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School teachers and principals' experiences during COVID-19 in Pakistan

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SCHOOL TEACHERS AND PRINCIPALS' EXPERIENCES DURING COVID-19 IN PAKISTAN

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Abstract

As a result of the COVID-19 pandemic, educational activities were disrupted globally. In Pakistan, schools were also closed, and though some schools had started teaching online, the staff (including principals and teachers) and students' readiness for education during the pandemic remained unexplored. An internet-based survey was conducted to explore the experiences of the teachers and principals during the lockdown. The survey included both open-ended and closed-ended questions. Responses were collected from respondents in different parts of Pakistan, with the majority coming from Sindh and coming from both the private and public sector. While the respondents from private schools reported that they could teach online, the respondents from government schools could not continue the teaching process during the lockdown phase. School principals focused on acquiring technology for online teaching and offering skills development sessions. They used a variety of methods to monitor teaching and learning. Teachers relied on a mix of synchronous and asynchronous teaching. Infrastructure issues posed numerous challenges. Findings highlight an urgent need for teacher education programmes to incorporate digital literacy development and enhance pedagogical understanding of engaging students in online teaching environments and exploring solutions such as blended learning. The findings also draw our attention to questions of equitable access to quality education for all in Pakistan.

Keywords: *Schools, Covid-19, Online Teaching, Teacher Education, Digital Divide, Pakistan*

Introduction

On December 31, 2019, pneumonia of an unknown cause in Wuhan, China, was reported to the World Health Organization (WHO). In less than three months, on March 11, 2020, WHO declared COVID-19 a global pandemic. Following this, to reduce the spread of the virus, on-campus teaching was closed, which resulted in the disruption of educational activities globally, affecting more than one billion students in almost 172 countries worldwide (UNESCO, 2020). The schools' closure led to an instant and rapid transition, for many, from face-to-face to online teaching resulting in numerous challenges but also exploration opportunities.

COVID-19 pandemic and the havoc it inflicted, forced drastic changes on education systems globally. As in-person teaching-learning was not possible during the pandemic, many institutions either opted for online teaching or discontinued teaching-learning in the form of complete closure (World Bank, 2020). Consequently, educational systems globally reported excessive learning loss (Azevedo et al., 2020; Engzell, Frey, & Verhagen, 2020). These losses appeared relatively less for institutions that shifted to online modalities. On the flip side, institutions that remained disconnected from teaching-learning during the lockdown period have faced severe learning loss (Patrinos et al., 2022).

A noteworthy trend in the literature on online teaching during this period is the terminological diffusion in how it is referred. Various authors have referred to it as 'emergency remote teaching' (Bozkurt and Sharma 2020, i), "emergency eLearning" (Murphy, 2020, 492) or "quaranteaching" (Woods et al., 2020). This diffusion points to the unique nature of rapid online teaching. It is also worth noting that the shift from in-person teaching to online was not smooth. Several studies, mostly from developed contexts (e.g., Folkman et al., 2022; Carrillo & Flores, 2020; Van der Spoel et al., 2020), highlighted how teachers and students experienced multifarious challenges. Research studies (Carrillo & Flores, 2020; Flores & Swennen, 2020; Sepulveda-Escobar & Morrison, 2020; Mishra, Gupta & Shree, 2020) have also attempted to capture experiences of online teaching and learning in universities and schools and teacher education during the Covid-19 pandemic in different parts of the world to ensure the lessons inform future teaching and learning policy and practice. However, few studies have focused on

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principals' and teachers' experiences in response to the pandemic, particularly from developing contexts like Pakistan.

Teaching and Learning Dilemmas and Challenges in COVID -19 Crisis and Lessons Learnt

As COVID-19 spread around the world, countries rFor many, teaching and learning during the COVID-19 crisis have led to disorienting dilemmas and challenges. Balancing equity and access, working from home or at work, completing class hours vs quality online sessions of shorter duration, and face-to-face social interaction vs virtual social interaction has been a constant battle (Bakker & Wagner, 2020; Code, 2022). Other recurring challenges included: i) absence of or poor infrastructure for online teaching; ii) lack of relevant experiences of teachers; iii) teachers' and students' reluctance towards online teaching-learning; iv) ineffective mentoring and support system; v) lack of compatibility of existing teaching methods/course with online teaching (Adedoyin & Soykan, 2020; Al Salman et al., 2021; Carrillo & Flores, 2020; Faturoti, 2022; Huber & Helm, 2020; Mishra et al., 2021; Zhang et al., 2020).

Nevertheless, research indicates that these dilemmas and challenges offered practical solutions to stakeholders and created new learning opportunities. There are examples of successful curriculum transmission from Portuguese and Chilean contexts where they drew on strengths of personal teaching competence to re-shape the social interactions in online settings (Flores & Gago, 2020; Sepulveda-Escobar & Morrison, 2020). Reimers and Schleicher (2020) discuss OECD findings that the shift seemed to lead to students demonstrating greater autonomy and investment in managing their learning. Whitley et al. (2020) underline how the shift away from in-person teaching allowed learners who did not find school a pleasant nor a rewarding experience the opportunity to engage with learning in a safe environment. Day et al. (2020) and Van der Spoel et al. (2020) capture how the key stakeholders, teachers and students worked in tandem to overcome the challenges posed by the sudden shift in modality and their takeaway lessons for the post-pandemic classroom. Based on comparative lessons from Australia and Finland, Sahlberg (2021) argued that education systems built on trust-based professionalism are less reliant on externally measured standards and provide flexibility and autonomy to adapt the curriculum to local needs and strengths. These schools appeared to have fared better during the crisis.

Teaching and learning solutions that are inferred from this experience are many, including but not limited to: giving students an active role in learning-related choices; creating cooperative niches for participatory school policymaking; more relevant support in providing digital teaching materials, and promoting ICT competencies of both students and teachers, while considering hybrid models of schooling to maintain live interactions (Kovács Cerović et al., 2021). Some context-specific lessons (e.g., Yorke et al., 2021) shared the value of engaging at the community level through a cascade model of support where the local governments facilitated school principals, and in turn, the school principals were found more likely to provide support to teachers. Similarly, research indicates that both cognitive and affective presences are critical for productive online teaching-learning (Wut & Xu, 2021).

The COVID-19 Crisis and the Educational Emergency in Pakistan

The dilemmas and challenges confronting principals and teachers in Pakistan during the COVID-19 lockdown were no different. All the educational institutes, including schools, were closed for on-campus teaching by March 2020, and they were advised to use alternate means to ensure the continuation of learning. In a country where only 25% of the population was using the Internet in 2020 (World Bank, n.d.), the transition to online teaching was a challenge that only a few were able to outface. Some private and well-resourced schools successfully initiated a transition towards online teaching and learning. The government launched "Tele-school – a National TV Channel to disseminate SLO based educational content for Grade 1-12" (Ministry of Federal Education, 2020) and free download of android learning apps (Channa, 2021) for those for whom online learning was not a viable option due to a lack of digital connectivity and infrastructure. However, these initiatives by the government were not widely publicized, and therefore, many teachers remained unaware (Channa, 2021).

It should also be noted that even before Covid-19, the Pakistani education system was grappling with crippling deficiencies such as many children being out of school (AKU, 2022), and poor teacher education (USAID, 2010), outdated curriculum and rote learning (Bhutta & Rizvi, 2022). Hence, the added strain that the sudden closure of schools and transition to remote teaching due to COVID-19 created on an already frail and ailing education

system called for a systematic study to understand stakeholder experiences in Pakistan. Accordingly, the present study was conducted to explore principals' and teachers' experiences and needs during the initial lockdown period (i.e., March - July 2020) to utilize the results to propose necessary support. Though data were also collected from parents and students, in this paper, we focus on the experiences of teachers and school principals, addressing the following questions:

1. How have teachers and school principals adapted to life in the lockdown?
2. What are the support services needed by the principals and teachers?

While responding to these research questions, the paper concludes with a discussion on the needs and preparedness of schools and teacher education programs in Pakistan to provide quality education during uncertain times, and the implications for policy and practice related to teacher education and educational leadership programs.

Methodology

A cross-sectional online survey was carried out from 18 June 2020 to 7 July 2020. The questionnaire had both open and closed-ended questions, and it consisted of three sections (Table 1):

Table 1 Summary of the Survey Tool

Sections	Number of questions	Examples of items
Purpose of the study and participant consent and assent	-	-
Section 1: Demographic information and Access to technology (common for all)	10	Gender, Age, Location, Current role, Internet, and Device Access
Section 2: Open-ended questions to grasp respondents' experiences with online teaching and learning (different for each group)	08 Teachers 07 Parents 09 Students 07 School Heads/Principals	Level of teaching, Type of school, Issues faced during the lockdown, Support required from school and from IED

The survey was administered via SurveyMonkey. A link was emailed to teachers and principals through the Institute's Research and Policy Studies and Professional Development Centers. Further, the link was posted on the Institute's Facebook page. The respondents were limited to those who had access to the Internet and could communicate in English. Ethical approval was sought from the university's ethics review committee before administering the questionnaire.

The data was downloaded in a spreadsheet and imported into SPSS for descriptive analysis. 'Demographic Information' was analyzed and presented through descriptive statistics (i.e., frequency and percentage). Then, the current experiences and ICT access information of each stakeholder type were analyzed. Qualitative responses were coded, and a comprehensive

codebook was prepared. These codes were then collapsed into similar categories. Final themes were then identified after looking at convergence and divergence patterns in the quantitative and qualitative data analysis results (Miles, Huberman, & Saldaäna, 2019).

Findings
Demographics
A total of 220 responses were recorded out of which 20.5% were principals, and 79.5% were teachers. Though the respondents were from across Pakistan (i.e., Balochistan, KP, GB, Punjab, and Sindh) and represented public, private and community schools, the majority were from private schools (62%) located in Sindh (80%). Majority of the respondents were female (73%) and were between 30 and 40 years (72%). The details are provided in Table 2.

Table 2 Demographic data

Demographics		Frequency	Percentage
Current Role	School principal	45	20.5%
	Teacher	175	79.5%
Gender	Male	59	27%
	Female	161	73%
Age	Below 18	2	1%
	18 - 25 years	17	8%
	25 - 30 years	44	20%
	30 - 40 years	72	33%
	40 - 50 years	60	27%
	50 - 60 years	23	10%
	Above 60	2	1%
Type of school	Public	16	7%
	Private	136	62%
	CBS, Trust, NGO	17	8%
Region	Balochistan	5	2%
	CT	6	3%
	GB	6	3%
	KPK	4	2%
	Punjab	13	6%
	Sindh	176	80%

Access to and Use of Devices and Internet

The results presented in table 2 show that most of the respondents (91%) owned a device. Those who did not own a device shared it with their family members, such as siblings, spouse or parents. There were relatively more female respondents (n=16) who did not own a digital device than male (n=3). A majority had either a smartphone (87%) and/or a laptop (75%). Most of the teachers reported that they owned a laptop used during school closure for online teaching. Furthermore, a large majority (91%) of the respondents had access to the Internet. Most of the respondents had cable (39.5%) or cellular Internet (37.3%). During the lockdown, the principals and teachers used the devices and the Internet for more than four hours a day (76.4%). Most of them used it to 'work from home' (80.5%) or for 'online learning' (50.2%). The most preferred online teaching and professional development platforms were 'Zoom' (62%) and 'WhatsApp' (32.3%).

Table 3 Respondents' Access to Devices and Internet

Variables		Frequency	Percentage
Personal device	Yes	201	91%
	No	19	9%
Type of Devices	Smart Phone (iPhone/ Android)	192	87%
	iPad	10	4.50%
	Tablet (Android)	12	5%
	Laptop	165	75%
	Desktop Computer	20	9%

Variables		Frequency	Percentage
Type of internet connection	Broadband	64	29.1
	DSL	19	8.6
	Cable	87	39.5
	Fiber optic	28	12.7
	Cellular (3G/4G)	82	37.3
	Wireless device	8	3.6
Time Spent on Internet use	Less than 2 hours a day	7	3.2
	Between 2 to 4 hours a day	44	20
	More than 4 hours a day	168	76.4
Preferred learning online tools	Zoom	137	62.3
	Facebook	30	13.6
	WhatsApp	71	32.3
	MS Teams	10	4.5
	Google	30	13.6
	YouTube	1	0.5
	LMS	1	0.5
Purpose of ICT(s)' use in lockdown	Online learning from home	128	58.2
	Work from Home	177	80.5
	F&F	72	32.7
	Entertainment	71	32.3
	Shopping	25	11.4
	Social Net	73	33.2
Mobile Internet	No	10	4.5
	2G	6	2.7
	3G	19	8.6
	4G	133	60.5

Adapting to the life in lockdown: School Principals/ Head teachers' Experiences

This section presents data results on school principals' experiences.

Technology Selection and Planning

"As soon as schools were closed due to COVID-19, we prepared a plan [to continue the teaching and learning processes], provided training to our teachers and went for online delivery. Initially, we utilized 'Edmodo' and 'WhatsApp' followed by 'Zoom' for online interactive classes," (M_P_Pvt_Nawabshah).

The above quote encapsulates the experiences of principals, who rapidly adopted online teaching and learning during the pandemic. The process involved developing plans and selecting technology for online teaching. Some principals

mentioned that they had no prior experience of planning for online teaching. Therefore, the first task was to research what was available, then select and purchase technology. The cost of technology was a major consideration, and many principals relied on free tools. Only one principal mentioned "safe and secure online platform" (M_P_Pvt_Karachi) as a factor to consider when selecting tools. Zoom, google classroom, Facebook, and Edmodo, where mentioned by a majority of the principals.

Involving families

There was an increase in communication between schools and families. Both private and community school principals reported that since children were studying from home, they had to make an extra effort to involve parents in children's education. In the words of one principal, the most significant

adjustment was the "… inclusion of parents in their children's learning and promoting awareness among parents for using gadgets and to assist (sic) children to take online classes" (F_P_C_Karachi). Commonly used technologies for this purpose were WhatsApp and Facebook.

Online teaching approaches

Schools used a mix of synchronous and asynchronous online teaching approaches, and the decisions were made on the availability of technology and teaching methods. Both community and private schools made provisions for students who did not have reliable access to the Internet. For instance, a community school principal shared that they opted for synchronous teaching, but the lessons were recorded and shared with the students to watch the lesson later. A principal mentioned that they had developed "learning resource packs for students and delivered [them] at their doorstep," (M_P_Pvt_Karachi). Some principals relied on sharing recorded lessons via YouTube. Principals also encouraged teachers to supplement synchronous teaching with "interactive and interesting videos" (F_P_C_Karachi) to increase motivation and engagement.

Mental health

The principals noted that the challenges of balancing professional and personal responsibilities during the lockdown led to mental health issues. They offered support to teachers and students to manage stress. They mentioned providing counseling services to teachers and students, reducing workload by trimming syllabi and flexibility in scheduling. They also identified constant communication and addressing concerns as being helpful strategies.

Curriculum changes

A small number of principals reported making changes in the curriculum and assessment, for example, assessment criteria were revised to ensure students' presence in the online classes, and their study at home: "The virtual learning, assignments and attendance is given weightage in the final result therefore students have become more regular and serious in attending the classes" (F_P_Pvt_Karachi).

Provision of ICT Support

The analysis reveals that principals had prioritized two areas of support: i) digital gadgets; ii) ICTs' skills. In relation to digital gadgets, principals stated that they had "provided high-speed internet, touch screen laptops and computers to their teachers in order to proceed with online teaching" (M_P_Pvt_Karachi). They had organized ICT skills workshops for teachers, students and parents for online teaching and learning. One principal noted that they had "provided training to teachers on the use of zoom, google classroom, Gmail, LMS, Edmodo" (F_P_Pvt_Karachi). These sessions were extended to students "To enable them to use digital modalities i.e., zoom, email, and google classroom etc," (M_P_Pvt_Karachi) and to parents "In order to realize [sic] them the use of technology for learning continuation of their children" (F_P_C_Karachi). Also, IT support services were offered to teachers, students and parents "…to address any emerging problems related to these modalities" (F_P_Pvt_Lahore) and "to resolve their connectivity issues" (M_P_C_Khairpur).

Monitoring of Teaching and Learning Process Remotely

The principals appeared to see responsibility for ensuring the quality of teaching and students' learning, and monitoring of the teaching and learning process as an essential part of their job. During the lockdown, principals reportedly found creative ways to monitor the teaching and learning process. The following quote from a principal summarizes the strategies used to monitor the quality of teaching-learning:

"As principal, I ensure to have a joint as well as individual meeting with my teachers for a detailed discussion on syllabus coverage, strategies and issues they face while being online. I do attend sessions randomly to check the teaching and learning process, engagement and progression of students. I do take a [sic] regular feedback [from] parents for improvisation in the process." (M_P_Pvt_Nawabshah)

Several respondents relied on direct observation of online classes for monitoring. In the words of principals, they were "[conducting] virtual classroom observation by joining classroom as a silent observer" (F_P_Pvt_Hyderabad) or "Attending classes randomly, followed by giving feedback to the respective teacher" (M_P_Pvt_Nawabshah). Peer-feedback was used for monitoring: "… a separate Facebook group for teachers …, where [they] [uploaded] teachers' teaching videos and the colleagues [gave] feedback" (F_P_C_Karachi). Another principal noted that they had advised the teachers "… to record and share their lesson for analysis and feedback for improvement"

(M_P_Pvt_Karachi). Principals also mentioned that they had assigned the responsibility of monitoring to the academic coordinators or section heads, who ensured that "assignments are received and returned to students with feedback" (F_P_C_Karachi). Also, LMS reports were analyzed to monitor teaching activities and students' learning progress. A few principals reported that they had involved parents in the monitoring process by "taking regular feedback of parents regarding their children['s] learning and [bringing] improvement accordingly" (F_P_Pvt_Lahore). For this purpose, phone calls, WhatsApp, parent-teacher meetings, and informal discussions were used. It is evident from the responses that principals were deeply concerned about the quality of teaching and learning during the pandemic.

Adapting to life during the lockdown: Teachers' Experiences

In this section, the experiences of teachers are analyzed and interpreted to answer the research question.

Learning to Teach Online

Most of the teachers highlighted adaptation to remote teaching-learning as a shift that was not smooth. Though it became better over time, face-to-face teaching remained the preferred mode. In the words of a teacher: "Initially we faced problems because students and teachers both have difficulty in adapting to new work situations. later it mellow [sic] down. [sic] but still face to face learning is more convenient and recommended" (F_T_Pvt_Islamabad).

The initial fear and difficulty were present because the online teaching was new and/or teachers did not have the required skills. Teachers reported that they had received training to use technologies which helped them enhance their technical skills, such as making screencasts and video-recording the lesson. However, none of the teachers mentioned receiving training to improve pedagogical skills. For some teachers, the shift to online teaching gave a sense of achievement, "Alhamdulillah [Praise be to the Almighty], in last 3-4 months, the online applications being used have developed my expertise in virtual classes but still I can further improve like the use of more software to manage many things during class at one time" (M_T_Pvt_Karachi). Teachers also noted changes in their role and the ensuing shift in teacher-learner role allocations and power dynamics: "Now it's really amazing experience to see kids involve (sic) in

teaching. The role of the teacher is now indeed facilitator only" (F_T_Pvt_Karachi), which also appeared to be a factor in this acclimatization process.

Online teaching approaches

The majority of teachers used a combination of synchronous and asynchronous modes depending on the subject being taught and the realities of the situation. They used asynchronous teaching methods to help students with limited Internet bandwidth because it was more convenient for students to watch the lesson on their own time. In the words of teachers:

● "I teach English, Math and Science. We are [sic] using a blending strategy like preparing videos on the topic as well [as] online teaching on Google classroom" (F_T_Pvt_Karachi).

● "I am making offline lessons videos for cable transmission plus study packs in hard [copy] for my students since April. The video lesson is a complete set that has objectives for formative assessment and homework" (M_T_Pvt_Chitral).

● "I have to display a video instead of a live demonstration" (F_T_Pvt_Karachi).

Challenges of Pedagogy, Access and Well-being

Teachers reported challenges related to online class management, responding to individual learning needs, online course design, teaching skills, parents' ICT literacy and students' engagement. Teachers reported infrastructure challenges such as the power supply, connectivity, Internet speed and availability of devices. The situation was worse for public schools and those in remote locations as they had no internet connection or devices. The shift to online teaching significantly increased teachers' workload. Schools also reduced teachers' salaries, contributing to mental health issues, as a private school teacher mentioned. Family responsibilities were increased during the lockdown due to extended household activities. Working in such circumstances created well-being and mental health issues for many teachers. Some of the responses are as follows:

● "I was facing the problem of weak students skipping the lectures & especially (sic) they didn't attempt their test honestly" (F_T_Pvt_Karachi).

● "I teach English and other subjects but, its very difficult to me that how am I teach online because I have no any experience or training [for] that" (M_T_Pub_Khairpur).

● "... sometimes teacher is not able to make the appropriate selection and use of modalities that can help in effective delivery of content"

(F_T_Pvt_Rawalpindi).

● "Teachers are getting exhausted day by day because of the screen time. Parents are somehow appreciative but few are frustrated as well. Power failure in most of the areas and most time of the day is spent without light. One gadget and more siblings, Etc" (F_T_Pvt_Karachi).

● "…this virtual connection has created more pressure and burden on my side as I am working 12 to 14 hours a day to prepare for my lessons and tasks in such a way that can motivate kids to come to the classroom." (F_T_C_Karachi).

Support required by principals and teachers

The data shows that principals and teachers need support to improve digital literacy, online teaching and educational management skills and ensure mental health and well-being.

The school principals identified professional development in school management and monitoring of learning, during and after the pandemic, as areas of need. They also stressed their need for support in improving online communication skills with various stakeholders (e.g., parents). One principal commented that there was a need for "mental health care tools… and tools to expand attention span" (F_P_Pvt_Karachi). Another principal asked for "support in helping find or develop adequate authentic online assessment portals for teachers" schools to use for a minimum subscription. Develop course content which would help elementary teachers teach a particular subject virtually. And then blend the lesson when things get back to normal" (F_P_Pvt_Karachi).

The teachers believed that technological literacy would be critical for their survival and to cope with future disruptions. The teachers also mentioned that they need to learn skills such as developing teaching videos and conducting online assessments. They also mentioned the need to be ready to address pedagogical challenges such as "How to make my online classes more interactive?" (F_T_PvT_Karachi). Several teachers noted the need for a work environment conducive to good mental health and well-being. One teacher commented that they need support in "How to hold on to your job?" (F_T_PvT_Karachi). One teacher from Gilgit Baltistan commented: "We need new methodologies regarding technology and blended learning" (F_T_Pvt_GB).

Both principals and teachers stressed that merely adopting technology in teaching would not be sufficient unless teachers clearly understood its use and that support was needed for the pedagogical aspects of online teaching. Additionally, teachers and principals also shared how they expect support in ensuring mental health and well-being during and after the disruption. Several principals and teachers mentioned financial challenges and expectations from the government regarding financial support to continue the teaching and learning processes. Many also highlighted the criticality of addressing infrastructure and access issues.

Discussion

The study focused on principals' and teachers' experiences during the early stages of the COVID-19 lockdown in Pakistan. Findings show that in keeping with the extant international literature on stakeholder experiences during COVID-19, stakeholders such as principals and teachers in Pakistan also had to navigate challenges. They were also successful in finding new pathways into teaching and learning. Since this study sought to identify what lessons need to be learnt regarding providing teacher education in future. Following the initial lockdown, this discussion section has two parts. It will outline the pathways that principals and teachers took to navigate around key challenges. Then, it will elaborate on the relevance of study findings for teacher education and development.

As per findings, multiple pathways appeared to have been traced out by principals and teachers during the lockdown. A point of note here: in the case of public schools, online teaching was a non-issue because government schools remained closed as per study survey responses. This seems to accord with Pakistan's Government's announced policy regarding instituting "tele-schooling" to provide mass education as an alternative (Ministry of Federal Education, 2020). Therefore, the adjustment and adaptation pathways identified in the study emerged from the responses of school principals and teachers belonging to Private schools and Community Schools (i.e., NGOs or Trust schools).

One pathway frequented by most of the respondents (approx. 70%) was the immediate or rapid conversion from in-person to online teaching and learning during the lockdown. Concord can be found between school principals' and teachers' use of this pathway in Pakistan and global research on pandemic-related disruptions. For instance, an online survey by MacIntyre, Gregersen, and Mercer (2020) on language teachers, purporting to have

used a sampling frame which effectively captured a worldwide population, had a wide-scale transition to digital learning in response to conditions imposed by the pandemic and its impact on teachers, as one of its foci. Similarly, a mixed-methods study on 365 Spanish primary and secondary school teachers reports the results of examining the impact of the conversion to online and/or remote teaching has had on teachers (Aperribai et al., 2020). Harris (2020), considering the "fault lines" within education rendered so starkly visible by COVID-19, notes that the global crisis caused by the pandemic has caused the traditional education system with all its set "contours of roles and position" (p. 321) for principals to vanish; forcing them to try and find alternatives in the virtual world. In all, the alignment between this pattern in the data and extant research suggests that school principals and teachers of institutions in the private sector in Pakistan, be they for-profit, NGOs or Trust schools, were able to adapt in the lockdown, follow global trends and comply with the UNESCO (2020) recommendation to move online.

Other examples of school leaders' pathways that surfaced in the present study data include school principals trying to facilitate online learning transition by providing training support to their teachers. Additionally, the data indicates adopting alternate pathways such as principals taking conscious stock of the gaps in their knowledge of digital learning, technology-based/enhanced teaching and learning, doing their due diligence and researching before selecting platforms such as LMS and other equipment. As per data analysis, school principals also took strategic pathways to extend the support network provided to their learners while establishing a communication network between them and the school. These pathways entailed ensuring the inclusion of parents in their children's learning. Additionally, some principals tried to find alternative pathways to address inequalities created by digital divides, such as resource packs developed for students who did not have Internet access and delivered at their doorstep. There is also evidence in school principals' data of their attempt to cater to mental health needs while attending to the quality of teaching and learning processes and work overload concerns through such pathways as using a curtailed syllabus, reduced content and limiting the number of subjects. In the present study, principals were also found to use pathways that allowed them to explore alternative ways of remotely monitoring teaching and learning's smooth progress. These

alternative ways ranged from initiating virtual classroom observation by joining the classroom as a silent observer, giving feedback to the respective teacher, using Facebook groups, peer feedback, delegating monitoring responsibilities to coordinators, and taking and communicating feedback from parents to teachers.

In addition to highlighting the kind of pathways taken by principals and teachers, these findings also appear to underscore the variance in how the digital learning needs of teachers were addressed and expectations from teachers. Some data patterns indicate that digital learning provision entailed teachers using both asynchronous and synchronous teaching modes. Other data patterns suggest some pathways involved using teaching formats that were restricted to asynchronous modes. Additionally, this variance in teaching format pathways was reflected in selecting online tools. Adopting digital learning pathways also appeared to require teachers to provide contextually responsive facilitation and support. Future studies could explore whether the use of technology during the pandemic has led to reduced resistance toward technology in education and the role teachers and principals can play in a technology-mediated world.

These reported pathways to converting to online learning correspond to research findings in other parts of the world. For instance, Schleicher (2020), in their OECD Report, draws attention to how the education of an estimated 1.54 billion children and youth in more than 185 countries in Asia, Europe, the Middle East, North America and South America has been affected by the pandemic, and how the recourse taken by educations systems, in many of these countries, has entailed requiring teachers to virtually cease all use of traditional face-to-face strategies almost overnight, and forthwith shift to, or convert to online teaching using synchronous and/or asynchronous formats/methods. Study results of teachers' preferences for online learning tools such as Zoom, WhatsApp, Google and Facebook (see Table 2) are consistent with findings from other international studies (e.g., Crawford et al., 2020; Mishra, Gupta & Shree, 2020). Teachers having to take on the responsibility of providing varied and multi-faceted support to learners and parents to facilitate adjustment to online learning, is also consistent with other studies' findings. In Aperribai et al. (2020), for instance, participants reported that the time they ended up investing to support students and their parents as part of online

learning, was so extensive as to encroach on their personal and family time. Heavy teacher time investment has also been highlighted in such studies as Schleider (2020). However, the latter presents teachers' engagement in the development of responsive solutions to learner needs, and efforts to communicate and collaborate with parents in the OECD Report on educational responses during the COVID-19 crisis, as a positive opportunity and aspirational outcome.

Study findings about teacher experiences indicate a kind of acclimatization period as teachers worked towards adjusting to this new normal. This acclimatization appeared, in addition, to be linked to teachers' perceived growing ease with and the resulting extension of skills in engaging with digital teaching and learning. Some consonance can be found regarding the acclimatization period that teacher respondents in this study appeared to experience and the current literature. Mishra et al.'s (2020) mixed-methods study on online teaching in higher education in India found that study participants (i.e., teachers and students) reported experiencing and advocating for the factoring of an adjustment period to online learning. Furthermore, in Mishra et al.'s study, teacher participants reportedly emphasized that online learning required patience, increased familiarity, and enhanced digital literacy and knowledge and training. There was also an indication that acceptance of the usefulness and viability of online learning and teachers' self-motivation played a crucial role in this adjustment (Mishra et al., 2020).

The findings on the need to acclimate to online learning in the present study are also consistent with educational change literature (e.g., Fullan, 2001). Change necessitates a period of adjustment, and acceptance of the change has been found to affect change implementation. These findings also appear to link with the literature on teacher resilience (see Day, 2017). Teacher resilience is evidence of teachers' capacity to cope with rapid fluctuations and alterations in their teaching context and find the wherewithal, be it cognitive or emotional/psychological, to adjust and achieve functionality in the most challenging circumstances. In effect, findings on the acclimatization process also indicate that teachers working in the private sector in Pakistan did possess the resilience needed to acclimate to the abrupt digital learning conversion. These findings also underscore the importance of teacher resilience for acclimating

and adapting to the responsive changes and adopting pathways that a crisis such as the COVID-19 lockdown requires.

As Harris (2020) rightly makes note, the crisis, and its wrecking of the world order and the upending of educational systems left school leaders scrambling for purchase, as all structures, systems, and settings, which traditionally allowed them to forge relationships and enact their leadership roles, were rendered inaccessible in one fell sweep. Drawing on Kuhn's (2012) work on "paradigm shifts", Harris (2020) goes on to identify that finding such purchase entails school leaders working systematically towards ensuring there is "forward momentum" (p.322) even as they accept that given the unknowns in this undertaking, there may be missteps. Findings from the school principals of this study suggest that school leaders belonging to institutions in the private sector did appear to focus on pathways that offered them this forward momentum. The responses all emphasized the principal and the school management's efforts to find alternatives/pathways that facilitated teaching and learning processes despite the chaos created by abrupt school closures. The choice, as discussed earlier, to adopt digital learning, as per most responses from principals and teachers alike, is an example of this.

In all, the study findings have several implications for teacher education. They draw our attention to technological, sociocultural and other contextual issues that are likely to affect teacher education programs, both pre-service and in-service, beyond the disruption phase (Carrillo & Flores, 2020). This renewed urgency to prepare our teachers and educational leaders for a rapidly changing and more disruptive world calls for "a holistic vision and commitment to the resilient transformation of education and learning for the most marginalized" (Unwin et al., 2020). Preparing teachers for accelerated change in teaching and learning requires providing them with a breadth of skills and specialized knowledge. This would mean that teacher education programs should focus on teachers' holistic development and well-being, sequencing and pacing curriculum for disruptions, ensuring appropriate pedagogies and wise use of technology in education for disruptive times. Similarly, educational management programs will need to revisit the existing offerings and update those with need-based, contextually relevant strategic response ideation and planning imbued

with humanistic engagement, inclusivity, and flexibility. Moreover, a national-level study of the Pakistani public and private schools to determine the macro and micro status of education during this pandemic and its impact emerges as a future action imperative. This national-level study would allow for devising contextually- responsive facilitation for innovative approaches to mass school closures that prioritize inclusivity, appropriate use of technology with varying modalities, and support for principals and schoolteachers and the importance of creating communities that facilitate learning.

Conclusion

The contemporary Pakistani educational landscape was, as evidenced by this study, hewn by multifaceted challenges and concerns during the COVID-19 pandemic. The key players, school teachers and principals, highlighted educational issues, including social and mental health aftermaths. The study findings appear to foreground that school teachers and principals successfully explored alternative and strategic pathways to adapting to educational needs in the lockdown. This adaptation to life in the lockdown followed transition and acceptance to change, adjustment and implementation of the changed contextually responsive pathways. However, given the continued disruption due to the second wave

and possibly consequent waves as are witnessed worldwide, it is vital that we learn from the initial COVID-19 educational response.

This study highlighted the existing educational inequities between public and private schools, where those belonging to the former suffered extensive learning loss, while the latter forged on via evolving digital learning and minimized learning loss. The study underscores the importance of re-examining resource allocations to support schools to ensure all students have access to resources, especially technology, and the need to prepare school leaders and teachers to cope with disruptions and create support mechanisms for them to avail during such disruptions. Moreover, cross-pollination of successful pathways tried out by private schools may benefit the larger but least privileged public schools. In the short term, however, it may be prudent for the teacher education and educational leadership programmes to both recognise and tap into the neighboring schools' capacities, forming partnerships to seek solutions to issues that unfairly impact the more vulnerable. More precisely, the response from teacher education and educational leadership programmes must be to provide immediate and relevant support to school principals and teachers.

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