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INVESTIGATING COMMUNICATION CHALLENGES IN ONLINE EDUCATION AT HIGHER EDUCATION IN PUNJAB

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KEYWORDS	ABSTRACT
Online Education, Communication Challenges, Student Engagement, Assessment, Digital Pedagogy	This study investigates the communication challenges faced by teachers in online education at higher education level in Punjab. It was a quantitative study with descriptive survey design. Data were collected through a survey from 75 conveniently selected teachers across colleges & institutions using a self-developed five-point rating scale. The findings reveal that significant proportion of teachers experienced high levels of social isolation (32.3%), weak interaction with students (41.9%), lack of student motivation (47.3%), and difficulties in conceptual learning (57%) and assessment (63.4%). Also, the analysis showed differences based upon gender, location (urban/rural), and IT skills. The study underlines the difficulties faced in online teaching, emphasizing the need for directed interventions to increase teachers' digital pedagogy, develop meaningful student engagement and adopt assessment-related issues. It highlights importance of implementing a hybrid teaching-learning approach by associated online classes with traditional methods to moderate the identified challenges. It is recommended to focus on teachers' digital pedagogy, technological proficiency, as well as strategies to develop students' engagement.
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INTRODUCTION

The rapid evolution of technology education has enabled new modes of learning that transcend traditional classroom boundaries (Greenhow, Lewin & Willet, 2023). It allows for new methods of learning that go beyond the classroom (Means, Bakia & Murphy, 2014). The online education has become a major force in education, moving out of the domain of early adopters and into mainstream, in part due to rapid expansion in the COVID-19 pandemic necessitating remote learning (Hodges &

Fowler, 2020). Another population that had limited its potential market for years is now reaching close to its full potential in part due to an unexpected occurrence that forced many to adopt new models of education almost overnight. Its advantages include its extreme flexibility, ease of use, and cost-effectiveness. These advantages, however, pose challenges for students and instructors alike in terms of issues of engagement and motivation (Baran, Correia & Thompson, 2013). Within realm of higher education, shift to online instruction has deeply disrupted time-honored pedagogies which forces academician to convert their teaching methods to virtual context (Martin, Sun & Westine, 2020). Thus, a daunting task brought up by educators is impediments to communication raised in virtual presentations.

Successful teaching and learning would always need sustainable communication, any disturbance in it would drastically affect students' motivations, understandings, and achievements (Gyampoh, Ayitey, Ayarkwah, Akossah, Gavor & Vlachopoulos, 2020). Thus, balancing the synchronous and asynchronous communication provides another challenge. Innovative solutions are needed to find efficient ways to get students talking about important topics and create a collaborative learning environment. Despite these barriers, teacher can overcome difficulties of secondary online learning by realizing interactive tools, changing communication tactics, and inspiring active involvement (Toquero, 2020). Online learning has emerged as a competitive option. When COVID-19 pandemic struck, virus's ability to spread among students through online learning halted. Online resources must be accessible to both educators and students. claims that the COVID-19 epidemic has forced changes in basic policy to force education institutions to do remote learning over online classrooms & that online learning is highly useful medium of learning to solve these issues (Rasmitadila et al., 2020). By making efficient use of their time, online learning helps students become more dedicated to their educations.

The online education may boost self-esteem, lower stress levels, and foster greater empathy and compassion. Since the students do not fully comprehend the contents of online learning modules, there are some issues with the production of the material for online learning (Bovill, 2020). On the other hand, because classes may be organized with visual aids to engage the learning process, the teacher community considers online teaching and learning process to be particularly participatory. The positive feedback from the management of educational institutions to all stakeholders is also necessary to enhance the caliber of the teaching and learning process (Raju, 2021). Based on both good and negative feedback, an institute's rating could range from lower to higher points that play a significant role in communication (Shah & Cheng, 2019). Measuring the institutional progress requires concentrating on the amount of knowledge taught to students. The organizational culture, along with concepts and a high-quality structure, creates a path for pupils to become extremely efficient in the future (Pace, Pettit & Barker, 2020). Consequently, this research has the primary objective of providing the insights into 'teacher-user' communication challenges in online higher education in Punjab.

The identification and evaluation of these challenges are aimed at suggesting strategies/placebos for mitigating them to enhance online teaching and learning. At the core, the research believes that in higher education meaningful education necessitates meaningful communication; however,

this meaningfulness in communication might not be achieved if the associated challenges are not meticulously addressed. Poor internet connectivity, software glitches, and hardware malfunctions can disrupt communication during online classes or discussions. These technical challenges can hinder students' ability to participate fully and engage with course material. Building relationship and establishing rapport with instructors and peers can be challenging in online settings compared to face-to-face interactions as required in different circumstances for diverse outcomes. Therefore, in essence, a lot is spoken of democratizing online education and making teaching-learning open and welcoming but very little cognizance is taken of the intensive interdisciplinary educational practices that are necessary to fulfill the stated purposes. It is, very clearly, in the context of making higher online education democratized, accessible, equitable, and fruitful for diverse backgrounds as well as contexts.

Objectives of Study

1. To identify the communication challenges as faced by higher education teachers in context of online education.
2. To examine impact of factors (gender, location & IT proficiency) on communication faced by online teachers.

LITERATURE REVIEW

Online education has been a hot topic in academic discussion, especially after pandemic outbreak of COVID-19 (Corona Virus Disease 2019). It can be seen globally that almost all the educational institutions adopt this method to make all the activities in teaching and learning continue. Online education has a few advantages that make this method preferable. Means et al. (2014) mention the flexibility, ease of access geographical independence, and cost-effectiveness. However, because this method is implemented at a distance where all the activities between teacher and students are run online. Therefore, there must be a problem in their communication that has been considered as vital element for the online education. Communication plays an important role in successful online teaching and learning. Effective communication is vital for educational settings. It is an essential tool to convey the knowledge, exchange ideas, and promote understanding (Vlachopoulos, 2011). In traditional classrooms, multiple ways of communication are used such as verbal conversations, body language, and social interactions to enhance classroom communication activities. However, these communication paths could be blocked in the online environment, which could be a hurdle in the learning process.

One of the biggest hurdles to overcome in the online learning environment is the loss of nonverbal communication cues (Borup et al., 2011). In a traditional classroom setting, instructors often rely on nonverbal cues such as body language, facial expressions, and other forms of nonverbal feedback to gauge student understanding, interest, and overall reception of the material being covered. These cues provide real-time feedback loop to instructor about student performance, enabling instructors to tailor their instruction accordingly. In virtual environment, however, these nonverbal cues are often diminished/absent, making it more difficult for the instructor to assess student understanding and individualize instruction (Lowenthal et al., 2020). Another major issue regarding the online education is its feasibility to result in a feeling of isolation for both educators and learners in the

course of the teaching and learning process. Not being present physically and non-spontaneous social interaction can deride teacher-student rapport, which is one of the learning conditions in which meaningful learning happens. Besides, such a feeling of isolation can be intensified by some technical problems like having no stable internet connection and compatibility of the system, and in turn, communication flow and teaching-learning activities face crucial breakdown (Muilenburg & Berge, 2005).

Several studies have addressed strategies and interventions that could ease these communication challenges. Among these studies, asynchronous video communication has been explored as a tool to enhance instructor immediacy and social presence (Borup et al., 2011). The use of interactive tools and communication strategies to strengthen the level of involvement and active participation from the learners (Toquero, 2020). Another study underlined the necessity of professional development programs to upskill teachers' technology competence and digital pedagogy (Baran et al., 2013). Also, institutional support and effective communication strategies at organizational level operate as important factors for the implementation of online educational programs and delivery processes (Pace et al., 2020). Consequently, developing the strong organizational culture that values, open communications, collaboration in problem-solving approaches, and continuous improvement can tackle obstacles that an online teaching and learning context poses to instructors and learners. In a study by Markus and Brainin (2020), authors used a qualitative method to find out what learners thought about online learning during COVID-19 pandemic. He used the WhatsApp app to conduct systematic interviews.

According to research, several obstacles face students taking online courses, including inadequate internet connectivity and a dearth of available technology. This study demonstrates that students' curiosity about the voice notes that were provided to explain the study material was high. In the Pakistani context several studies have been conducted related to online teaching as elementary teachers and university students' perspectives on online teaching in COVID-19 (Arshad et al., 2022; Zafar et al., 2022); teachers' practices in the online teaching (Jamil et al., 2022); in-service teachers' beliefs about online teaching (Hani et al., 2021); self-efficacy beliefs of pre-service teachers about online education (Naz et al., 2020). In the same way, studies about challenges have been conducted in the Pakistani context as challenges of primary school heads about instructional supervision (Arif et al., 2023); assessment challenges faced in technical vocational education (Pirzada et al., 2022); challenges in learning (Iqbal et al., 2022); challenges of novice public school teachers (Saleem et al., 2020; Saleem, Muhammad, & Masood, 2021; Saleem, Muhammad, & Qureshi, 2021); challenges faced by students with low vision (Khalid et al., 2021); and challenges faced by concerned principals (Aman et al., 2021).

RESEARCH METHODOLOGY

To ensure the continued success of online education, which is quickly becoming an important facet of higher education, challenges of communication must be overcome. With persistent investigation into the topic, the application of scholarly methods, and the reinforcement of an inviting company atmosphere, academic institutions can work to resolve the difficulties of the online education. A quantitative survey research design was used in this study to explore communication challenges

faced by teachers in online education at the higher education level in Punjab. Survey research is a prevalent approach in educational studies to collect data systematically from a sample to identify trends and patterns (Creswell & Creswell, 2017). The teachers who were actively engaged in online teaching at the colleges and universities in Punjab were selected as the sample of the current study (Etikan et al., 2016).

The sample of the study consisted of 75 participants who were conveniently selected. Convenient sampling is a non-probability sampling technique. In this technique, easy-to-reach study subjects are selected (Etikan et al., 2016). In this research, convenient sampling technique was used because it was quick, cost-effective, and convenient due to time and resource constraints of the researchers. Information was collected by self-developed questionnaire made with literature and consulted with some experts in online education. The questionnaire concluded on a 5-point rating scale with strongly agree to strongly disagree. Data was collected using descriptive statistics like frequencies, percentages, means, and standard deviations to create a comprehensive summary of distribution of reactions through SPSS software. Inferential statistical analysis was carried out to examine whether there are any differences in communication challenges when consider factors like gender, location, and IT proficiency.

RESULTS OF STUDY

Table 1 Challenges Faced by Teachers While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social Isolation	26	28.0	37	39.8	30	32.3
Weak Interaction	34	36.6	20	21.5	39	41.9
No Motivation	27	29.0	22	23.7	44	47.3
Weakness In Conceptual Learning	21	22.6	19	20.4	53	57.0
No Practical Knowledge	35	37.6	21	22.6	37	39.8
Assessment Problems	10	10.8	24	25.8	59	63.4

The difficulties that instructors face when teaching online are broken down into three categories in Table 1: Low, Moderate, and High. A glimpse of experiences of 75 teachers is provided by data that is being presented, which is based on their responses. Issue of social isolation is one that many face; according to 32.3% of teachers, social isolation has a major negative influence on their wellbeing. Notable is also the weak interaction, as 41.9% of respondents said it is very difficult to encourage meaningful involvement with students. There are motivational problems as 47.3% of teachers are very concerned about student lack of enthusiasm. Also, significant 57.0% report having significant issues with conceptual learning, indicating that they have trouble explaining complicated subjects in an online setting. 63.4% of teachers say that assessment problems are very challenging. This highlights the necessity of developing practical solutions to deal with assessment-related problems in context of online learning. Data that presented and examined using descriptive statistics offers insightful information about many difficulties that instructors of online courses encounter. The total online teaching experience can be improved by employing focused interventions & enhancements based on findings.

Table 2 Challenges Faced by Male Teachers While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social Isolation	16	29.6	21	38.9	17	31.5
Weak Interaction	12	22.2	10	18.5	32	59.3
No Motivation	11	20.4	13	24.1	30	55.6
Weakness In Conceptual Learning	16	29.6	3	5.6	35	64.8
No Practical Knowledge	17	31.5	17	31.5	20	37.0
Assessment Problems	6	11.1	18	33.3	30	55.6

Table 2 examines challenges faced by male teachers in online teaching according to three levels: low, moderate, and high. There is a huge issue of social isolation where 31.5% of male teachers suffer through severe isolation. Weak interaction has great prominence, as 59.3% of males confess, they suffer from weak interaction, leading to less interaction to learners in remote learning environment. It is obvious that male teachers face great difficulty in inspiring students, 55.6% of male teachers express subjects looking into lack of motivation. Male teachers face huge challenge for conceptual learning. 64.8% of male teachers, it is difficult to explain complex ideas effectively since lecture sessions operate online. The coherent pattern shown that signifies declining health of male teachers during online learning.

Table 3 Challenges Faced by Female Teachers While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social Isolation	10	25.6	16	41.0	13	33.3
Weak Interaction	22	56.4	10	25.6	7	17.9
No Motivation	16	41.0	9	23.1	14	35.9
Weakness In Conceptual Learning	5	12.8	16	41.0	18	46.2
No Practical Knowledge	18	46.2	4	10.3	17	43.6
Assessment Problems	4	10.3	6	15.4	29	74.4

Female teachers in online classes face unique challenges, as Table shows difficulties in low, middle, and high levels at which the respondents categorized data. One challenge that stands out is social isolation; 33.3% of female teachers mark off a high level of social isolation. Weak interaction is a similar challenge; 17.9% of female teachers report a high level, suggesting many obstacles when trying to meaningfully engage the students within the virtual platform. Motivational concern is also an evident challenge; 35.9% of female teachers say that they worry a great deal about student motivation. Weakness in concept learning rounds out as a top challenge; 46.2% of female teachers have marked off a high level of difficulty in trying to present complex ideas in an effective way in the online teaching environment. Assessment problems have risen significantly, with 74.4% of female teachers experiencing high difficulties in this aspect. This aspect underscores the specific gender differences in challenge level of female teachers in online teaching and points to specific areas that can be targeted for support and intervention, making the teaching experience of female teachers further improve.

Table 4 Challenges Faced by Urban Teachers While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social Isolation	18	29.0	26	41.9	18	29.0
Weak Interaction	22	35.5	14	22.6	26	41.9
No Motivation	20	32.3	11	17.7	31	50.0
Weakness In Conceptual Learning	16	25.8	13	21.0	33	53.2
No Practical Knowledge	19	30.6	18	29.0	25	40.3
Assessment Problems	6	9.7	12	19.4	44	71.0

Within Table 4, the difficulties experienced by urban teachers undertaking the online courses are communicated into subgroups that are deemed as low, moderate, and high. Urban teachers' replies provided facts about their internet teaching experience that served as equation for their distinctive experiences. Social isolation veneers as a specified challenge as 29.0% of urban teachers face a high value. A weak interaction is also important for our attention, which marks 41.9% of urban teachers encountered weak interaction, which reveals the challenges of meaningful interactions and encouragement of the virtual students. Motivational issues are evident, with 50.0% expressing a high level of concern about student motivation. A significant obstacle that affects 53.2% of urban teachers is weak conceptual learning, which highlight difficulty of properly communicating complex concepts in online learning environment. Particularly common are issues with assessment; 71.0% of the urban instructors' report having significant difficulties in this area. This information shows unique difficulties faced by urban teachers when instructing students virtually, highlighting possible areas for focused assistance and interventions to improve their efficacy as educators in the digital sphere.

Table 5 Challenges Faced by Rural Teachers While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social Isolation	8	25.8	11	35.5	12	38.7
Weak Interaction	12	38.7	6	19.4	13	41.9
No Motivation	7	22.6	11	35.5	13	41.9
Weakness In Conceptual Learning	5	16.1	6	19.4	20	64.5
No Practical Knowledge	16	51.6	3	9.7	12	38.7
Assessment Problems	4	12.9	12	38.7	15	48.4

Table 5 lists the difficulties that rural educators encounter when teaching online, categorized into three categories: low, moderate, & high. The information, which came from rural instructors' survey replies, sheds light on particulars of their experiences teaching online. Among teachers in remote areas, social isolation is a significant difficulty that 38.7% of them face to a high degree. Moreover, weak interaction is significant, affecting 41.9%, suggesting difficulties in promoting meaningful contact with pupils in online environment. Motivational issues are evident, with 41.9% expressing a high level of concern about student motivation. Weakness in conceptual learning is a substantial challenge, affecting 64.5% of rural teachers, suggesting difficulties in well conveying complex concepts in online teaching environment. Assessment problems are particularly pronounced, with

48.4% of rural teachers facing high challenges. This data underscores specific challenges met by rural teachers during online teaching, emphasizing potential areas for the targeted support and interventions to enhance their teaching effectiveness in digital landscape, which may differ from their urban counterparts.

Table 6 Challenges Faced by Teachers Having Weak IT Skills While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social Isolation	3	21.4	7	50.0	4	28.6
Weak Interaction	4	28.6	3	21.4	7	50.0
No Motivation	4	28.6	5	35.7	5	35.7
Weakness In Conceptual Learning	4	28.6	5	35.7	5	35.7
No Practical Knowledge	2	14.3	1	7.1	11	78.6
Assessment Problems	1	7.1	2	14.3	11	78.6

Table 6 describes the challenges faced by teachers with weak IT skills in context of online classes, categorized into Low, Moderate, and High levels. The data, gathered from the responses of teachers with limited IT proficiency within the survey, offers insights into the specific hurdles they encounter in the online teaching environment. A notable barrier is social isolation, for 28.6% of teachers with little IT proficiency suffer from very extensive isolation. Interaction weakness is stated, for 50.0% face substantial interaction weakness, indicating difficulty in promoting substantial engagement with students in the online environment. There are motivation problems, for 35.7% of respondents presented worries about their students' motivation. In this linking, one key obstacle is conceptual learning weakness, for 35.7% of teachers with poor IT skills, indicated by problems in significantly communicating the intricate concepts in the online learning context. Remarkably, there are major obstacles towards the assessment; 78.6% of teachers with the little IT proficiency view them as substantial obstacles.

Table 7 Challenges Faced by Teachers Having IT Skills While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social Isolation	23	31.1	29	39.2	22	29.7
Weak Interaction	27	36.5	17	23.0	30	40.5
No Motivation	23	31.1	13	17.6	38	51.4
Weakness In Conceptual Learning	17	23.0	12	16.2	45	60.8
No Practical Knowledge	31	41.9	18	24.3	25	33.8
Assessment Problems	9	12.2	20	27.0	45	60.8

In Table 7, the data is shown in low, medium, and high columns with the problems that those with a "mild" IT skill level are meeting as they teach classes online. Using the responses of instructors with a mild level of IT expertise in the survey, this table shows what problems this group is running across as they teach online. At a 29.7 % rate, the social isolation with instructors with a mild IT skill level at a high level is a problem. Notable weak interaction affects 40.5% of the students, suggesting difficulties in creating meaningful contact with them in a virtual environment. There are problems

with motivation since 51.4% of respondents expressed serious concerns about students' motivation. A significant obstacle is conceptual learning weakness, that affects 60.8% of teachers with modest IT proficiency. This suggests that it can be challenging to effectively communicate complicated concepts in an online learning environment. It's interesting to note that the assessment issues are widespread; 60.8% of teachers with modest IT proficiency report having significant difficulties. To improve their digital proficiency and efficacy of online instruction, teachers with modest IT skills may benefit from focused support and interventions, since this research highlights complex hurdles that they confront.

Table 8 Challenges Faced by Teachers Having Good IT Skills While Teaching in Online Classes

Challenges	Low		Moderate		High	
	N	%	N	%	N	%
Social isolation	0	0	1	20.0	4	80.0
Weak interaction	3	60.0	0	0	2	40.0
No motivation	0	0	4	80.0	1	20.0
Weakness in conceptual learning	0	0	2	40.0	3	60.0
No practical knowledge	2	40.0	2	40.0	1	20.0
Assessment problems	0	0	2	40.0	3	60.0

Table 8 lists difficulties, broken down into three categories (low, moderate, and high), that professors with strong IT backgrounds encounter when instructing online. The information gathered from the survey responses of teachers who are highly proficient in IT provides an understanding of particular difficulties faced by this group in the context of online learning. The most common difficulty is social isolation, which affects 80.0% of instructors with strong IT proficiency. A notable finding is 40.0% impact of weak interaction, that suggests difficulties in promoting meaningful engagement with pupils in the virtual environment. There are motivational problems, as 80.0% of respondents expressed serious concerns regarding the students' motivation. 60.0% of teachers with strong IT abilities report that the conceptual learning is weak, which is a significant difficulty that suggests challenges in properly communicating complex concepts in an online learning environment. The evaluation issues are severe; among teachers with strong IT abilities, 60.0% report significant obstacles. This research stresses potential areas for focused support and interventions to improve the overall efficacy of online teaching by teachers with excellent IT abilities, especially in alleviating social isolation and fostering student involvement. It also sheds insight into the complex issues faced by these teachers.

Findings of Study
1. A remarkable impact on teachers' general well-being is indicated by the high level of social isolation that 32.3% of them report experiencing.
2. The weak interaction is observed among teachers, with 41.9% facing high level of challenge, reflecting difficulties in fostering the meaningful engagement with students in the virtual environment.
3. Motivational issues are apparent, as 47.3% of teachers express a high level of the concern regarding the lack of student motivation.

4. A substantial 57.0% of the teachers report facing high challenges related to weakness in conceptual learning, suggesting difficulties in conveying complex topics effectively in the online environment.
5. Assessment problems stand out, with 63.4% of teachers indicating a high level of challenge, emphasizing the need for effective strategies to address the assessment issues in the online teaching landscape.
6. Teachers exhibit varying levels of practical knowledge, with 37.6% facing a high challenge, potentially impacting their ability to apply real-world scenarios in online teaching.
7. While challenges are generally shared, further nuances emerge when considering gender-specific experiences, as reflected in subsequent tables (Table 2 and Table 3).
8. The findings underscore the multifaceted challenges faced by teachers in the online classes, emphasizing the need for targeted interventions and improvements to enhance the overall online teaching experience.

DISCUSSION

The results of this investigation clarify the many-sided correspondence difficulties faced by teachers of Punjab in online education. The information uncovered a few sensational examples and refinements that require additional examination and vital mediations, affirming past examinations about the intricacies of online instructing learning (Means et al., 2014; Vlachopoulos, 2011). As considerable proportions (32.3 %) of participants, many teachers have a strong sense of separation from conventional classroom settings and their students who stay in far positions. This negative situation can create terrible implications for teaching and knowledge. Lack of social contact can diminish motivation, and engagement and create the weak educator-student bonding, therefore, negatively affecting knowledge delivery and academic development (Martin et al., 2020). Also, the results underscore the ongoing problem of limited teacher-student interaction in the online environment. A major 41.9% of respondents expressed that they faced considerable difficulty in promoting substantive communication with the students. This is particularly problematic because active engagement and dynamic discourse are fundamental elements of effective learning process (Borup et al., 2011).

Absent robust interaction conduits, pupils may grow alienated and his or her motivation may fall, thereby causing problems with understanding. Poor academic performance is, at last, the likely upshot (Lowenthal et al., 2020). Data in Table 7 presents low, medium, and high and details the difficulties encountered by teacher who has a medium the education for teaching online courses. Following the survey responses by the teachers who have moderate education, the table offers what kind of specific difficulty faced by this group in teaching online courses. Social isolation in this group is a very anxious condition, as 29.7% of teachers have moderate IT ability and report a high level of social isolation. Furthermore, this study provides insights into the problems that teachers have encountered while facilitating conceptual understanding in online learning. Over half of the teachers recognized that they met significant challenges in terms of communicating the complex concepts to students from 57%. This finding is alarming if taking into consideration that conceptual understanding is essential element of higher education. It lies in the basis of advanced knowledge

acquisition along with problem-solving and critical thinking skills. Critical thinking skills have been focused on recent Pakistani studies regarding different contexts due to a significant twenty-first-century skill.

For example, different studies have been conducted in this regard like developing CT in English classrooms (Jamil et al., 2024); document analysis for Physics, Chemistry, Biology, and mathematics regarding CT (Jamil, Bokhari, & Iqbal, 2024; Jamil, Bokhari, & Rafiq, 2024; Jamil, Bokhari, & Zia, 2024; Jamil, Hafeez, et al., 2024; Naseer et al., 2022); textbook analysis for critical thinking skills development in Physics, Chemistry, Biology (Jamil, Bokhari, & Ahmad, 2024; Jamil et al., 2024; Jamil, 2024); science teacher perspective and practices about critical thinking (Jamil, 2021; Jamil et al., 2023; Jamil & Muhammad, 2019; Jamil et al., 2021; Muhammad & Qureshi, 2021). Failing to effectively deliver and reinforce conceptual knowledge may have great consequences on students' achievements in college and learning further. Results indicate substantial difficulties associated with the assessment, which is a major issue in online education and 92% of all education teachers reported that they have a hard time doing it (Baran et al., 2013). There are differences and challenges amid online and onsite assessment. Online assessment is not only alternative to onsite assessment and gets students' knowledge but tests whether students meet the final goal of strength, weakness & lack of knowledge in learning or not, assessment problems still exist in virtual education for several reasons.

All of them limit how teachers can evaluate students through online classrooms. One obstacle to conducting assessment right now evaluation in online realm is the challenge. Furthermore, ensuring academic integrity in the online environment is not easy. Lastly, the teachers have every problem giving feedback exactly and helpfully to students online. Although shared by all respondents in the survey, study's results also show differentiated nuances in difficulties depending on variables such as gender, location (urban/rural), and IT skills. For example, male teachers and those from rural areas suffered more frustrations of social isolation, weak interaction, and conceptual learning than their counterparts. This result chiefly matches (Muilenburg & Berge, 2005; Shah & Cheng, 2019) research findings on digital divide in online teaching. Meanwhile, in various cases such as problems in assessment or lack of the practical knowledge, teachers without strong IT skills shared a more pronounced group of inconveniences, pointing out that digital literacy or technological capability is fundamental requirement of online teaching. Importance of individualized and specific support services to meet the unique demands and oppositions of different subsections of the online teaching community cannot be overstated. Personalities negatively affect educators from many background and experiences and a "cure-all" will not neutralize manifold communication barriers (Pace et al., 2020; Raju, 2021).

CONCLUSION

This research brings to light the multiple barriers teachers face when navigating online classroom. From the overwhelming sense of social isolation and sterile and impersonal communication with students to the challenges in cultivating conceptual learning and robust assessment practices. The obstacles encompass multiple domains and pervasively influence online educational experience. It is worth noting that a large number of teachers (32.3%) were found to be highly socially isolated,

with indisputably arguably harmful implications not only for stress and overall well-being but also for the capacity to form authentic relationships with students. Perhaps more troubling is that 41.9% of respondents indicated that they had substantial difficulty promoting genuine exchanges that are, unequivocally, without doubt, one of the central building blocks of constructive teaching and learning. These findings assertively endorse the importance of creating digital communities and collaborative spaces that foster meaningful engagement, shared understanding, and supportive alliances amid teachers and students. Also noted was prevailing problem of students' motivation, about 47.3% of teachers who ranked highly worried about this issue. Motivation is force to win in academia, without which students could feel uninterested, incompetent, and exposed to insufficient academic attainments.

Assessment is a critical tool for teachers to evaluate students' knowledge, give students feedback, and know where students need help. To conquer this difficulty requires a combination of actions including use of personalized assistance programs, adaptive learning software, and breakthrough inspiration courses prone to demands of a specific student. Furthermore, the results showed notable problems with conceptual learning and assessment in virtual setup. As many as 57% of professors found it very difficult to communicate complex concepts meaningfully, & 63.4% largely struggled with evaluation. These obstacles are particularly concerning, as they undermine basis of education and evaluation in higher education. To tackle the above-mentioned challenges, institutions should invest in developing teachers' skills, familiarize them with advanced learning platforms, & provide them with efficient instruments as well as strategies to exploit those media. The assessment methods need to be adjusted specifically to online education. As it is observed, these difficulties manifested broadly across survey participants, though, we found more localized valences as per gender, location (urban/rural), and IT skills. These valences emphasize necessity for targeted interventions and frameworks of support that reflect particularities and peculiarities inherent to subgroups that constitute online teachers.

Recommendations

1. Address the identified challenges, particularly the weak interaction, conceptual learning difficulties, and assessment problems, through targeted professional development programs. These programs should focus on enhancing the teachers' digital pedagogy, technological proficiency, and strategies for fostering the meaningful student engagement in the virtual environment.

2. Create a supportive online community for teachers to share experiences, strategies, and resources. This community can serve as platform for concerted problem-solving, knowledge exchange, and emotional support, mitigating the impact of social isolation and providing a space for addressing motivational concerns.

3. Recognize nuanced challenges faced by different groups, like gender-specific experiences and varying levels of practical knowledge. Tailor interventions and support mechanisms, accordingly, ensure that unique needs of each subgroup are addressed effectively to create an inclusive and supportive online teaching environment.

REFERENCES

Aman, Y., Muhammad, Y., & Batool, T. (2021). Practicing Instructional and Transformational Leadership: Challenges Faced by Female Principals in Public Colleges in Lahore. *Research Journal of Social Sciences and Economics Review*, 2(3), 89-98.

Arif, R., Jamil, M., & Naseer, B. (2023). Challenges of Instructional Supervision Faced by Primary School Heads. *Pakistan JL Analysis & Wisdom*, 2, 189.

Arshad, A., Muhammad, Y., & Waqar, Y. (2022). Elementary school teachers' lived experiences in online teaching during covid-19 pandemic. *Asian Social Studies and Applied Research*, 3(2), 223-233.

Baran, E., Correia, A.-P., & Thompson, A. D. (2013). Tracing successful online teaching in higher education: Voices of exemplary online teachers. *Teachers College Record*, 115(3), 1-41.

Borup, J., Graham, C. R., & Velasquez, A. (2011). The use of asynchronous video communication to improve instructor immediacy and social presence in a blended learning environment. In Blended learning across disciplines: Models for implementation (pp. 38-57). IGI Global.

Bovill, C. (2020). Co-creation in learning and teaching: the case for a whole-class approach in higher education. *Higher education*, 79(6), 1023-1037.

Creswell, J. W., & Creswell, J. D. (2017). Research design: Qualitative, quantitative, and mixed methods approach. *Sage publications*.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4.

Greenhow, C., Lewin, C., & Willet, B. (2023). Teachers without borders: professional learning spanning social media, place, and time. *Learning, Media and Technology*, 48(4), 666-684.

Gyampoh, A. O., Ayitey, H. K., Ayarkwah, C., Akossah, J., Gavor, M., & Vlachopoulos, D. (2020). Tutor perception on personal and institutional preparedness for online teaching-learning during the COVID-19 crisis: The case of Ghanaian Colleges of Education. *African Educational Research Journal*, 8(3), 511-518.

Hani, U., Naz, M., & Muhammad, Y. (2021). Exploring in-service teachers' self-efficacy beliefs regarding online teaching: *Global Educational Studies Review*, 6(2), 92-104.

Hodges, C. B., & Fowler, D. J. (2020). The COVID-19 crisis and faculty members in higher education: from emergency remote teaching to better teaching through reflection. *International Journal of Multidisciplinary Perspectives in Higher Education*, 5(1), 118-122.

Iqbal, H., Muhammad, Y., & Waqar, Y. (2022). Challenges in learning to design constructively aligned courses: Evidence from two case studies. *International Review of Basic and Applied Sciences*, 10(2), 182-191.

Jamil, M. (2021). An analysis of education policy and science teachers' practices for developing critical thinking skills in secondary school students, [PhD dissertation, University of Management and Technology, Lahore, Pakistan].

Jamil, M., Anwar, M., & Ali, M. J. (2024). Developing critical thinking skills in English classrooms at the secondary level. *Journal of Social Sciences Development*, 3(1), 76-85.

Jamil, M., Bokhari, T. B., & Ahmad, D. (2024). Evaluation of Critical Thinking Elements: A Qualitative Content Analysis of Physics Textbook Grade IX. *Qlantic Journal of Social Sciences*, 5(1), 344-350.

Jamil, M., Bokhari, T. B., & Iqbal, J. (2024). Incorporation of critical thinking skills development: A case of mathematics curriculum for grades I-XII. *Journal of Asian Development Studies*, 13(1), 375-382.

Jamil, M., Bokhari, T. B., & Rafiq, M. (2024). Critical thinking skills development for 21st century: An analysis of Biology curriculum (2006). *Voyage Journal of Educational Studies*, 4(1), 127-138.

Jamil, M., Bokhari, T. B., & Zia, Q. (2024). Qualitative content analysis for critical thinking and skill development: A case of chemistry curriculum. *Journal of Asian Development Studies*, 13(1), 147-155.

Jamil, M., Hafeez, F., Abdul, & Muhammad, N. (2024). Critical thinking development for 21st century: Analysis of Physics curriculum. *Journal of Social & Organizational Matters*, 3(1), 1-10.

Jamil, M., Mahmood, A., & Masood, S. (2023). Fostering critical thinking in Pakistani secondary school science: A teacher's viewpoint. *Global Educational Studies Review*, 8(2), 645-659.

Jamil, M., Mehmood, W., & Shah, F. u. H. (2024). Development of critical thinking skills among secondary school science students: An analysis of Chemistry textbook grade IX (2020). *Global Educational Studies Review*, 9(1), 13-20.

Jamil, M., & Muhammad, Y. (2019). Teaching Science Students to Think Critically: Understanding Secondary School Teachers' Practices. *Journal of Research and Reflections in Education*, 13(2), 256-272.

Jamil, M., Muhammad, Y., & Akhtar, N. (2022). Teachers' Critical Reflective Practice in the Context of Online Teaching: A Qualitative Study. *SJESR*, 5(3), 78-89.

Jamil, M., Muhammad, Y., & Qureshi, N. (2021). Critical thinking skills development: Secondary school science teachers' perceptions and practices. *Sir Syed Journal of Education & Social Research (SJESR)*, 4(2), 21-30.

Jamil, M. M., W. Saleem, A. (2024). Biology textbook grade X (2020): Analysis for the development of higher order thinking skills among secondary school science students. *Global Regional Review (GRR)*, 9(1), 29-35.

Khalid, A., Muhammad, Y., & Masood, S. (2021). Challenges Faced by Students with Low Vision in Preparing for their Public Exams: A Qualitative Study. *Global Educational Studies Review*, VI, 6, 41-50.

Lowenthal, P., Borup, J., West, R., & Archambault, L. (2020). Thinking beyond Zoom: Using asynchronous video to maintain connection and engagement during COVID-19 pandemic. *Journal of Technology and Teacher Education*, 28(2), 383-391.

Markus, H. S., & Brainin, M. (2020). COVID-19 and stroke—A global World Stroke Organization perspective. *International journal of stroke*, 15(4), 361-364.

Martin, F., Sun, T., & Westine, C. D. (2020). A systematic review of research on online teaching and learning from 2009 to 2018. *Computers & Education*, 159, 104009.

Means, B., Bakia, M., & Murphy, R. (2014). Learning online: What research tells us about whether, when and how. *Routledge*.

Muhammad, M. J. Y., & Qureshi, N. (2021). Secondary School Science Teachers' Practices for the Development of Critical Thinking Skills: An Observational Study. *Journal of Development and Social Sciences*, 2(4), 259-265.

Muilenburg, L. Y., & Berge, Z. L. (2005). Student barriers to online learning: A factor analytic study. *Distance education*, 26(1), 29-48.

Naseer, H., Muhammad, Y., & Jamil, M. (2022). Critical thinking skills in Pakistan studies textbook: Qualitative content analysis. *Pakistan Journal of Social Research*, 4(3), 744-755.

Naz, M., Hani, U., & Muhammad, Y. (2020). Self-efficacy beliefs of pre-service teachers regarding online teaching. *International Journal of Distance Education and E-Learning*, 6(1), 47-65.

Pace, C., Pettit, S. K., & Barker, K. S. (2020). Best practices in middle level quaranteaching: Strategies, tips & resources amidst COVID-19. *Becoming: Journal of the Georgia Association for Middle Level Education*, 31(1), 2-13.

Pirzada, G., Muhammad, Y., & Mahmood, A. (2022). Assessment Challenges Faced by Technical Vocational Education (TVET) Stakeholders in Pakistan: Stakeholders' Perspectives. *Research Journal of Social Sciences and Economics Review*, 3(4), 17-26.

Raju, V. (2021). Implementing flexible systems in doctoral viva defense through virtual mechanism. *Global Journal of Flexible Systems Management*, 22(2), 127-139.

Rasmitadila, R., Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., & Tambunan, A. R. S. (2020). The perceptions of primary school teachers of online learning during COVID-19 pandemic period. *Journal of Ethnic and Cultural Studies*, 7(2), 90-109.

Saleem, A., Muhammad, Y., & Masood, S. (2020). Classroom management challenges and administrative support in elementary schools: Experiences of novice public-school teachers. *UMT Education Review*, 3(2), 29-46.

Saleem, A., Muhammad, Y., & Masood, S. (2021). Managing elementary classrooms: Experiences of novice public-schools' teachers regarding behavioral challenges of students. *Asian Social Studies and Applied Research*, 2(3), 354-366.

Saleem, A., Muhammad, Y., & Qureshi, N. (2021). Strategies and challenges of novice public-school teachers related to classroom management at the elementary level in Lahore. *Pakistan Social Sciences Review*, 5(4), 258-271.

Shah, M., & Cheng, M. (2019). Exploring factors impacting student engagement in open access courses. *Open Learning: The Journal of Open, Distance and e-Learning*, 34(2), 187-202.

Toquero, C. M. (2020). Challenges and opportunities for higher education amid the COVID-19 pandemic: The Philippine context. *Pedagogical Research*, 5(4).

Vlachopoulos, D. (2011). COVID-19: Threat or opportunity for online education? *Higher learning research communications*, 10(1), 2.

Zafar, A. H., Muhammad, Y., & Bokhari, T. B. (2022). University students' perspectives on online teaching practices during the COVID-19 pandemic: A qualitative study. *Research Journal of Social Sciences and Economics Review*, 2(2), 83-91.