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Corresponding Author:

Jeannet Stephen jeannets@ums.edu.my

ORCID ID: <https://orcid.org/0000-0002-2097-8925>

**Online Teaching and Learning in Higher Education: COVID-19 as a
Demarcation Line**

Li Jinghan

University Malaysia Sabah, Malaysia

&

North China University of Science and Technology, China

Jeannet Stephen

University Malaysia Sabah, Malaysia

ABSTRACT

Online teaching and learning have become integral components of modern education, which is a reality strongly underscored by the COVID-19 pandemic. This study examines online teaching and learning in higher education before, during, and after COVID-19 pandemic based on a review of relevant literature. With a specific focus on the difficulties encountered in online teaching and learning in higher education in China, this research adopts a qualitative approach. Semi-structured interviews were conducted to explore these challenges from the perspective of teachers. The findings reveal that the main difficulties reported by participants include uneven access to technology, concerns over instructional quality, issues of cheating and academic integrity, lack of motivation and engagement, and feelings of social isolation among students. Thus, addressing disparities in technology access, ensuring high-quality instruction and academic honesty, enhancing student motivation and participation, and mitigating social isolation are crucial for improving online education in Chinese higher education institutions. By focusing on these areas, universities and policymakers can develop targeted strategies and practical supports for teachers, thereby helping to improve educational outcomes.

KEYWORDS: online teaching and learning; COVID-19; difficulties

Introduction

The advent of online education can be traced back to the mid-1990s, coinciding with the rapid advancement of internet technology (Lee, Yoon, & Lee, 2009). During this period, research related to online teaching and learning gradually gained increasing scholarly attention. Initially, online education was a supplementary resource for students and teachers in their formal teaching and learning process. The COVID-19 pandemic has led to a significant shift in the educational landscape. Institutions at all levels were compelled to transition to online instruction during lockdown periods. This sudden shift to online education, while necessary, has not been without its challenges. Consequently, educational researchers have turned their attention to these issues, seeking to understand and address the problems that emerged from this abrupt move to online learning environments. After the pandemic, institutions at all levels returned to the normal patterns. However, when compared to the period prior to the pandemic, the role of online teaching and learning has undergone a transformation.

Focusing on online teaching and learning in higher education, this research sets COVID-19 as a demarcation line, reviewing relevant research in different periods to reveal the evolution of online teaching and learning in higher education. And narrowed the scope to Chinese settings to explore the difficulties that emerged in online teaching and learning, especially when online form is the only teaching and learning approach, through interviews. Based on the research findings, it is hoped to improve the effectiveness of online teaching and learning in higher education, not only in China, but worldwide.

Online Teaching and Learning in Higher Education

Through a comprehensive review of the literature, the development of online teaching and learning is reflected with the COVID-19 pandemic as its demarcation line (Figure 1).

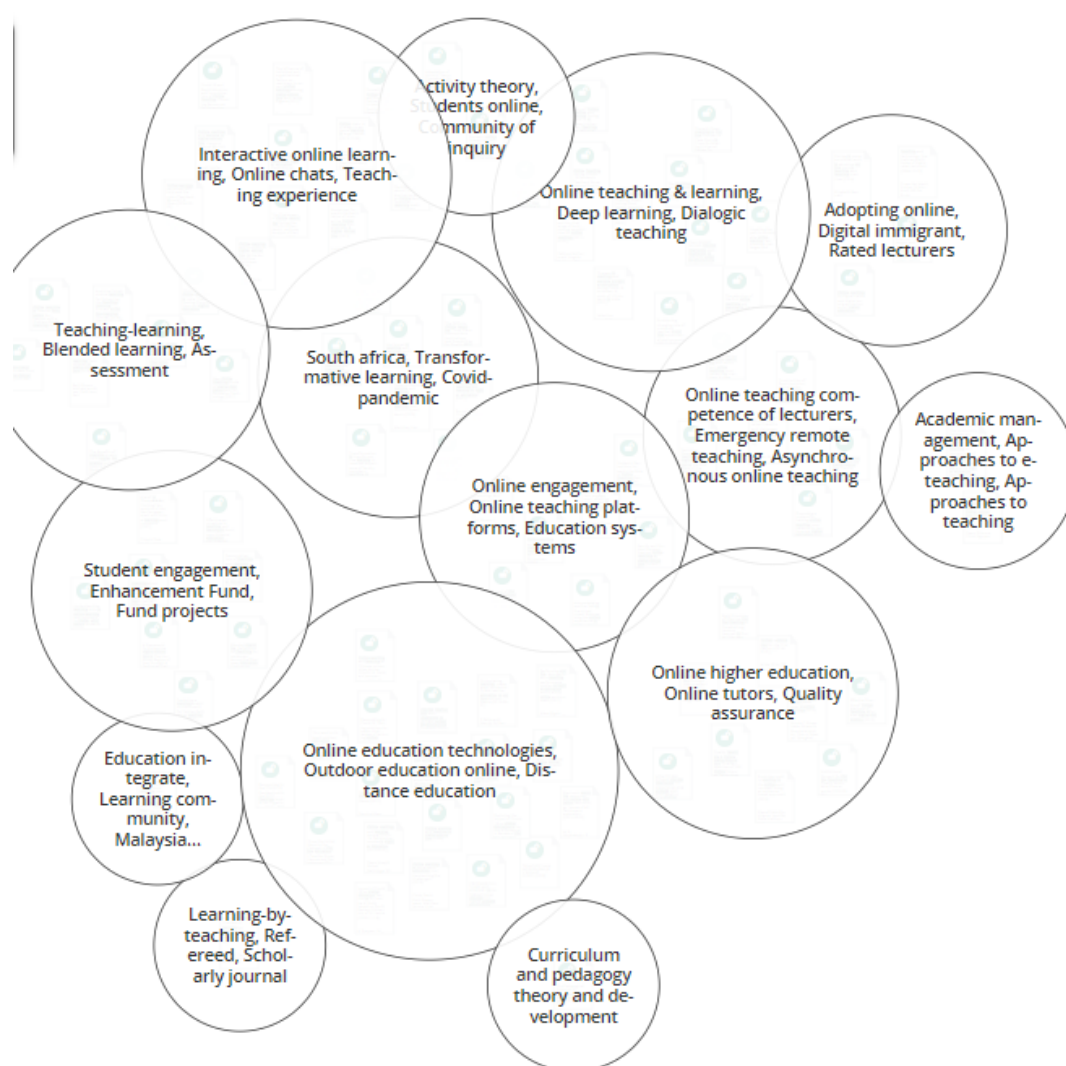


Figure 1: Knowledge map of online teaching and learning in higher education

Online Teaching and Learning in Higher Education before the COVID-19 Pandemic

A review of literature reveals that enhancing the quality of online education has become a prominent focus in academic research (Jaafar et al., 2022). Scholars have proposed various methods to increase its effectiveness. Among these, faculty readiness was identified as a primary strategy before the COVID-19 pandemic. Initiatives to improve faculty readiness generally fall into two categories: pedagogical and technical.

Many scholars contend that when teaching online courses, instructors take on roles that are different from those of typical classroom teachers (Sammons, 2003). Online educators need assistance and training for these novel jobs. Case studies of faculty development programs suggest that these initiatives can facilitate instructors'

transition from face-to-face instruction to online learning environments (Lee & Hirumi, 2004).

Effective pedagogical techniques for online instruction have been the subject of numerous research projects. For instance, Partlow and Gibbs (2003) found that online courses based on constructive principles should be relevant, interactive, project-based, and collaborative while giving students some choices or control over their learning. On the basis of a framework for effective teaching methods in face-to-face instruction in higher education, Keeton also looked into good online instructional techniques. In this study (Keeton, 2004), Keeton spoke with post-secondary instructors who evaluated the efficacy of online teaching techniques. Higher scores from these instructors were given to online teaching methods that "create an environment that supports and stimulates inquiry," "broaden the learner's experience of the subject matter," and "elicit active and critical reflection by learners on their developing experience base." In actuality, preferred and actual online instructional approaches were very different from one another. Numerous initiatives have been made over the past twenty years to incorporate new Internet technologies into higher education's teaching and learning procedures. Cases involving the use of blogs to encourage student participation and reflection have been documented in a number of research (Baggaley, 2003; Martindale & Wiley, 2005; Oravec, 2003). Moodle used in blended learning for online student participation have also received support from some studies (Chen & Ma, 2007; Liang, 2007), and podcasting gets the attention of teachers for its potential as an educational tool (Sloan, 2005).

Although discussions in the literature relate to effective practices in the use of emerging technologies or proper pedagogy for online education, these methods aim to improve the effectiveness of classroom learning. In other words, before COVID-19, educational practices as well as researches related to online learning all aim to seek methods to improve normal school education process.

Online Teaching and Learning in Higher Education during the COVID-19 Pandemic

Studies during the pandemic period focused on the obstacles or challenges that faced the institutions, teachers, students, and administrators. A review of literature reveals three categories of challenges: 1) readiness/preparedness for online teaching and learning, 2) engagement in online teaching and learning, and 3) the efficacy of online education.

According to a study (Suresh et al., 2018) involving 424 universities from around the world, institutions were impacted by the pandemic in terms of research, conferences, international mobility, and the delivery of education. The majority of universities stated that they were forced to adopt online teaching and learning and that they had to overcome many obstacles, the most significant of which were access to technology

and instructors' capacity to deliver online courses. Yidana et al (2023) did an empirical review using the scoping review method on challenges facing online teaching and learning in African higher education institutions and found that the lack of preparedness issues includes low ICT literacy among students and teachers, inadequate ICT infrastructure, weak pedagogical skills of teachers, and a weak institutional policy framework to support online learning. The findings also showed that students in most of Africa have limited access to and participation in online learning because of poor internet connectivity, a lack of electricity, a lack of devices like laptops and smartphones, and higher data costs.

Therefore, some researchers turned to explore solutions toward the emerging challenges. The interaction between students and teachers should be considered during this optimization process, and the language used should be clear but contain terms particular to the students' field of study (Goian, 2010/2004). Flores et al. (2024) did a study on college students' perception and experience in online learning during lockdown. According to the reflection of more than two thousand students in Portugal, they perceived less difficulty in online learning with more detailed feedback of teachers. Therefore, teachers can improve students' satisfaction in online settings by providing rich and detailed feedback. In addition, Huang et al. (2020) identified seven key elements that form the foundation of online education and play a crucial part in maximizing learning under unique conditions like those brought on by the pandemic. These include managing and developing internet infrastructure to prevent interruptions, especially during video conferences; using friendly tools to help students assimilate and comprehend information; providing dependable, interactive, and diverse electronic resources; using social networks to build online communities for students to reduce feelings of isolation; and using various effective techniques like debates or learning based on discovery and experiences; offering services to educate students and teachers on the most recent regulations passed by governments and universities while promoting cooperation between these organizations. Noor and Lim (2023) explored effective solutions toward the challenges in online education amid the pandemic from the perspective of online tools. They found that Mentimeter is able to accommodate different learning styles, so that to improve both teachers' teaching experience and students' learning experience in online settings.

Online Teaching and Learning in Higher Education after the COVID-19 Pandemic

The evolution of online teaching and learning in higher education has been forced to speed up after the pandemic. And the influences of the pandemic to education will be a long-lasting matter. Maome et al. (2024) proposed that higher education institutions, policymakers, and stakeholders must collaborate to guarantee that online learning remains a viable and effective mode of instruction in the post-COVID-19 age. Research indicates that face-to-face, online, and blended modes each possess distinct characteristics in terms of pedagogical implementation, perceived value, and learning

effectiveness (Sharma & Shree, 2023). Therefore, a thorough understanding of the similarities and differences among these models, as well as the instructional strategies they require, is essential for making informed selections and achieving optimal teaching outcomes.

A study in 2024 (Choo & Ng, 2024) explored asynchronous and synchronous online education with a mixed method. It focused on how the teaching presence of instructors affects students' learning in asynchronous or synchronous situations. The quantitative result revealed that there was no statistically significant difference between the two groups in perceived teaching presence. The qualitative results indicated that one important element in boosting teaching presence in both groups is the instructor's interaction with the students. Furthermore, it appears that while the instructor's facilitation was crucial for students in the synchronous group, students in the asynchronous group appreciated the instructor's positive traits and feedback. s.

Therefore, to provide high-quality education to students, higher education institutions must create a flexible and accessible education system, rethink pedagogical approaches, and incorporate best practices in online learning (Maome et al, 2024). Ormilla and Ongan (2025) proposed more specific strategies to enhance the effectiveness of online teaching and learning based on a mixed-method study in the Philippines. Students excepted for time management and comfort in online learning. Therefore, the need for a flexible class schedule, faculty training, alternative dissemination methods, and institutional support is highly emphasized. Pontillas (2024) examined the role of language in online education. Rhetorical questions and affirmations may appear democratic, but they really reinforce the teacher's power and give the sense of equality in online classes. The research highlights the importance of understanding language-power dynamics in online education and suggests incorporating training on language and power dynamics into teacher professional development programs.

Although online education is no longer the exclusive mode of instruction in the post-pandemic era, it has evolved into a structural component of the educational system, particularly in higher education. This trend is propelled by growing global internet accessibility and the recognized efficacy of online tools in enhancing formal education. In light of this, educators, administrators, and researchers should capitalize on the momentum generated by the pandemic-era shift to digital learning. A critical focus should be placed on examining its advantages, limitations, impacts, and effective strategies to optimize its integration into school education. Such efforts are crucial not only for improving teaching and learning outcomes but also for building a more resilient educational ecosystem capable of responding to future sudden crises.

Online Teaching and Learning in Higher Education in Chinese Public Universities

Since the emergence of e-learning in the 1990s, the Chinese government has consistently prioritized its development. Consequently, online teaching and learning had already established a presence within Chinese higher education prior to the COVID-19 pandemic. While the pandemic served as a primary accelerant for the widespread shift to online instruction, it also brought into sharp relief several critical problems that impede its efficacy. A clear understanding of these issues is a necessary precursor to improving educational outcomes.

In Jiang et al.'s study in 2021, factors that predicted satisfaction with online learning platforms during the COVID-19 pandemic were explored. The results found that computer self-efficacy and the perceived usability and ease of use of the platform directly impacted the satisfaction of Chinese university students with online learning platforms and also had an indirect relationship with students' autonomy in online learning settings. Li and Che (2022) explored the complications and strategies for coping with online learning from the Chinese universities' perspective during the period of the COVID-19 outbreak. Their results show that low-grade students, including freshmen and sophomores, were more likely to succumb to the decrease in grades associated with taking courses online. One aspect related to decreases in performance in the online learning environment is the physical environment for studying, studying at home or in a dormitory is clearly associated with decreases in performance. In addition, students reported experiencing health issues such as eye strain (84%) and cervical stiffness (79%), while other health-related concerns experienced by them included mental conditions like anxiety (66%) during online learning.

To explore in detail the difficulties that emerged in online teaching and learning in higher education in China, this research offers angles from teachers' perspectives through semi-structured interviews.

Method

Research Design and Rationale

This study adopted a qualitative phenomenological approach. The objective was not to seek statistical generalizations but to achieve a deep, contextualized understanding of the lived experiences of university teachers with online instruction (Kabilan & Annamalai, 2022). This design is particularly appropriate for exploring complex phenomena and eliciting detailed personal perspectives on the difficulties encountered.

Participant Selection and Sampling Strategy

A purposive sampling technique was employed to identify information-rich cases that could provide diverse and in-depth insights. This approach replaces random sampling to ensure the selected participants directly represented a range of experiences relevant to the research question.

Five full-time teachers from Chinese public universities were recruited. In qualitative phenomenological research, the sample size is guided by the principle of data saturation (the point at which new interviews cease to yield new thematic insights). A sample of five was anticipated to be sufficient to capture the core shared experiences while allowing for in-depth analysis, with the commitment to recruit additional participants if saturation was not achieved. There are four sampling criteria: 1) seniority (including early-career, mid-career, and senior professors), 2) course type (including theoretical courses, practice-based courses, and seminar-style courses), 3) students' academic field (including courses delivered to students in humanities, engineering, law, medicine and Arts).

Data Collection

Data were collected through semi-structured, one-on-one interviews conducted via online video conferencing platforms (Tencent Meeting). A semi-structured interview guide was developed, containing open-ended questions organized into three sections: 1) background information (e.g., seniority, course type), 2) detailed exploration of difficulties in online teaching and learning (e.g., pedagogical, technological, interactional), and 3) suggestions and future expectations. The guide allowed flexibility to probe emergent topics.

Prior to each interview, informed consent was obtained, emphasizing the voluntary nature of participation, confidentiality, and the right to withdraw. Participants were informed that the session would be audio- and video-recorded. Each interview lasted approximately 45-60 minutes. The recordings were transcribed verbatim to ensure accuracy for analysis, and all identifying information was removed from the transcripts to anonymize the data.

Data Analysis

A systematic thematic analysis following the six-phase framework by Braun and Clarke (2006) was used to analyze the transcript data.

Familiarization: The researcher repeatedly read the transcripts while listening to the

recordings to immerse in the data and note initial ideas.

Generating Initial Codes: Significant phrases and statements related to the research question were systematically identified and labelled with descriptive codes across the entire dataset using qualitative data analysis software MAXQDA.

Searching for Themes: The initial codes were collated and grouped into potential overarching themes that captured patterns of meaning.

Reviewing Themes: The candidate themes were checked against the coded data and the entire dataset to ensure they formed a coherent pattern. Themes were refined, split, and discarded as necessary.

Defining and Naming Themes: The essence of each theme was clearly defined, and concise, descriptive names were assigned.

Producing the Report: The analysis was woven into a narrative report, selecting vivid and compelling extract examples from the transcripts to illustrate each theme.

Ensuring Rigor and Trustworthiness

To enhance the credibility, dependability, and confirmability of the study, several strategies were implemented.

Member Checking: A summary of the interpreted findings was shared with participating teachers to verify that the analysis accurately reflected their intended meanings.

Peer Debriefing: The coding scheme and thematic structure were periodically discussed with an independent academic peer not involved in the study to challenge assumptions and reduce researcher bias.

Audit Trail: A detailed record of the research process, including raw data, transcripts, coding notes, and analysis decisions, was maintained to provide a clear audit trail.

Results and Discussion

Through a systematic thematic analysis, five themes are finally confirmed based on the interview data. The results are listed in Table 1 with examples from the participants' expressions.

Table 1. Coding results of the semi-structured interview

Code	Definition	Examples of data excerpts
Access to technology	It refers not only to the mere availability of hardware devices (e.g., computers, smartphones) and stable internet connectivity but also extends to issues of digital equity and the digital divide.	<i>Uneven internet access in rural areas create inequities. Some students submit assignments late due to connectivity issues, while others struggle with asynchronous materials.</i>
Quality of instruction	It concerns the pedagogical challenges in effectively delivering curricular content and achieving desired learning outcomes in a virtual setting. It moves beyond mere content delivery to address the pedagogical transformation required for online spaces.	<i>Clinical training is nearly impossible to deliver effectively online. We ' ve resorted to 3D models and case studies, but students often feel unprepared for real-world applications. The gap between theory and practice widens.</i>
Cheating and academic integrity	It refers to the erosion of academic integrity and the proliferation of dishonest academic behaviors exacerbated by the remote and digitally mediated nature of online learning. It highlights the challenges in maintaining the validity and reliability of assessment processes.	<i>plagiarism in online assignments has become more prevalent, requiring extra effort to monitor</i>
Motivation and engagement	It captures the psychological and behavioral challenges related to sustaining students' active involvement, interest, and self-regulation in the learning process.	<i>The biggest issue is student engagement. Despite using interactive tools like polls or breakout rooms, the lack of face-to-face interaction reduces the dynamism of discussions.</i>
Social Isolation	It describes the perceived sense of detachment, loneliness, and lack of community belonging that students and faculty may experience in online learning environments.	<i>Offline, I can read the room; online, I'm teaching into a void.</i>

Access to Technology and Digital Readiness

The transition to online learning during the COVID-19 pandemic, involving 17.75 million college students in China, according to a press conference of the Chinese Ministry of Education in May 2020, exposed significant challenges related to digital readiness—the capacity of individuals, institutions, and systems to effectively adopt and utilize digital technologies (Nasution et al., 2018). A critical barrier was the lack of basic infrastructure readiness, a core dimension of digital readiness. A study by the Chinese Ministry of Education in 2019 (Yan et al., 2021) found that more than 50% of students in Chinese universities lacked access to a computer or a stable internet connection, which severely impacted their learning experience.

This digital divide, reflective of varying levels of digital readiness, disproportionately affected students from rural areas and lower socio-economic backgrounds. A report by the China Youth Daily highlighted that nearly 70% of low-income students lacked access to necessary devices or a stable connection. This disparity in infrastructure readiness risked exacerbating existing educational inequities.

In response, universities and the government implemented measures to enhance systemic organizational and policy readiness. Many universities provided direct support, such as loaning laptops, offering internet subsidies, and training on online learning platforms (Zou, 2022). At the national level, initiatives like the "Broadband China" policy, launched in 2015 and reinforced in 2020 with plans to connect all schools, aimed to improve foundational infrastructure (Cheng, 2020). The government also encouraged universities to assist students through subsidies (Chang & Yano, 2020).

The issue of access, framed through the lens of digital readiness, is a global challenge. Research indicates that the digital divide negatively impacts student outcomes, and those without adequate access are at a higher risk of dropping out (Dolan, 2016). Therefore, building comprehensive digital readiness—encompassing infrastructure, individual skills, and organizational support—is crucial for ensuring equitable academic opportunities in the evolving landscape of higher education.

Quality of Instruction and Technological Pedagogical Content Knowledge (TPACK)

According to Khan (1997), online instruction is a cutting-edge method for delivering classroom instruction to a distant audience utilizing the Web as the medium. In order to effectively educate in the digital age, the TPACK framework adds a third, technology-related core component to Pedagogical Content Knowledge (PCK) model (Mishra & Koehler, 2006). Therefore, pedagogical knowledge (PK), content

knowledge (CK), and technology knowledge (TK) are the three main parts of the TPACK model (Schmid et al., 2024).

The transition to online learning necessitates a conscious reevaluation of the roles played by both instructors and students. As Volery (2000) contends, the academic function of the instructor must shift from being a "sage on the stage" or a mentor to acting as a catalyst for learning. Consequently, the instructor is tasked with dual responsibilities: serving as both a facilitator and an instructional designer (Zheng & Smaldino, 2003).

The majority of teachers and students are deeply accustomed to face-to-face instruction, which made the abrupt transition to online courses during the COVID-19 pandemic profoundly challenging. This shift exposed various problems, particularly concerning the quality of online instruction—an aspect that had received scant attention from both educators and university administrators, despite over a decade of development in Chinese university online education programs. Ironically, instructional quality has been established as one of the most significant predictors of student achievement, proven in face-to-face contexts to outweigh factors such as teacher certification, class size, and classroom culture (Slater et al., 2012). Consequently, it is imperative to prioritize instructional quality in online settings. Its improvement can directly enhance student engagement in virtual classes. Therefore, empowering teachers through targeted training to develop their TPACK emerges as a crucial strategy for fostering more effective and dynamic online learning environments.

Cheating and Academic Integrity

While the digital nature of online education can facilitate new forms of cheating, making integrity enforcement difficult for instructors, it is a misconception to view this as a uniquely online problem. Research intriguingly suggests that students might be more inclined to cheat in face-to-face classroom settings than in online courses, a counterintuitive finding that merits further consideration (Peterson, 2019).

Despite the lack of conclusive evidence indicating a significantly higher incidence of cheating in online courses compared to traditional settings, the perception that academic dishonesty is more prevalent in digital learning environments remains widespread. This belief, coupled with the rapid expansion of online education during the COVID-19 pandemic, has brought the issue of academic integrity in online courses into sharp focus. The stakes of academic integrity are profoundly high, as it is inextricably linked to a learner's self-identity, the academic mission of the institution, the university's reputation, and the value of its conferred degrees, making it a sensitive and critical topic for researchers, administrators, and society at large (Roberts & Hai-Jew, 2009).

A primary driver of academic dishonesty is the pressure to attain high grades. When

presented with an opportunity to dishonestly improve their scores, many students—particularly those who prioritize final grades over authentic learning—may resort to cheating, often rationalizing their actions. This behavior underscores a misalignment between the goal of learning and the pursuit of grades.

In conclusion, academic integrity in online learning demands increased and concerted attention from educators, universities, researchers, and educational authorities, not only within China but on a global scale. Upholding rigorous standards of integrity is instrumental in achieving meaningful and effective educational outcomes.

Motivation and Engagement

Online courses require students to be more self-motivated and disciplined than in-person courses. Some students struggle to stay engaged with the course material or to keep up with coursework.

According to a study on students' engagement in online courses in 2016, five factors were found to be perceived by students as the important elements in promoting satisfaction in online learning experience, which are (1) problem-centric learning with clear expositions, (2) instructor accessibility and passion, (3) active learning, (4) peer interaction, and (5) using helpful course resources (Hew, 2016).

Advances in digital technologies have established online learning environments as a powerful lever for fostering students' intellectual engagement, whether deployed as the sole mode of instruction or integrated within a blended learning model. But it's a huge challenge for teachers to make full use of the high-tech tool. It is crucial to think about how to create a friendly environment for students that offers a variety of opportunities for interaction in online courses (Martin & Bolliger, 2018). For example, establishing guidelines or protocols for online interaction, demonstrating thought-provoking contributions to discussion forums by teachers, and deftly utilizing small group spaces (like break-out rooms in online teaching platforms) to give all students the chance to ask and respond to questions (Ferrer et al., 2020).

Fostering student motivation and engagement remains an enduring challenge in digital learning environments. This challenge was exacerbated during the COVID-19 pandemic, when education relied exclusively on online delivery, transforming it into an urgent priority. Consequently, a synergistic approach involving teachers, universities, educational authorities, and parents is essential to develop effective solutions.

Social Isolation and Community of Inquiry

There is a less of interaction both between teachers and students in online classes. The online format may compound feelings of loneliness and a sense of isolation for certain students, especially those who are new to the university or have pre-existing social anxieties, as it can limit the organic, informal interactions that foster a sense of belonging. According to a study on computer literacy classes, students' feelings of social isolation are at higher rates in online learning than in face-to-face courses, which affects their decision to drop the courses they enroll in (Ali & Smith, 2015). In online settings, students face difficulties in quickly adjusting to online teaching and learning. There are various problems like a lack of socialization, insecurity, sedentary lifestyles, an increase in the amount of time they spend online. All of the problems will have a detrimental effect on young people's wellness, particularly in terms of emotional recovery, anxiety, and academic performance, thus counselors and psychologists must constantly be involved (Irawan et al., 2020).

The Community of Inquiry (CoI) framework was first presented by Garrison et al. in 2000. The term "community," which is frequently used in educational studies, describes the emotional or cognitive bonds formed between students who are geographically distant. A feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together are three characteristics that McMillan and Chavis (1986) characterize as a broad construct of community. According to Rovai (2000), strong sense of community increases the flow of information, the availability of support, commitment to group goals, cooperation among members, and satisfaction with group efforts.

Therefore, within the framework of the Community of Inquiry (CoI), targeted interventions can systematically mitigate students' social isolation in online learning environments. Specifically, structured training programs for both students and instructors are instrumental in enhancing social and cognitive presence. When students are guided to project themselves as authentic individuals ("real people") in digital spaces, their social presence is significantly strengthened. Concurrently, teachers' sustained and structured reflection on their teaching practices can foster a more profound cognitive presence among learners. Furthermore, through deliberate instructional design and organization—encompassing facilitated discourse and direct instruction—the feeling of isolation can be substantially alleviated, thereby cultivating a more engaging and supportive online learning community (Flock, 2020).

Conclusion

In conclusion, safeguarding educational continuity and academic rigor in times of crisis necessitates a resilient online learning ecosystem built on the synergistic efforts of educators, institutions, and administrators. For the specific contexts in higher education, this model yields critical, actionable implications:

For educator development, there is an urgent need for targeted professional development in digital pedagogy. Training must transcend platform literacy, equipping instructors with strategies for fostering interactive language practice, facilitating collaborative academic tasks, and providing effective feedback in virtual environments.

For curriculum and institutional policy, institutions must champion curriculum design that leverages blended and flipped models, reserving synchronous time for the communicative practice vital for language acquisition. This must be supported by institutional investment in robust digital infrastructure and stringent policies ensuring accessible, standardized course design that aligns with learning outcomes.

For administrative leadership, policymakers and educational leaders must establish macro-level frameworks for quality assurance and equitable access. This includes allocating dedicated funding for digital resource development, subsidized technology for disadvantaged students, and implementing rigorous, regular program evaluations.

Collectively, these stratified yet interconnected measures will not only fortify the education system against immediate disruptions but also contribute to a more adaptive, inclusive, and robust future for higher education.

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