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Article

How proficient are tertiary education providers in engaging with open-learning environments? A comparative study in the post-COVID-19 transition

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Abstract: Purpose: This research paper aims to assess the proficiency of tertiary education providers in engaging with online learning environments, especially in the context of the post-COVID-19 transition. The COVID-19 pandemic accelerated the adoption of online learning platforms, it is essential to understand how educational institutions have adapted and evolved in their approach to virtual education. The central research question explores how Continuous Professional Development (CPD), Technological Infrastructure (TI), and Support Systems (SS) collectively influence educators' proficiency in online teaching (POT). **Study design/methodology/approach:** A comparative study was performed, comparing data collected during the COVID-19 pandemic with post-pandemic data from higher education institutions in Uzbekistan. In-depth interviews were conducted with 15 education facilitators representing both public and international educational institutions. This purposive sampling approach allows for a holistic exploration of the experiences, challenges, strategies, and preparedness of these facilitators during the transition to online learning. Manual qualitative data classification and content analysis were employed to understand themes in respondent experiences and identified actions. **Findings:** The study reveals the significant role of CPD, robust TI, and effective SS in enhancing the Proficiency of tertiary education providers in engaging with Online Teaching. These elements were found to be significant determinants of how well institutions and educators adapted to the shift to virtual education. The research offers valuable insights for educators, policymakers, and students, aiding in decision-making processes within academia and guiding the development and implementation of effective online teaching strategies. **Originality/value:** This study contributes to the existing literature by providing an in-depth understanding of the adjustments education facilitators make in response to the pandemic. It emphasizes the importance of ongoing preparation for online learning and highlights the role of digital workplace capabilities in ensuring successful interaction in virtual educational environments.

Keywords: online learning readiness; tertiary education providers; Uzbekistan academics; online learning; a digital workplace

1. Introduction

The COVID-19 pandemic has brought about a significant transformation in the field of education, forcing tertiary institutions worldwide to rapidly shift towards online learning environments. While this shift has posed challenges, it has also presented new opportunities for innovation and improved accessibility. In the post-COVID-19 era, it is crucial to evaluate how these institutions have adapted and

evolved in their approach to virtual education. This paper aims to examine the proficiency of tertiary education providers in engaging with open-learning environments, particularly during the transitional period following the COVID-19 pandemic. Through this investigation, the research seeks to provide valuable insights that can inform educational decision-making and promote the development of effective online teaching strategies in the post-COVID-19 era.

The sudden transition to online learning was a global response to the limitations imposed by the pandemic on in-person education (Hodges et al., 2020). Educational institutions worldwide faced the challenge of ensuring continuity in learning while safeguarding the health and well-being of their students and faculty (Gabdulhakov, 2020; UNICEF, 2022). Consequently, online learning became the default mode of education, marking an unprecedented shift in the educational landscape (Hodges et al., 2020; UNESCO, 2020). This transition, though necessitated by the crisis, has also highlighted the potential of online learning in expanding access to education. It has introduced innovative pedagogical approaches, increased learning flexibility, and created opportunities to reach previously underserved learners (UNESCO, 2020). These developments underscore the need for a critical examination of the readiness and proficiency of tertiary education providers in engaging with open-learning environments in the post-COVID-19 era. The significance of this examination lies in its potential to inform educational practices, policies, and investments.

Furthermore, gaining an understanding of the decision-making process of international students, as conceptualized by Migin et al. (2015), provides valuable insights into how institutions can strategically position themselves in the global education market, particularly in the context of online and hybrid learning environments. To effectively leverage the benefits of online learning and address its challenges, it is vital to comprehend how tertiary education providers have navigated this transition. By doing so, best practices, areas for improvement, and key factors contributing to proficiency in virtual education can be identified.

This study draws upon a body of literature that emphasizes the importance of continuous professional development (CPD) for educators transitioning to online teaching (Bower, 2020; Smith, 2021). Additionally, the institutional characteristics that attract international students, as explored by Migin et al. (2015) are crucial in understanding how institutions can strategically position themselves in the global education landscape. The study highlights the critical role of robust technological infrastructure (TI) in ensuring effective online instruction (Hodges et al., 2020; O'Byrne and Plumb, 2018). Furthermore, it emphasizes the need for comprehensive support systems (SS) to facilitate the successful adaptation of educators to virtual learning environments (Chen and Wang, 2020; Darling-Hammond et al., 2017). Building upon these foundations, the research investigates how these factors influence the proficiency of tertiary education providers in engaging with open-learning environments. The study explores the experiences and challenges faced by teachers during the transition, the strategies and preparedness measures they adopted, and the impact of these variables on their effectiveness in online teaching.

The COVID-19 pandemic catalyzed a monumental shift in education towards online learning environments, necessitating rapid adaptation by tertiary education providers. In this transformative landscape, understanding the determinants of

educators' proficiency in online teaching has emerged as a critical challenge. Continuous Professional Development (CPD), Technological Infrastructure (TI), and Support Systems (SS) have been identified as influential factors in shaping educators' Proficiency in Online Teaching (POT). Thus, the problem statement revolves around comprehensively assessing how CPD, TI, and SS collectively impact educators' proficiency in the post-COVID-19 era.

Research question: How do Continuous Professional Development (CPD), Technological Infrastructure (TI), and Support Systems (SS) collectively influence educators' proficiency in online teaching (POT) in the post-COVID-19 context?

Research objectives: The study aims to achieve the following objectives:

- To evaluate the perceived proficiency levels of tertiary education providers in online teaching, with a focus on the roles of CPD, TI, and SS.
- To explore how CPD, TI, and SS influence educators' proficiency in online teaching, identifying themes and patterns that emerge from the data.
- To compare the adaptation strategies of different tertiary education providers, particularly how variations in CPD, TI, and SS contribute to differences in POT.
- To investigate the long-term implications of CPD, TI, and SS on the sustainability of online education practices in the post-COVID-19 era.

2. Literature review

2.1. Online learning in Uzbekistan

When the quarantine was imposed in 2020, the Ministry of Higher Education in the Republic of Uzbekistan proposed several rapid actions to ensure that education was not disrupted (Ministry of Higher and Secondary Vocational Education of the Republic of Uzbekistan, 2020). These collective measures, where providers use technology-enhanced learning resources such as audio, video, and discussion forums have the potential to foster an environment where the students can better engage and convey their views (Lal and Paul, 2018; Montelongo and Eaton, 2019). However, despite being able to relate to the different ways students learn, this strategy may have less of an influence on kinesthetic learning, considering the distant nature of online learning and the potential lack of support methods to encourage students to apply and improve their "practical," "self-directed," and "collaborative" skills. Self-reliance, autonomy, and motivational skills can be developed by online learning (Hartnett, 2016); however, the efficiency of this medium is determined by the quality of the learning space (Turner et al., 2019), teachers' and students' motivation, along with their collective and individual skills to address barriers to online learning inclusivity.

2.2. Problems in online learning

Online learning allows students to learn at their own speed, monitoring their learning from the comfort of their own home (Bączek, et al., 2020). However, the issues of self-discipline, remoteness (Eder, 2020; Hermanto and Srimulyani, 2021), the isolated learner (Dolan, 2011; Gillett-Swan, 2017) as well as consistent connection (Bączek et al., 2020; Bahasoan, et al., 2020) are still problems to address. Previous studies have identified these characteristics over disciplines and geographies (Arora

and Srinivasan, 2020; Bao, 2020), which have been accentuated during the pandemic and 'lock down' period (Basilaia and Kvavadze, 2020; Gonzalez et al., 2020; Mulenga and Marbán, 2020; Murphy, 2020; Nguyen et al., 2020). The features of remoteness and increased tension caused by having to learn and adapt to new norms in learning has been particularly challenging for academics (Abd Hamid, 2020), who must teach exclusively from home, collecting material on how and what to conduct in an interesting way simultaneously ensuring good standards of education (Chen et al., 2014). The increase in the number of duties brought about by additional training and transitioning materials to the online platform as well as being isolated from the workplace has the potential to increase cognitive and emotional stress on staff and learners (Schroeder, 2020). As a result, if employees are pressured and exhausted, they may give a poor performance, resulting in poor student experiences and results. (Chandra and Varghese, 2019; de Jonge and Peeters, 2019; Dewi et al., 2021; Shah et al., 2018; Tummers et al., 2018). Increased fatigue, technical concerns, and home distractions are all issues that academics and students encounter during online learning (Kaczmarek et al., 2021). Learning materials, communication, digital tools, and technical support/training collectively address some of those concerns (Law, 2021) the extent to which they are individually and collectively effective will be investigated in this research from the perspective of tertiary education providers.

To create measurable and meaningful university learning experiences, online learning needs effective specialised assistance and a supportive environment. (Basilaia and Kvavadze, 2020). Underpinning this experience is the digital competence of both academics and students as well as the accessibility to quality learning materials and approaches to enhance the process for students and education facilitators (Adedoyin and Soykan, 2020; Arora and Srinivasan, 2020; Bao, 2020; Basilaia and Kvavadze, 2020). The online learning experience is likely to be hampered by a lack of awareness of digital technology and its inappropriate deployment and maintenance. (Adedoyin and Soykan, 2020; Shahzad et al., 2021). Therefore, the onus is on students, educators, and administrators to work together, to ensure high-quality online learning and maintain levels of student satisfaction (Markova, 2017). Despite this discussion in a variety of educational contexts, literature does not indicate if educators have been more effective and successful in an online distance learning setting, or whether the interaction between the learner, the learning facilitator, and online learning has been enhanced. The necessity for more understanding of this relationship, as well an exploration into the voices of the learning facilitator, underpins the motivation for study in this field, and which addresses a gap in the literature.

The emergence of online learning as a dominant platform for the delivery of education, accelerated by the COVID-19 pandemic, has compelled educators and researchers to explore the intricacies of this transformative shift. To assess the proficiency of tertiary education providers in engaging in open-learning environments, this study draws upon a body of literature that underscores the significance of continuous professional development (CPD), technological infrastructure (TI), and support systems (SS).

2.3. Continuous Professional Development (CPD)

Continuous professional development has been recognized as a pivotal factor in educators' readiness for online teaching. Bower (2020) emphasizes the importance of CPD in enhancing educators' digital competence and pedagogical skills. Smith (2021) echoes this sentiment, highlighting that educator who engage in ongoing training demonstrate increased confidence and proficiency in online instruction. Despite its merits, CPD is not without limitations. Participation rates in professional development programs can vary widely among educators, and the effectiveness of these programs may depend on the quality of the training provided (Means et al., 2013). Thus, while CPD is a crucial variable, its efficacy can be influenced by various factors. Informed by the findings and insights from the existing literature, Continuous Professional Development (CPD) positively influences educators' Proficiency in Online Teaching (POT) in the post-COVID-19 era.

2.4. Technological Infrastructure (TI)

Technological infrastructure forms the bedrock of online learning. Studies have consistently pointed to the pivotal role of robust TI in ensuring effective online instruction (Hodges et al., 2020; O'Byrne and Plumb, 2018). Additionally, the integration of social media into educational settings has been found to enhance informal learning and student engagement, as evidenced by the findings of Falahat et al. (2016), who identified these factors as key drivers of social media usage among university students. Picciano (2017) underscores the importance of adequate TI, including internet speed and access to specialized software, in facilitating online education. However, the global digital divide remains a challenge (UNESCO, 2020). The perceived quality of technological infrastructure also significantly impacts the brand performance of higher education institutions. As highlighted by Shue and Falahat (2017), service quality, including the adequacy of technological resources, directly influences UniBrand performance, making it essential for universities to maintain high standards in these areas. Not all educators and students have equal access to TI resources, which can hinder the equitable implementation of online learning. Thus, while TI is a critical determinant of proficiency in online teaching, disparities in its accessibility must be considered. In the context of Uzbekistan, where the adoption of online teaching has gained momentum, the significance of Technological Infrastructure (TI) as a crucial determinant of proficiency in online teaching cannot be overstated. However, it is essential to recognize that disparities in the accessibility and quality of TI resources exist within the country (Gabdulhakov, 2020; UNICEF, 2022). Based on the findings from the existing literature, there is a positive relationship between the quality and accessibility of Technological Infrastructure (TI) and educators' Proficiency in Online Teaching (POT) in open-learning environments, indicating that better TI is associated with higher levels of POT.

2.5. Support Systems (SS)

Effective support systems have been identified as instrumental in educators' successful transition to online teaching (Chen and Wang, 2020; Darling-Hammond et al., 2017). Social media, as a tool within these support systems, has been shown to

significantly impact informal learning and student engagement in higher education contexts. The study by Falahat et al. (2016) demonstrates that informal learning, seeking information, and student engagement are direct drivers of social media usage among university students, underscoring its potential as a valuable educational tool. Darling-Hammond et al. (2017) emphasize the role of mentorship and ongoing support in helping educators adapt to new teaching environments. Chen and Wang (2020) highlight the importance of digital workplace capabilities in higher education and the need for comprehensive support systems. However, the provision and utilization of support systems can present challenges. Not all educators have access to mentoring programs or peer support networks, and the effectiveness of such systems may depend on their design and implementation (Johnson et al., 2021). Thus, while support systems are integral, their impact can vary based on institutional context and individual circumstances. In summary, the literature highlights the critical role of Continuous Professional Development (CPD), Technological Infrastructure (TI), and Support Systems (SS) in shaping the proficiency of tertiary education providers in open-learning environments. These factors are particularly relevant in the context of Uzbekistan (Khusanov et al., 2020; Sankar, 2020). However, it is essential to acknowledge that their impact may vary due to regional disparities and the unique educational landscape of Uzbekistan. Practical recommendations drawn from the study will be effective in enhancing educators' readiness and proficiency in online teaching, leading to measurable improvements in their online teaching practices and student outcomes. When discussing the role of support systems and professional development in enhancing educators' proficiency, it is important to consider the emotional and psychological factors that impact job performance. Emotional intelligence, as demonstrated by Chong et al. (2020), has a significant relationship with job performance among academic staff in higher education institutions. Their study highlights that higher levels of emotional intelligence can predict better job performance, suggesting that emotional well-being and professional success are closely linked in educational environments (Chong et al., 2020).

These hypotheses reflect direct relationships between the independent variables (CPD, TI, SS) and the dependent variable (POT). They serve as the foundation for testing the relationships and interactions in the study to determine how CPD, TI, SS collectively influence educators' Proficiency in Online Teaching in the post-COVID-19 era. The underlying theory that provides the conceptual framework (see Figure 1) for our research is the Community of Inquiry Framework (Garrison et al., 2000). This framework guides the exploration of Support Systems (SS) by examining the social and cognitive presence in online learning communities, helping to understand the role of support networks. This theory is highly aligned with these objectives and questions as it focuses on the creation and maintenance of a supportive and collaborative online learning environment. It provides a structured approach for exploring how support systems (SS), including mentoring and peer networks, impact educators' readiness and proficiency in online teaching (POT). The Community of Inquiry Framework directly addresses how support systems within online learning environments contribute to the success of online education.

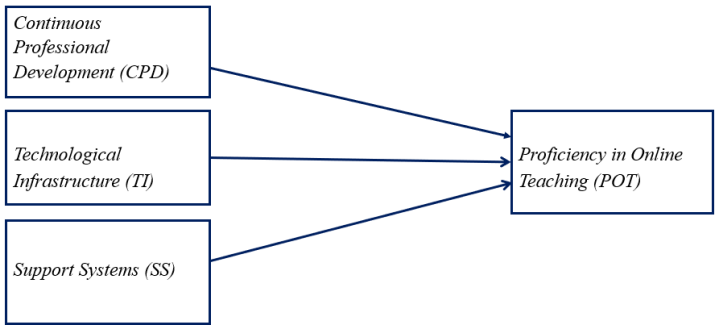

Figure 1. Conceptual framework

3. Methodology

3.1. Research design

This study employed a qualitative research design, utilizing in-depth interviews to explore the proficiency of tertiary education providers in engaging with online learning environments during and after the COVID-19 pandemic. The qualitative approach was chosen to capture rich, detailed insights into the experiences, challenges, and strategies of educators as they navigated the transition to online teaching. The study aimed to understand the factors influencing educators' proficiency in online teaching, with a particular focus on Continuous Professional Development (CPD), Technological Infrastructure (TI), and Support Systems (SS).

3.2. Participants and sampling

The study involved 15 English language staff members from public and private international universities across three cities in Uzbekistan: Tashkent, Ferghana, and Andijan. The participants were selected using purposive sampling, targeting individuals who had direct experience with online teaching during the COVID-19 pandemic. This approach allowed the study to gather a diverse range of perspectives from educators who were actively engaged in the transition to virtual learning environments. The sample size, although limited to 15 participants, was determined by inviting all English language staff members from the selected institutions to participate in the study. A total of 19% of the invitees agreed to be interviewed. Despite the relatively small number of respondents, the study achieved data saturation, ensuring that the collected data provided a comprehensive understanding of the themes under investigation.

3.3. Data collection

Data were collected through semi-structured interviews conducted in two phases:

Phase 1 (During COVID-19): Interviews were conducted with participants during the COVID-19 pandemic to capture their immediate challenges, adaptations, and experiences in transitioning to online learning.

Phase 2 (Post-COVID-19): Follow-up interviews were conducted with the same participants after the pandemic had subsided, focusing on their reflections, long-term changes, and sustained practices in online teaching.

The interview questions were derived from a review of relevant literature (Paterson, 2019; Peters et al., 2020; Rahimi and Talebi, 2020; Setiawan and Ilmiyah, 2020; Shamsitdinova and Shakhakimova, 2020; Taha et al., 2020; Tejedor et al., 2020; Tesar, 2020; Zaharah et al., 2020) and were designed to explore the impact of CPD, TI, SS, and Digital Literacy on educators' Proficiency in Online Teaching (POT). The questions were vetted by a panel of three professionals in online learning and were pilot tested to ensure clarity and appropriateness. Based on feedback from the pilot study, minor adjustments were made to the sequence of questions to enhance the flow of the interviews.

3.4. Data analysis

The qualitative data obtained from the interviews were manually analyzed to identify key themes and patterns related to the research objectives. The analysis process involved transcribing the interviews, coding the responses, and categorizing the data to uncover the underlying themes that emerged from the participants' experiences. This manual analysis approach allowed for a nuanced interpretation of the data, providing deeper insights into the factors influencing educators' proficiency in online teaching. Content analysis was used to systematically examine the data, to understand the relationships between CPD, TI, SS, and POT. The findings were organized into tables to highlight observed patterns and relationships, facilitating a clear presentation of the results.

3.5. Ethical considerations

The study adhered to strict ethical guidelines throughout the research process. Ethical approval was obtained prior to data collection, and all participants provided informed consent. The confidentiality and anonymity of the participants were maintained at all times, with data being securely stored and only accessible to the research team.

3.6. Limitations

While the study provides valuable insights into the experiences of English language educators in Uzbekistan, it is important to acknowledge the limitations. The sample size, although sufficient for achieving data saturation, may limit the generalizability of the findings to a broader population. Additionally, the study's focus on English language staff may not capture the full spectrum of experiences across different academic disciplines. Despite these limitations, the depth of information obtained from the participants offers a significant contribution to understanding the challenges and strategies involved in online teaching during and after the COVID-19 pandemic.

4. Results

4.1. Phase 1: During COVID era

The first phase of the interviews involved 15 English language staff members employed at government and international universities in Uzbekistan. This phase

aimed to capture the immediate challenges, adaptations, and experiences of educators during the initial transition to online learning, in a time when COVID-19 was new and rapidly evolving. It's important to note that this period represents the ongoing nature of the pandemic, where institutions and individuals were adapting to a world in which COVID-19 had become a persistent part of daily life, not a situation that had ended but one in which they continued to live with the virus's presence.

4.1.1. Key findings related to the research variables

Continuous Professional Development (CPD): Respondents expressed varying levels of preparedness for online teaching, with most acknowledging the need for additional training in digital pedagogy. CPD was seen as crucial in enhancing educators' digital competence, confidence, and effectiveness in online teaching. Regardless of gender, age, or teaching experience, the majority of respondents emphasized the need for further administrative assistance in terms of offering customized courses and training for both students and staff to interact with online educational technologies effectively. Typical responses included:

> *"I don't have enough experience, and I would suggest developing special courses or training in the long term perspective for each teacher and student."*
>
> *"There must be some training on improving computer literacy for teachers and students."*
>
> *"In order to improve this kind of learning, I think the management must organize special classes to teach digital learning for students and teachers."*

The need for targeted training and administrative support observed from the respondents aligns with several studies in the literature. Abdullaeva and Gafurova (2020) highlight the importance of continuous professional development in adapting to new teaching methods, emphasizing that educators require ongoing support to effectively integrate technology into their teaching practices. Similarly, Adnan and Kainat (2020) underscore that students also face challenges in adapting to online learning environments, which suggests a mutual need for enhanced training and support.

Ali et al. (2017) identified four major problems in online learning—technology, personality, pedagogy, and enabling environments. Their research supports the findings of this study, particularly regarding the need for improved technology and enabling environments, which includes administrative and pedagogical support. They argue that addressing these issues is critical for successful online learning and teaching, reinforcing the need for systematic and structured assistance for both educators and students.

By integrating these insights, it becomes evident that both educators and students benefit significantly from well-structured training programs and administrative support. The combined perspectives from the literature and the study participants underscore a common theme: that effective online teaching and learning hinge on the availability of comprehensive training and support mechanisms.

Technological Infrastructure (TI): TI was identified as a critical factor influencing the efficacy of online teaching. Many respondents reported challenges related to technological infrastructure, such as unreliable internet connectivity and limited access to necessary digital tools. For example, some respondents expressed a

desire for basic, user-friendly platforms that integrate features like timetables and lecture recordings, highlighting issues with current platforms. One respondent noted:

> *"I want some basic platform, user-friendly, which includes a timetable, where you can see the timetable, click to it, and your lecture appears if it is going if previous days—you could see the recordings of previous days. The easier, the better for students."*

This quote highlights the need for platforms that streamline the online learning process, making it more accessible for both educators and students. The emphasis on simplicity and user-friendliness reflects broader concerns in the literature about the complexity of many educational technologies. Studies by Selwyn (2016) and Beetham and Sharpe (2019) support this perspective, arguing that overly complex digital tools can impede learning rather than enhance it.

Another respondent mentioned: *"Students had difficulties in joining the classes and engaging with teachers because they didn't have enough digital skills, technological infrastructures, and internet connectivity."* These comments underscore the need for improved technological solutions that facilitate a smoother online learning experience. The study found that various platforms currently used for distance education present different challenges, such as complex interfaces, limited features, or inadequate support for interactive learning. For instance, research by Ali et al. (2017) highlights those technological issues, including inadequate infrastructure and complex platforms, are significant barriers to effective online learning. Their findings suggest that simplifying and enhancing technological tools can alleviate some of these challenges.

Additionally, the work of Ertmer and Ottenbreit-Leftwich (2010) supports the observation that effective online teaching relies heavily on reliable and accessible technological resources. They emphasize that educators' perceptions of technology and their ability to integrate it into their teaching are influenced by the quality and usability of the technological infrastructure available. This aligns with the respondents' concerns about needing user-friendly platforms that support both teaching and learning processes.

Furthermore, studies such as those by Çakır and Şahin (2020) illustrate that technological infrastructure plays a crucial role in the successful implementation of online learning environments. They found that issues like poor internet connectivity and inadequate digital tools can significantly hinder both teaching and learning experiences. This further supports the need for improved technological solutions to address the challenges faced by educators and students.

4.1.2. Support Systems (SS)

Support systems were deemed essential for overcoming the challenges associated with online teaching. Respondents emphasized the importance of mentoring, peer networks, and institutional support. It's also crucial to recognize the emotional and psychological factors that vary depending on students' backgrounds. For instance, Migin and Falahat (2016) found that students' geographical origins, such as rural versus urban areas, can significantly influence aspects of their emotional intelligence, including commitment and flexibility. This suggests that support systems may need to be tailored to address these differences effectively. Despite the availability of training

and workshops, many respondents indicated that the rapid pace of change in online education requires ongoing support and adaptation.

4.1.3. Need for comprehensive training across all recipients

All respondents, regardless of their age, experience, or digital literacy, recognized the necessity for ongoing training to effectively engage with online educational technologies. One respondent remarked:

> *"I don't have enough experience, and I would suggest developing special courses or training in the long term for each teacher and student."*

This highlights a broader concern that the existing training programs may not be sufficient to address the diverse needs of educators. The literature supports this observation, with studies by Lawless and Pellegrino (2007) emphasizing the importance of continuous professional development tailored to individual needs. Effective support should include not only initial training but also ongoing professional development opportunities that can adapt to the evolving technological landscape.

Moreover, the necessity of training for students was also emphasized, as many respondents pointed out that students often lacked the digital skills required for online learning. One respondent suggested:

> *"There must be some training on improving computer literacy for teachers and students."*

This reflects a dual need for educational institutions to provide comprehensive digital literacy programs that cater to both educators and students, ensuring that everyone involved in the learning process can navigate online platforms effectively.

4.1.4. Challenges faced by older generation lecturers

A significant challenge identified in the study was the difficulty older generation lecturers experienced in adapting to online teaching platforms. As one respondent noted:

> *"Older generation lecturers had difficulties in conducting online lessons, and sometimes we had to replace them because of it."*

This issue was further highlighted by another respondent who mentioned: *"There were situations when our old generation teachers conducted their sessions with their grandchildren as a technical assistant."*

These comments underscore the particular struggles faced by mature academics, who may not be as familiar with digital technologies as their younger counterparts. The literature extensively documents these generational challenges. Prensky's (2001) concept of "digital natives" versus "digital immigrants" provides a useful framework for understanding the digital divide that can exist between different age groups. Prensky argues that those who grew up in the digital age ("digital natives") are inherently more comfortable with technology, while those who did not ("digital immigrants") may struggle to adapt. This generational gap necessitates targeted support and training programs specifically designed for mature educators to help them overcome the unique challenges they face in online teaching environments.

To address these challenges, the study suggests that more comprehensive support systems are required. Tailored training programs, continuous professional development opportunities, and accessible technical assistance are crucial for enhancing digital literacy among both staff and students. This support is essential for

ensuring that all educators, regardless of their technological proficiency, can effectively engage with online learning environments.

4.1.5. Proficiency in Online Teaching (POT)

Overall, respondents indicated mixed levels of proficiency in online teaching, with some feeling more confident and adaptable than others. POT was influenced by a combination of Continuous Professional Development (CPD), Technological Infrastructure (TI), Support Systems (SS), and individual digital literacy levels. From a review of the responses, the majority of respondents had prior experience using digital platforms for materials and conducting classes before the global pandemic, which significantly assisted them in fully adopting online learning during the pandemic. A typical response was: *"I think the pandemic was a great time for me to experiment with what I have learned for the past 5–6 years. I was involved in British Councils' webinars, a series of training called TELL—Technology Enhanced Language Learning, and through these pieces of training, I was aware of the LMS, different platforms like Moodle, and how to practice using digital tools."*

These respondents were proactive in participating in internal and external workshops and seminars aimed at increasing their awareness of online platforms and enhancing their ability to provide content online. However, not all educators shared this level of confidence or experience. The study also found that a minority of interviewees used their initiative to pursue additional training independently, driven by a desire to enhance their understanding of online learning and improve their proficiency. These individuals demonstrated a commitment to professional growth, which contributed to their ability to adjust to the "new learning standard" and increased their confidence in using digital learning resources effectively. One respondent noted: *"The workshops and additional training I sought out were crucial in helping me feel comfortable and competent in the online classroom. Without them, I would have struggled much more with the transition."*

The variability in proficiency levels among educators aligns with findings in the literature that highlight the importance of pre-existing digital skills and the role of continuous professional development in online teaching (Ertmer and Ottenbreit-Leftwich, 2010). Additionally, the emotional intelligence of students, which can vary based on factors such as their geographical background, plays a crucial role in their adaptability and success in online learning environments. Wan et al. (2015) demonstrated that students from urban and rural areas exhibit significant differences in emotional intelligence, particularly in commitment and flexibility, which could impact their learning experiences and outcomes. Studies by Lawless and Pellegrino (2007) emphasize that educators with higher levels of digital literacy and a proactive approach to professional development are more likely to succeed in online teaching environments. This suggests that institutions should prioritize digital skills training as a core component of professional development for all educators, ensuring that they are well-equipped to meet the demands of online education.

4.2. Phase 2: Post-COVID era

The second phase of the interviews involved the same 15 English language staff members, with a focus on their experiences and reflections after returning to face-to-

face teaching. This phase sought to understand how the lessons learned during the COVID-19 pandemic influenced their teaching practices, the challenges they encountered in transitioning back to in-person instruction, and the lasting impact of online learning.

Key findings related to the research variables

Continuous Professional Development (CPD): After returning to face-to-face teaching, many respondents noted that the CPD initiatives during the pandemic had a lasting impact on their teaching practices. The skills acquired in online teaching were often integrated into traditional classroom settings, with educators continuing to use digital tools to enhance student engagement and learning outcomes. However, some respondents expressed a desire for ongoing professional development to bridge the gap between online and in-person teaching. They felt that while they had adapted well to online learning, the transition back to traditional teaching required a different set of skills and strategies. A respondent mentioned:

> *"We have learned so much during the pandemic, but now I feel we need new training to effectively combine what we've learned online with our in-person teaching."*

This comment reflects the evolving nature of professional development needs as educators navigate the post-pandemic educational landscape. The literature supports this observation, with studies by Darling-Hammond et al. (2017) emphasizing the importance of ongoing, context-specific professional development that evolves with changing educational environments. The findings suggest that institutions should continue to offer tailored CPD programs that address the unique challenges of hybrid or blended learning models.

Technological Infrastructure (TI): TI continued to play a significant role in the post-COVID teaching environment. Many respondents reported that the digital tools and platforms they had used during the pandemic remained integral to their teaching, even in a face-to-face context. They highlighted the importance of reliable technology in facilitating blended learning approaches, where online resources complement in-person instruction.

Despite the overall positive reception of digital tools, some respondents noted that the return to face-to-face teaching exposed weaknesses in the technological infrastructure that had been less apparent during fully online instruction. For instance, one respondent remarked: "*When we returned to the classroom, we realized that the technology we used during the pandemic wasn't always designed for a blended approach. We need better integration between online and in-person tools."* This insight aligns with the literature, where studies by Garrison and Kanuka (2004) highlight the challenges of integrating technology into blended learning environments. Their research suggests that for technology to be effective in such contexts, it must be purposefully designed and seamlessly integrated into the teaching process. The findings indicate a need for institutions to invest in technological solutions that are specifically tailored to support blended learning models.

Support Systems (SS): SS were crucial in helping educators navigate the transition back to face-to-face teaching. Respondents emphasized the importance of continued access to mentoring, peer networks, and institutional support as they

adapted to new teaching environments. However, some educators reported feeling a lack of support during this transition, particularly in terms of guidance on how to effectively blend online and in-person teaching. One respondent highlighted this issue:

"There was a lot of support during the pandemic, but when we went back to face-to-face teaching, it felt like we were on our own. We need more guidance on how to make the most of what we've learned." This reflects a broader concern in the literature about the sustainability of support systems after a crisis. Research by Henderson, Selwyn and Aston (2017) suggests that while institutions often provide substantial support during periods of upheaval, there is a tendency for this support to diminish once the immediate crisis has passed. The findings underscore the need for sustained support mechanisms that help educators continue to adapt and innovate in their teaching practices.

Proficiency in Online Teaching (POT): The transition back to face-to-face teaching revealed varying levels of proficiency in online teaching among educators. While some respondents felt confident in their ability to integrate digital tools into their classroom instruction, others struggled to find a balance between online and in-person teaching methods. This disparity was often linked to the extent of CPD and support systems available to them during the pandemic. A respondent commented: *"I'm comfortable with online tools now, but I'm still figuring out how to use them effectively in a physical classroom. It's a different challenge."*

This statement highlights the ongoing need for professional development that addresses the unique challenges of blended learning environments. The literature supports this view, with studies by Graham (2006) suggesting that proficiency in online teaching does not automatically translate to success in blended or hybrid models. The findings indicate that educators need targeted training and support to effectively integrate digital tools into face-to-face teaching.

The second phase of the interviews as shown in **Figure 2**, reveals that the transition back to face-to-face teaching has been both challenging and transformative for educators. While many have successfully integrated digital tools into their classroom practices, others continue to struggle with the unique demands of blended learning environments. The insights gained from this phase of the study underscore the importance of ongoing CPD, robust technological infrastructure, and sustained support systems in helping educators navigate the post-pandemic educational landscape.

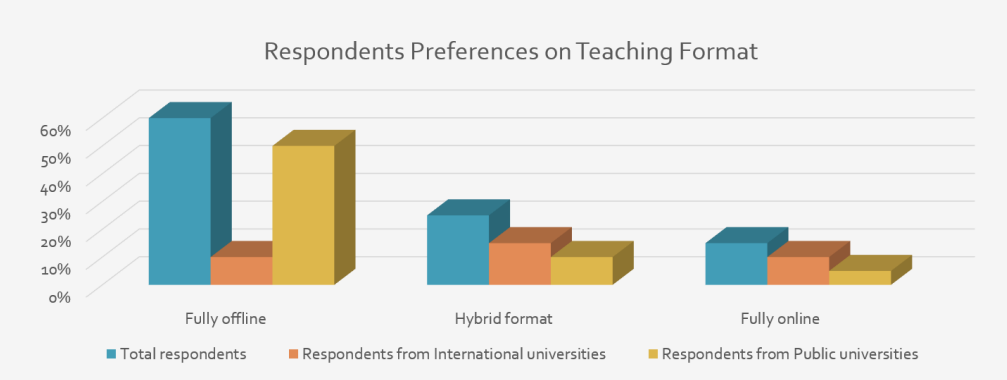

Figure 2. Respondents' preferences on teaching format (Phase 2).

Factors influencing format preferences: Those who preferred offline teaching cited concerns about the quality of online learning, challenges in student control, and their own readiness for distance education due to limited digital literacy. These factors align with the influence of CPD, TI, and SS on educators' preferences and readiness for online teaching. Literature supports these findings; for example, studies by Wang et al. (2020) highlight that, concerns about online learning quality and digital literacy are significant factors affecting educators' preferences. Furthermore, research by Bozkurt et al. (2020) underscores the challenges of maintaining student engagement and control in online environments, which aligns with the respondents' experiences.

Proposed Improvements: All participants proposed improving the university's digital learning platform, organizing training sessions for both teachers and students, and fully equipping digital workplaces. These suggestions reflect a recognition of the ongoing need for development and adaptation in digital education. The literature supports these recommendations, noting that well-designed digital platforms and continuous training are crucial for effective online learning environments (Huang et al., 2020). Ensuring robust support systems and infrastructure is essential for addressing the challenges identified and improving the overall efficacy of online education.

5. Discussion and conclusion

The COVID-19 pandemic marked a turning point in education, pushing tertiary education providers worldwide to rapidly transition to open-learning environments. This study delved into the proficiency of English language staff in Uzbekistan's government and international universities during and after the pandemic, with a focus on four key variables: Continuous Professional Development (CPD), Technological Infrastructure (TI), Support Systems (SS), and Proficiency in Online Teaching (POT).

5.1. Phase 1: During COVID

The interviews conducted during Phase 1 revealed a wide range of preparedness levels among educators for online teaching. CPD emerged as a pivotal factor, with many respondents indicating that additional training in digital pedagogy was crucial for enhancing their competence and confidence in online environments. The reliance on CPD aligns with the literature, which highlights the importance of ongoing professional development in adapting to new teaching methodologies (Ertmer and Ottenbreit-Leftwich, 2010). However, the literature also suggests that CPD alone may not be sufficient without the support of robust technological infrastructure and systems. The importance of TI was evident as respondents faced numerous technological challenges, such as unreliable internet connectivity and limited access to digital tools. These findings are consistent with studies by Selwyn (2016) and Beetham and Sharpe (2019), which emphasize that effective online teaching requires not just digital tools, but also the necessary infrastructure to support their use.

Support systems (SS) were also critical during this phase. Respondents highlighted the value of mentoring, peer networks, and institutional support in overcoming the challenges of online teaching. The literature supports this, with

Tondeur et al. (2012) emphasizing that effective support structures are essential for educators to successfully integrate technology into their teaching practices.

5.2. Phase 2: Post-COVID

In Phase 2, the preference among educators shifted significantly, with a majority favoring a return to offline teaching (See **Table 1**). This shift was driven by concerns over the quality of online learning, challenges in maintaining student engagement and control, and issues related to digital literacy. These concerns reflect the limitations of online teaching that were initially masked by the urgency of the pandemic response but became more apparent as educators had time to reflect on their experiences.

The preference for offline teaching contrasts with the enthusiasm for digital tools and platforms seen during Phase 1. This shift is supported by literature such as Wang et al. (2020), who found that educators often prefer traditional teaching methods due to concerns about the efficacy of online learning in delivering quality education. Additionally, the challenges faced in student control and engagement echo findings by Bozkurt et al. (2020), who highlight the difficulties in maintaining effective online learning environments.

Participants in Phase 2 also recommended improvements to the digital learning platforms, the organization of training sessions for both teachers and students, and the full equipping of digital workplaces. This reflects a recognition of the ongoing need for development and adaptation in digital education. The literature supports these recommendations, noting that well-designed digital platforms and continuous training are crucial for effective online learning environments (Huang et al., 2020).

Table 1. Comparative analysis of key findings in Phase 1 and Phase 2.

Variable	Phase 1 (during COVID)	Phase 2 (Post-COVID)	Similarities	Differences
Continuous Professional Development (CPD)	Crucial for enhancing digital competence and confidence.	Ongoing need for training, especially in digital literacy.	Consistent emphasis on the importance of CPD.	Shift from initial enthusiasm to recognizing gaps in training.
Technological Infrastructure (TI)	Challenges with unreliable internet and limited digital tools.	Calls for improved platforms and fully equipped digital workplaces.	Persistent issues with TI.	Growing recognition of the need for better infrastructure.
Support Systems (SS)	Mentoring, peer networks, and institutional support were essential.	Continued emphasis on the need for support in adapting to online teaching.	Need for strong support systems remains constant.	Greater focus on institutional responsibility in Phase 2.
Proficiency in Online Teaching (POT)	Mixed levels of proficiency, with a focus on experimentation and adaptation.	Preference for offline teaching, influenced by concerns about online learning quality.	POT remains influenced by CPD, TI, and SS.	Shift in preference from online to offline teaching.

The findings from this research highlight the profound impact of the COVID-19 pandemic on educators' perceptions and practices. In Phase 1, educators faced immediate challenges in transitioning to online teaching, with CPD, TI, and SS playing crucial roles in their ability to adapt. The initial focus was on survival and adaptation, with many educators embracing the new tools and methodologies out of necessity.

However, as the immediate crisis subsided and educators had time to reflect, Phase 2 revealed a shift in preferences towards offline teaching (see **Table 1**). This

shift underscores the limitations of online learning environments, particularly in terms of student engagement and the perceived quality of education. The findings suggest that while digital tools and platforms can enhance certain aspects of teaching, they cannot fully replace the traditional classroom experience. The study contributes to the literature by providing a nuanced understanding of how CPD, TI, SS, and POT interact to shape educators' experiences during and after the pandemic. The conceptual framework developed in this research highlights the interconnectedness of these variables and offers a foundation for future studies exploring educator readiness for open-learning environments.

The study acknowledges that integrating quantitative methods and mathematical modeling could offer a more comprehensive understanding of how variables impact online teaching. Future research should include quantitative data and statistical indicators to complement qualitative findings, leading to more generalizable conclusions. Additionally, incorporating visual representations such as histograms, comparison charts, and graphs can enhance data presentation, making trends and patterns clearer. Incorporating graphical representations of quantitative data in future research will enhance the conceptual framework and provide a more comprehensive view of the data. This approach will serve as a valuable reference for future studies exploring educator readiness in open-learning environments, addressing the evolving needs of the post-COVID-19 education landscape.

In conclusion, this research offers both theoretical and managerial implications. Theoretically, it contributes to a holistic understanding of the factors influencing educators' proficiency in online teaching. The conceptual framework serves as a valuable reference for future studies, particularly in the context of ongoing changes in the education landscape. Managerially, the study underscores the need for continuous investment in CPD, TI, and SS to ensure educators are prepared for the demands of online teaching. As the post-COVID world continues to evolve, these insights will be critical for educational institutions seeking to support their staff and improve the quality of education delivered through digital platforms. Constraints such as the small sample size, variability in institutional resources, and rapid technological changes must be considered. Budget limitations, administrative policies, and regional disparities may also affect the implementation of recommendations. Addressing these constraints through evidence-based strategies and visual data will support effective decision-making and resource allocation, ultimately improving online teaching practices.

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