Challenges of Online Teaching During COVID-19 in the Context of Higher Education: From Teachers' Perspectives

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Abstract: Due to the outbreak of Covid-19, most of the world's teaching activities had to shift online in a few days or weeks, and this sudden and unprecedented teaching practice brings significant challenges to teachers. However, there are numerous empirical research studies conducted to understand the challenges of online teaching; these relatively decentralized and independent studies involve teachers and students across different countries, and a review paper is needed to summarize these challenges to form a new theoretical framework. Therefore, this paper aims to review the challenges teachers face in online teaching during Covid-19 in the context of higher education. The results demonstrated four dimensions of challenges teachers faced during online teaching in the higher education context: technological, pedagogical, psychological, and managerial. Challenges and obstacles from four dimensions hinder college teachers' success in online teaching during Covid-19. The results help us better understand the challenges that teachers encountered when teaching online during Covid-19 in the context of high education, thus providing sufficient assistance for educational institutions, school managers, and relevant key stakeholders to carry out online teaching practices smoothly in other emergencies in the future.

Keywords: challenges, higher education, online teaching, Covid-19

1. Introduction

To mitigate the risks posed by Covid-19, face-to-face teaching is shifting to online teaching on an unprecedented scale. According to UNESCO, fifteen countries have ordered nationwide school closures, and 14 have implemented localized closures, spanning Asia, Europe, the Middle East, and North America [1]. This means that most of the teaching practices in the world have to be transferred to digital platforms within days or weeks, which brings significant challenges to teachers. Evidence from a growing number of studies has established that teachers in online teaching activities faced great challenges. As argued by An et al., lack of student participation and engagement (or lack of parental support), students without access to technology, concerns about students' well-being, no face-to-face interactions with students, no work-life balance, and learning new technology were the main challenges faced by K-12 teachers during the pandemic [2]. According to Arora & Chauhan, maintaining work-life balance, home disturbance, and difficulty in establishing personal connection with the pupils were the three critical challenges for teachers working at home [3]. By using an

inductive approach, Okyere et al. found that difficulties teaching practically oriented courses, assessing students and embracing change, anxiety and stress, increased workload, maintaining students' engagement, limited knowledge impact and output, inadequate teaching environment, and unstable Internet were among the challenges faced by online teaching in Fiji during Covid-19 [4]. The research to date has tended to focus on empirical studies rather than review papers. In contrast, review papers are precious to researchers because they can give readers a current and well-organized summary of the literature in a particular field [5]. Given this, the purpose of this paper is to fill the gap by reviewing the challenges teachers face in online teaching during COVID-19 in the context of higher education.

2. Four Dimensions of Challenges in Online Teaching During COVID-19 in the Context of Higher Education

Switching to online education in a few days or weeks during Covid-19 means online teaching is associated with various challenges. Garcia-Morales et al. argued that some barriers and challenges that have emerged in adapting to the wholesale transformation of the teaching-learning process could be understood from three perspectives involved in the learning process: pupils, professors, and institutions (i.e. universities) [6]. While Roy et al. believed that the challenges of online teaching can be categorized into three specific groups, pedagogical, technical, and management-related [7]. Ahmed & Opoku demonstrated three main categories that many academics had questioned; they are technological, pedagogical, and psychological [8]. By drawing on recent literature, this article proposes a framework along four dimensions—technological, pedagogical, psychological, and managerial—to describe, organize, and explain the challenges teachers have faced in online teaching during COVID-19 in the context of higher education.

Table 1: Categories, contents and standpoints of previous studies.

Categories	Contents	Standpoints
Students [6]	University Students	Technical problems [9]; Difficult to maintain attention [10];
Professors [6]		Specific communication abilities in online situations, operate various teaching-learning tools properly, the need for specific skills and solutions specific problems [6]; staff digital literacy [11];
Institutions [6]	Universities	Financial strains, limitations arising from the current IT infrastructure, and a completely disruption of daily business [12]; Attitudes towards e-learning and pedagogy in universities [11];
Pedagogical [7],[8]	The availability of instructional materials, active participation in learning, evaluations and feedback, and teaching methods [8];	Lack of pedagogical preparedness, Inappropriate curriculum [7]; Students' engagement online, difficulties in using the same lecture slides as face-to-face teaching [8]; Lack of online pedagogical training [13];

Table 1: (continued).

Technical [7],[8]	Difficulties with speed and connectivity, access to technical help, familiarities with teaching platforms and tools [8];	Lack of technical resources, Lack of technical preparedness [7]; Delays in joining the classes caused by students' connectivity problems, occasional interruption of internet connection, share complex mathematical equations and derivations on the screen [8]; Existing IT infrastructure [11];
Management-Related [7]	Time Management [7];	Interrupted communication [7]; Designing lessons and providing feedback [14];
Psychological [8]	Time management, the degree of interaction and participations between teachers and students, among students, and dealing with frustrations and anxieties [8] ;	Deal with students' lack of peer interaction, and their anxieties, uncertainties and isolation [8]; Absence of meaningful interaction space [9]; Two-way interactions' compatibility problems [9]; Concerns for mental health of employees [12];

2.1. Technical Challenges

The technological challenges that affecting the process of online teaching are faced by familiarity with access to technical support, teaching platforms and tools, and speed and connectivity issues [8]. Specifically, in Huang's research, 70% of the teachers considered that being familiar with and choosing educational platforms and software became a challenge during the online teaching process [15]; some of them even lacked tools to participate in virtual teaching successfully [16]. Software issues, i.e., lack of technical support [16],[17]are the main challenges to using online teaching in this difficult time. It is probably due to the sudden shift to online teaching so that teachers do not have enough time to receive the necessary technical training. Another problem during online teaching is the lack of speedy and uninterrupted Internet connectivity [7]. So do students; the results showed that access to online platforms is still minimal because the majority of students either lack an internet connection at home or have an inadequate network that prevents them from accessing online classes [16].

2.2. Pedagogical Challenges

Pedagogy is concerned with the relationship between teaching and learning [18], access to teaching resources, active learning participation, evaluations and feedback, and teaching methods are the key pedagogical obstacles [8]. Online education is a new way of teaching move from the old teaching paradigm to a new paradigm that adapt digitization functions; it is not simply moving traditional teaching to the Internet. Therefore, compared with offline education, the lack of pedagogical preparedness, inappropriate curriculum [7], unable to use collaborative or active teaching methods [19], lack of obvious feedback on teaching and learning, and need to adjust teaching methods to meet the new situation [15] have become constraints that teachers need to overcome during the pandemic. A survey in Montenegro demonstrated that assessing knowledge through the Internet was problematic; some teaching personnel also believed that students' cognitive activity and engagement were not correctly promoted by online teaching [20].

2.3. Psychological Challenges

The psychological challenges are often related to the level of engagement and interaction between students and teachers, between students and other students, and dealing with frustrations and anxieties [8]. Neither teachers nor students seem well prepared for the transition from offline to online teaching [16]. As a result, it is hard for teachers to do their practical work, monitor students and give proper guidelines to students; students' low interest and absence of student participation also hinder the success of online teaching [15]. Since online teaching cannot communicate with students face-to-face, being unable to organize effective interaction with students online has also become an urgent problem for teachers [7]. This is the main difficulty professors emphasize, namely the specific communication abilities in an online context [6]. In addition, teachers may face mental health problems due to social isolation, including depression and suicidal behaviours [21]; they also need to deal with the logistical challenges of creating stress and anxiety for students due to the limited accessibility to online teaching platforms [22].

2.4. Managerial Challenges

Managerial challenges refer to time management [8]and student management. Time management is an issue that teachers pay more attention to in online teaching [23]. Work-life balance is a particular problem for them. Teachers, especially young female teachers, reckoned that balancing online classroom preparation and home obligations was difficult [7]. Teachers stress that much more time is spent preparing online educational content, in line with a study that it takes twice as long to prepare online educational content as it does to design traditional educational materials [19]--they need adequate time to redesign goals, materials, classroom activities, and evaluation procedures of the course objectives [7]. Another manage-related issue was found to be related to student management. Previous studies claimed that it is difficult for students to concentrate in a purely online context when they are studying at home [24]; it is reported, however, ensuring effective student learning helps teachers to reduce barriers to e-learning [11]. But some teachers did not take seriously keeping track of students' attendance; thus, the rate of attendance fell rapidly, and students even rarely participated in the discussions [7].

3. Discussions for Overcoming Challenges

Despite the above difficulties, constraints, and challenges teachers face during online teaching in higher education, several positive measures were employed to achieve quality online teaching.

Firstly, to mitigate the technical barrier, multi-faceted efforts is required. The global higher education sector must make a substantial digital transformation to change their everyday business processes to adapt to the challenges posed by Covid-19 [25]. The study's findings thus echo Krishnamurthy in that the era of radical technological change brought about by the impact of Covid-19 has forced the global higher education system to accelerate digitization [12]. Institutions also need to provide adequate physical IT infrastructure, bandwidth, and digital literacy resources to address learning space equity for students from lower socioeconomic backgrounds [11]. In addition, teachers are encouraged to learn the possibilities of using online platforms for teaching, and more instructions and additional support were given to teachers who are older than 55 years by IT teams [19] to overcome the difficulties and barriers arising from the teaching mode transformation.

Secondly, to alleviate the pedagogical obstacles, university teachers need to adapt to the new mode of online teaching. In a digital educational environment, creative teaching methods built on teacher-student collaboration and the effective use of modern technologies are the key points in educational process organization [19]. In terms of creative teaching methods, teachers must fully revamp their lesson plans to accommodate online delivery; they are also urged to introduce group activities to students' interest and stimulate collaborative learning [6]. For effective use of modern technologies, on the one hand, technology is used by teachers to decompose and re-invent teaching, learning, evaluation and certification to develop new and sustainable models of online learning [12]; on the other hand, LMS, ICT, and other tools should be used to organize and carry out students' education and scientific research activities remotely [19], such as organizing group discussions or online forums for students interaction [13].

Thirdly, regarding psychological challenges, Hew et al. [26] and Dietrich et al. [27] suggested improving teacher-student interaction. According to Hew et al., teachers alternated PowerPoint slides with digital handwriting on iPads to keep students interested in the face of monotony. This finding also resonates with Dietrich et al., whereby lecturers are recommended to use the whiteboard option provided by the videoconferencing software, so that all students can see all the annotations. For communication and interaction among students, they are encouraged to use a MIM app (such as WeChat) on mobile phones, thus compensating for the time lag between postings and replies due to asynchrony [26]. Now that teachers' psychological pressure has increased by the need to re-learn various educational technologies, change education and teaching concepts, historical teaching habits, and instructional tactics and methodologies [28], universities should pay more attention to their equipment and tools and focus on their working conditions at home [27]. Instructors were trained online on students' well-being to enable students to regain a sense of control over their learning journey in a stable learning environment [22].

Finally, concerning managerial challenges, new rules are needed for online teaching. Online teaching preparation has been reportedly time-consuming [14]; therefore, universities should provide teachers with an efficient and effective educational system to deliver online teaching [23]. The ergonomics of instructors' health protections, connection time, and respect for the separation between personal and professional lives need to be given more consideration by higher education institutions [27]. In the meantime, teachers should set up rules for students' online engagement [25]. For example, when an online class starts, professors should remind students to turn on the webcam and silence their microphones when they are not speaking [26]. This result supports Le et al.'s that teachers should combine asynchronous and synchronous activities to regulate student involvement. [13].

4.   Conclusion

Online teaching has developed rapidly all over the world during the Covid-19 pandemic, and this study reviews the challenges teachers face in online teaching in the context of higher education. Based on recent research worldwide, we draw the following conclusions about what dimensions of

challenges higher education teachers face in online teaching, and how to deal with them in the future. The results show that although different scholars have conducted different studies based on their national conditions, the challenges can be understood from four dimensions: technical, educational, psychological, and managerial. To be specific, lack of technical support, unfamiliarity with teaching platforms and tools, and Internet speed and connectivity issues are the main technological challenges, we suggest that higher education institutions should not only accelerate digital transformation but also do an excellent job in logistics supporting. Teachers also need to learn by themselves to adapt to new technologies. Pedagogical Challenges are mainly reflected in the process of teaching and learning, and we suggest that teachers innovate teaching methods and use modern technology to adapt to the new mode of online teaching. The degree of engagement and interaction between teachers and students and certain kinds of negative emotions are the main problems faced by psychological challenges, and we suggest that teachers increase teacher-student interaction through the design of teaching activities and universities should pay attention to online teaching-related issues that may cause frustration or anxiety among teachers. Time management and student management are the primary management problems, and we suggest universities not only provide efficient teaching platforms for teachers but also respect their separation of work and life; teachers are also establishing new rules for students to receive online education to improve the teaching quality. When applied as part of crisis management strategy, this proposed framework has the potential to provide sufficient assistance for educational institutions, school managers and relevant key stakeholders to carry out online teaching practices smoothly in other emergencies in the future.

Authors' Contributions

The submitted version was approved by the author, who also contributed to the manuscript.

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