students has been unsatisfactory. (Participant ST10)

Overall, the COVID-19 pandemic has enhanced online learning practices. However, in a developing country like Pakistan, significant improvements and access to quality education services are needed (Malik, 2020). In order to ensure more effective online teaching results, teachers should attend faculty-led workshops and development courses organized by the school management. School teachers have the potential to learn, having proven themselves even with very limited facilities and resources. Even though Pakistan has spent an average of 2.2% of GDP on education over the past few years (Bank, 2019; Pasha, 2018), still further developments are needed to enhance the country's primary education facilities. Both e-learners and teaching staff are facing tremendous obstacles in developing countries due to inadequacies of the required resources and facilities (Richmond, 2020; Uwezo, 2020).

Nevertheless, teachers, who are the custodians of our future generation, continue to provide their services with great enthusiasm, even during this pandemic crisis. Despite the relentless challenges, teaching is still considered as one of the most adopted professions, with about 1.4 million teachers in Pakistan between the public and private educational sector, of which 51% is comprised of government-funded schooling (Ministry of Education and Federal Training [Pakistan], 2020; Pasha, 2018). Still, the development of school

teachers is seen as rare in Pakistani society in terms of training and education programs. Specific skills-related training are much needed in order that teachers can self-improve via a practical approach. Similarly, development programs are required for school teachers to strengthen the teaching profession, which is charged with nurturing the future of our younger generation. Teachers should help to identify the current developments in the field of teaching and pedagogy for a smoother delivery of education in Pakistan's schools. Table 4 depicts the major findings.

Table 4. Overview of Major Findings

Issues	Challenges	Implementation Processes
Technology-related • High-cost Internet packages needed for smooth connectivity • Scarcity of e-devices (e.g., laptops) Personal-related • Lack of expertise in online teaching Learner-related • Uncooperative learner attitudes • Lack of cooperation from learners' families • Low attendance of learners	Technology-related • Poor network infrastructure Teaching-related • Teachers' technological confidence • Lack of ICT knowledge • Creative lecture preparation • Poor content development • Limited availability of educational resources (especially Urdu, Islamiyat)	Human capital development • Training of teachers • Knowledge management Interpersonal development • Counselling of students' families Communication strategies • Email & telephone calls to parents • Online class announcements via social media Technology management • Online classes sourced from school premises (New Strategy)

Proposed Conceptual Framework

Based on the literature and findings obtained from the semi-structured participant teachers' interviews, a conceptual framework was developed. School teachers are considered as the builders of the future generation, with an efficacious education system based upon the delivery of quality education through captivating and knowledgeable teachers (Bank, 2019; Lee & Tsai, 2010). Figure 3 illustrates the issues and challenges associated with online teaching in Pakistan's schools. The issues are categorized as technology-related, personal-related, and learner-related issues, whereas the challenges are technology-related and teaching-related. Consequently, the outcome of implementation processes in terms of human capital and interpersonal developments, and also communication strategies leads to school teachers' wellbeing and overall success of the school system (Bank, 2019; Malik, 2020).
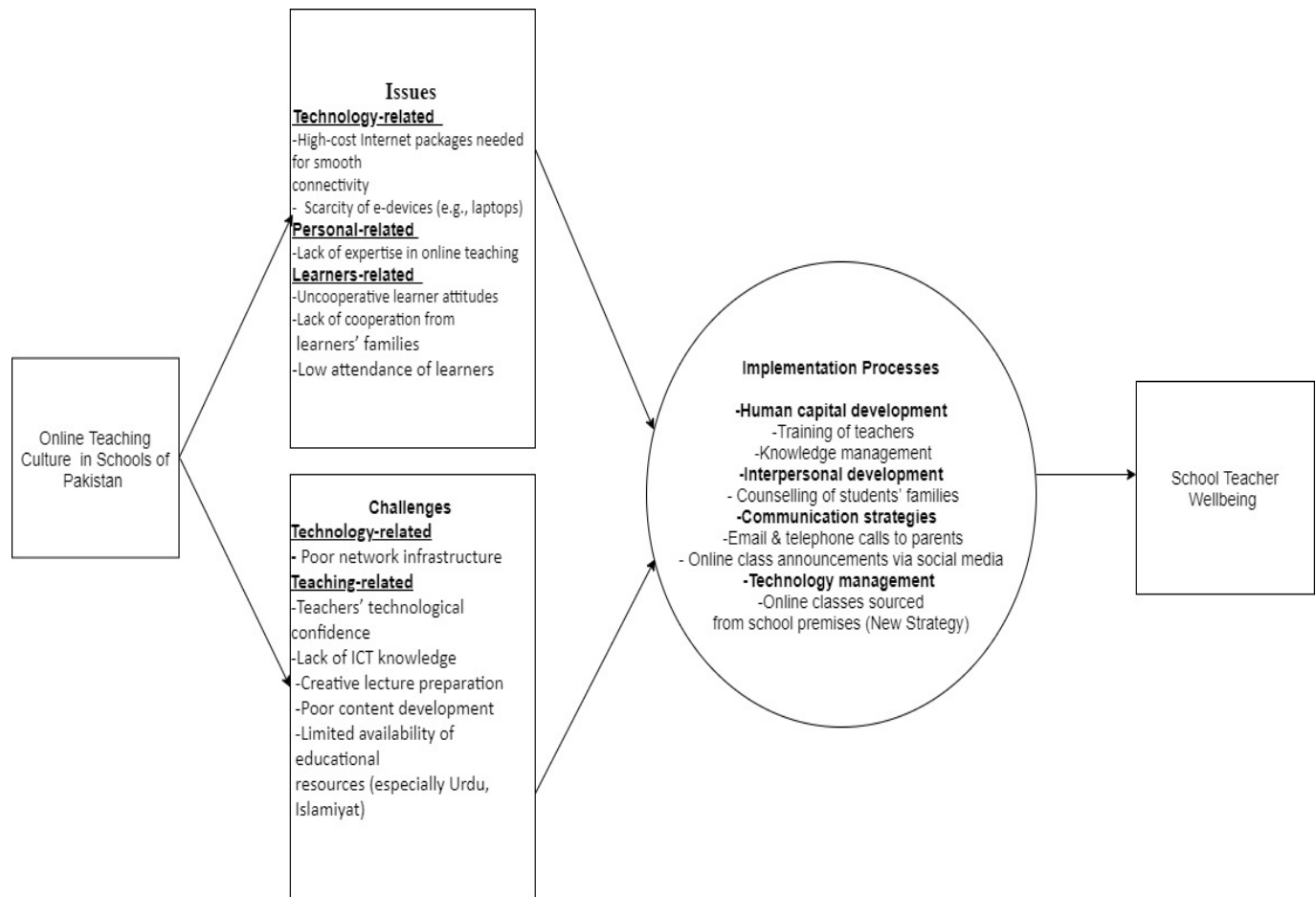
Figure 3: Conceptual Framework

Theoretical Justification

Transformation Learning Theory

The transformation learning theory explains that personal experience is considered essential for the learning process, and how teachers' interpret that experience plays a remarkable role in bringing about changes in terms of behaviors, beliefs, assumptions, judgements, and change of mindset. It is associated with changing teachers' judgement, belief and expectations (Lee & Tsai, 2010). Transformational theory allows faculty to accept the reality of the continuing process of critical reflection, discourse, and belief (Taylor, 1998). Transformative learning stresses the process, which highlights changed views and habits based on experience.

Implications on Way Forward

- The government of Pakistan should acknowledge the issue of low student attendance in the majority of non-systematic online learning classes. Most students lack basic access to e-devices and are therefore unable to take an active part in the digital learning process. Those who cannot afford e-devices and are unable to be receive eLearning are likely to face a state of anxiety and stress whenever the schools reopen, having been unable to keep up with the syllabus being followed online by their peers. This issue requires being paid serious attention, and a concrete

resolution sought as to the teaching and evaluation of those learners unable to take part in digital learning.

- The amalgamation of ICT usage in education must be reviewed by the Ministry of Education, keeping in mind those learners neglected due to lack of access who are facing considerable challenges due to lack of facilities and resources. For them, an ICT usage policy is of no consequence as it is inapplicable to their circumstances.

- School teachers need to be assessed based on their delivering of digital learning during the COVID-19 pandemic. Many teachers have tried their best during the pandemic, having rapidly learned new skills and improved themselves in terms of the usage, preparation, and delivery of digital lectures. However, there is also a need for standardized teacher training on digital delivery of lectures, and it is imperative to enhance all teachers digital teaching skills.

- Curricula revision, specifically during the pandemic period, is urgently needed. It is crucial to consider the position of the learners' parents, and to not unnecessarily burden students with self-directed learning. Increased levels of discussion should therefore take place during online lectures.

- The Pakistani government could establish a multi-sectoral committee to work on the long-term and systematic adoption of digital learning as a part of the country's education process. It may help to broaden the strategy to ensure that access to quality and long-term learning opportunities form part of the objective of the 2030 agenda.

Conclusion

The current study concludes from the perception of school teachers regarding online teaching practices, that teaching staff face various challenges from content development through to delivery, and also in enhancing the online learning capabilities of their students. However, student participation in online classes is reportedly minimal due to the limited or non-availability of e-devices for all students in home. Teaching staff are assisting students by providing additional online video tutoring and email guidance following online classes. However, student participation is at an unsatisfactory level. Thus, it is essential to revise the current teaching strategies and to initiate certain steps as schools start to utilize Zoom in delivering online lectures from school premises, and to equip classrooms with routers, camera and microphone systems in order to provide a more realistic and familiar classroom environment to the students.

Teaching staff are trying their best to enhance the capability of online learning amongst their students. The efforts of school teaching staff is commendable, with teachers who are used to face-to-face teaching throughout their entire career now teaching via online applications such as Zoom and Google Classroom. These teachers may have never faced a camera before, but are learning new skills, new tools, and practicing them daily in the delivery of online teaching to their students, which is of course their primary role. School teaching staff must be appreciated as they try to provide education to all students, despite the various difficulties, issues, and challenges they face. Coupled with the experience that is considered essential for the new learning process, and how teachers take to this experience is vital in terms of their beliefs, assumptions, and mindset change, as implicated by the Transformation Learning Theory.

Since the current study was conducted within one school system in Pakistan, further studies on teachers, learners, teaching and learning strategies, and online teaching impact should be conducted in order to gain a broader and deeper understanding of the pandemic's overall effect on the education system in a developing country such as Pakistan.

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