



Reflecting on Online Learning Experiences of Secondary School Teachers and Students during COVID-19

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Abstract

This paper examines the experiences of secondary-level students' learning and teachers' teaching strategies via Zoom during the COVID-19 pandemic in Nepal. The government formally announced the closure of physical classrooms to mitigate the outbreak of the coronavirus. This study utilised a qualitative interpretive research design and conducted online semi-structured interviews with the participants, observed their online classes and conducted documentary analysis. The findings of this study indicate that online learning in urban areas provided a flexible and alternative mode to physical classrooms. However, students and teachers faced challenges, such as irregular power supply, poor internet connection, expensive mobile data, lack of digital devices and limited ICT skills among teachers when it came to managing and delivering online classes. Additionally, the study highlights the inability of rural students to access online learning during lockdown. The efficacy of teachers in developing ICT and e-pedagogy skills played a crucial role in sustaining online learning. To ensure equal opportunities for quality education among students from marginalised and disadvantaged communities, it is recommended to equip schools, teachers, and students with the minimum ICT infrastructure and to provide subsidies on computers and internet access.

Keywords: Alternative learning, COVID-19 pandemic, flexibility, pedagogical shift, school transformation

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Introduction

The novel coronavirus known as COVID-19 led to lockdowns in many countries around the world. These measures were put in place to prevent the spread of the virus, reduce its severity, and control death rates. Following the guidelines set by the World Health Organisation (WHO), Nepal implemented a full lockdown on March 24, 2020 (Mahato et al., 2020). As a result of lockdown, all sectors, including educational organisations, were affected and physical schools were closed. In response, some universities, colleges, and schools in Nepal started online classes using various ICT tools, such as Zoom, Google Meet, and MS Teams. Zoom, in particular, proved to be an effective tool for video conferencing and distance learning, and was widely used in Nepal after the government ordered school closures and the implementation of lockdown. During this time, we observed that some urban private schools successfully transitioned from physical classrooms to online classes.

The Zoom application, which can be accessed on various devices, such as laptops, smartphones, and tablets, allows presenters to share their screen in turn and can accommodate up to 300 participants within a 40-minute time frame (Dharma et al., 2017). During the lockdown, many school teachers utilised the free version of Zoom specifically for teaching and learning activities. The use of ICT and digital literacy are important factors in conducting online video classes. Tondeur et al. (2007) suggest that teachers need flexible and school-based training, follow-up activities, and support to successfully integrate ICT in school education. However, policies and actions need to be in order to enhance the digital learning environment, promote the number of digital-friendly schools, and produce digitally confident and supportive teachers and learners (Wastiau et al., 2013). Regarding teachers' motivation to use ICT in educational activities, Player-Koro (2012) reports that teachers' positive attitudes towards pedagogical work with students and colleagues facilitate their use of ICT in education, while general positive attitudes towards ICT in education do not seem to have much effect. Scagnoli et al. (2019) emphasise that video lectures increase students' participation with content, enhance their perception of better learning experiences through content interaction, and strengthen teaching presence in online courses. The effectiveness of online classes seems to be determined by the supportive environment of schools, teachers and students' ICT literacy, and the availability of digital devices (McFarland & Hamilton, 2005).

Different policies and strategies for ICT-mediated pedagogy have been developed in Nepal to enhance learning outcomes. The *ICT in Education Master Plan 2013-2017* suggests four key components: ICT infrastructure, connectivity, teaching-learning materials, and human resources. The plan aims to ensure equitable access to education, promote quality education, bridge the digital divide, and

improve service delivery in education (Ministry of Education, 2013). Similarly, the *IT Policy 2010* focuses on providing internet access to all schools, fostering coordination and collaboration with national and international organisations to strengthen human resources promoting industry-academia collaboration, and implementing special IT programmes that highlight competent human resources (Ministry of Education, 2010). Moreover, the *School Sector Reform Plan 2009-2015* proposes the integration of ICT-mediated teaching and learning activities in all schools by developing ICT infrastructure and offering distance and online learning as alternative schooling methods (Ministry of Education, 2009). However, the government documents clearly state that there is no budget allocated for ICT projects in education (Rana, 2018).

In an analysis of teachers' practice of ICT in rural schools in Nepal, Rana et al. (2019) report that NGO-funded digital technologies in some rural schools of Nepal, although nominal, have reduced teachers' traditional practice of textbook-based teaching and created a friendly relationship between students and teachers. Thapa and Sein (2018) argue that computer-mediated education needs to be a game-changer to increase student enrollment in Nepal, reduce students' learning stress, minimise dropouts, and strengthen relationships with key actors like governmental and non-governmental organisations. The use of digital media can help teacher educators change their teacher education practices in Nepal, understand students' course-related concerns, and break barriers related to the lack of resources or inability to interact with students (Laudari, 2019). However, the *2018 Digital Nepal Framework* endorsed some major challenges, such as the lack of ICT-trained teachers and infrastructure to adopt virtual learning as an alternative mode of pedagogy (Ministry of Communication and Information Technology, 2018). Although the majority of government schools were unable to switch their conventional physical classrooms to online, a few urban private schools and colleges attempted to continue their educational activities online using various ICT tools. This paper reports secondary students' experiences of learning in Zoom classes from their place and teachers' strategies for teaching them online. This study tries to answer the following research questions:

1. How was secondary level students' experience of learning in Zoom class?
2. In what ways did secondary teachers plan and deliver their lessons in Zoom class?

Literature Review

Access, Preparation and Practice of ICT

For the last three decades, both developed and developing countries have

been striving to adopt various approaches aimed at improving instruction and learning. These approaches include the development of technology infrastructure and the use of ICT-based tools (Gudmundsdottir et al., 2020). A study by Carrasco and Torrecilla (2012) reported that students who had access to computers and the internet at home performed better academically compared to those who did not have access to these technologies. However, in their analysis of students' experience with MOOCs, Hew and Cheung (2014) found mixed responses. While some students appreciated the availability of these courses, others criticised the potentially harmful and disruptive nature of the technology, highlighting the high cost of managing it in state schools. In a qualitative study, Tondeur et al. (2018) argued that pre-service student teachers' capacity-building programmes in ICT resulted in the development of skilled professionals capable of effectively integrating ICT into their teaching practice. Kalolo (2019) contended that even developing countries can benefit from the integration of ICT, provided there are proper government policies in place.

Developing countries with limited resources and infrastructures, such as a strong internet connection, reliable electricity, digital technology-friendly teachers, educational software, and adequate funds may not be able to experience a high level of ICT practice in education (Khan et al., 2012). Fu (2013) argued in his study in Singapore that the success or failure of ICT integration in teaching and learning is determined by teachers' attitudes, expertise, beliefs, and confidence. Moreover, Giri and Rana (2022) suggested that both pre-service and in-service training programmes should cover the use of ICT to improve the education system. However, Rana and Rana (2020) reported that sustainable mechanisms and proper funding are required for teachers' facilities and training in the incorporation of ICT in teaching activities.

Students' Perception of Online Learning

Various studies have reported the use of web-based platforms, such as Zoom, MS Teams, and Google Meet for pedagogical purposes. For example, Rose (2007) reported that teachers utilised advanced technologies in their educational practices, specifically in online teaching, to gradually eliminate the myths surrounding disadvantaged students. In Nepal, where there is a lack of ICT infrastructure in schools, students used their mobile phones to communicate with their teachers and receive distance learning support during the COVID-19 pandemic (Acharya & Rana, 2024; Rana, 2022). Many students relied on Facebook, the most popular social media platform in Nepal, for learning during the pandemic. Despite the limitations, both students and parents appreciated the efforts of teachers to engage students in learning activities (Giri & Rana, 2022). Despite the limitations, both students and parents appreciated the efforts of teachers to engage students in learning activities (Giri & Rana, 2022). However, Berridge et al. (2012) argued that students' knowledge of

technology can interfere with learning when students at home do not have immediate technological and learning support for computer and internet issues. A quantitative study in Turkey (Demir Kaymak & Horzum, 2013) found that students' readiness for online learning increased interaction but decreased readiness, leading to a failure in interaction.

A study by Platt et al. (2014) in the USA found that although students appreciated online classes as a flexible way of learning, they did not perceive it as equivalent to face-to-face classes. It is possible that students in developing countries have different perceptions of online learning compared to students in developed countries. For example, a study in Sri Lanka by Liyanagunawardena (2008) found that students who had internet access outside of their university had higher confidence in the e-learning management system than those who only used the internet at the university. However, Rana (2018) stated in his qualitative study that irregular power supply, lack of funding, poor internet facilities, teachers' unwillingness to use ICT, and students' poor digital literacy are barriers to online learning. Studies conducted during the COVID-19 pandemic (Kaphle & Rana, 2023; Magar & Rana, 2022), however, have found that teachers were enthusiastic about learning how to use ICT facilities to create online learning and provide learning support to their students from home.

Challenges of Virtual Class

Different studies have reported challenges despite the opportunities of virtual education. In an action research conducted in Cyprus, Zembylas et al. (2008) argued that learners feel isolated and lonely until they become accustomed to technology, and that they need to establish meaningful communication with peers and instructors in virtual learning environments. A qualitative study conducted in Sweden (Andersson & Grönlund, 2009) found that due to a lack of political support and bureaucratic hurdles, teachers and students sometimes question the credibility of e-learning courses compared to traditional courses. However, a study in Australia (Hockridge, 2013) indicated that distance and online learning may lack social activities, such as community prayer, chapel services on campus, shared meals, conferences, or small group meetings which are helpful for developing character, humility, and empathy.

In their qualitative case study in South Africa (Tshabalala et al., 2014), it was argued that external factors, such as a lack of policy, inadequate training for staff, and limited access to computer laboratories for students are the real challenges for the implementation of blended learning in online and offline modes. Similarly, Kaphle and Rana (2023) in their qualitative study stated that online learning as a unique medium requires different strategies different from traditional face-to-face

classrooms. However, Thapa and Sein (2018) argued that projects, for example, *one laptop per child* (OLPC) and donor-dependent programmes launched by NGOs at a limited number of schools cannot bridge the digital divide, especially in remote community schools of developing countries like Nepal, where trained teachers, course materials, and student enrollment have always been scarce. In their qualitative case study in South Africa (Tshabalala et al., 2014), it was argued that external factors, such as a lack of policy, inadequate training for staff, and limited access to computer laboratories for students are the real challenges for the implementation of blended learning in online and offline modes. Likewise, Kaphle and Rana (2023) in their qualitative study stated that online learning as a unique medium requires different strategies different from traditional face-to-face classrooms. However, Thapa and Sein (2018) argued that projects, for example, *one laptop per child* (OLPC) and, donor-dependent programmes launched by NGOs at a limited number of schools, cannot bridge the gap of digital divide, especially in remote community schools of developing countries like Nepal, where trained teachers, course materials, and students' enrollment have always been scarce.

Methods and Procedures

Research Design

As this study aimed to explore the experiences of teachers and students in Zoom classes during the COVID-19 pandemic, it utilised online semi-structured interviews (Salmons, 2010) and online class observations to collect qualitative information (Cohen et al., 2013). To protect confidentiality, pseudonyms were used for the participants in this paper. Documentary analysis was employed to identify research gaps, theorise ideas, and analyse the data. Following the approach proposed by Denzin and Lincoln (2011), participants were purposively selected from four urban private secondary schools. One teacher from each school and two students from each school totaling four teachers and eight students, were selected based on their voluntary participation. The data gathered through interviews and observations were analysed using thematic analysis.

Table 1

Participant Schools, Teachers and Students

School	Participant	Gender	Status
Birat School	Shyam	Male	Teacher
	Priyata	Female	Student
	Prem	Male	Student

Itahari Public School	Soniya	Female	Teacher
	Pabitra	Female	Student
	Sahil	Male	Student
Siddartha School	Raju	Male	Teacher
	Lata	Female	Student
	Hari	Male	Student
Sungabha School	Sunita	Female	Teacher
	Parbati	Female	Student
	Surendra	Male	Student

Data Collection Procedure

During the pandemic in 2020, secondary-level teachers and students were followed for their online classes. Online semi-structured interviews, based on the idea of Salmons (2010), were conducted to explore the teachers' online teaching strategies. Informed consent was obtained from the participants before conducting interviews, which were held multiple times using Zoom. The aim of these interviews was to understand the students' experiences of online learning during the pandemic. In addition to the interviews, the observation of teachers' online classes was also conducted to strengthen the data collected through interviews. Each teacher's online classes were observed at least five times. To supplement the interviews and observations, various archived documents, such as journal articles, theses, books, website information, and government policy documents were studied. All interviews and observations were recorded and archived on a laptop.

Data Analysis

The data gathered through interviews and observations were thematically analysed. The interviews were transcribed and organised into specific themes, which were then critically interpreted. In addition to the primary data, various archived documents were also examined. It is important to note that this study, which focused on four urban private secondary schools, cannot provide a comprehensive and generalisable understanding of online class practices in all schools in Nepal. However, by identifying the challenges and possibilities of online classes in those schools, it opens up avenues for investigating the use of online classes not only during the pandemic but also in other natural disasters, such as earthquakes and floods. This study also encourages further research in this area.

Results

Based on the research questions, the findings of this paper are categorised into three main themes: flexibility of online learning, teachers' preparedness, and challenges and opportunities of Zoom classes.

Flexibility of Online Learning

The observations and interviews conducted with teachers and students for this study have revealed that online learning via Zoom has emerged as flexible mode of teaching and learning, enabling students to learn from the comfort of their homes. The teachers expressed their belief that interactive and collaborative learning through virtual platforms, at a low cost, can greatly enhance the quality of education. Although online classes in Nepal, particularly in secondary schools, were primarily introduced due to the outbreak of COVID-19, the majority of teachers and students reported that they found it convenient to continue coursework even after the closure of physical school. During an interview, Raju, a teacher from Siddartha School, expressed his thoughts by stating:

It is really a good experience for me. We have opportunity to learn something new using latest technological tools and devices. It has made our teaching and learning possible even in lockdown.

The use of ICT-enabled pedagogy, specifically Zoom, made learning possible even during the pandemic. Additionally, his statement indicated that both teachers and students adopted to new technologies and online learning methods. Hari, a student from the same school, said:

It is engaging and effective. We can learn staying at home when physical class is shut during the pandemic. Teachers are working harder than in physical class.

Although schools have managed to continue educational activities online, it may have placed an additional burden on teachers to learn new pedagogy and technologies in order to effectively manage online and distance learning. This is further compounded by the growing concern of the pandemic situation and the uncertainty surrounding the re-opening of physical schools. Hari's experience with virtual classes revealed that online learning provides flexibility in continuing educational activities. However, some participants reported facing a number of challenges, including irregular power-cuts, unstable internet connections, and a lack of supportive devices. For example, Sunita, a teacher from Sungabha School, mentioned:

Still some students are out of contact and missing in online class. We contact and ask them to join online classes. I think they have troubles like no internet connection or lack of supportive devices to join virtual class.

Her comment highlighted the challenges faced by community schools in transitioning to online learning during the pandemic. She emphasised that without

adequate infrastructure, online classes cannot reach the majority of students, especially those living in rural areas with no internet access or lacking digital devices. Sunita specifically mentioned the technical issues that hinder student participation in virtual classes, such as the lack of supportive devices, internet connectivity, and electricity supply. It was observed that many students attended classes using their mobile phones and expensive internet data, and that some of them experienced frequent disconnections due to power outages and unstable internet. Lata, a student from Siddartha School, shared:

Some of us take online class lightly and do not pay proper attention. Even teachers fail to supervise them while presenting slides but in physical class such things never happened.

Her complaint indicated that teachers needed to do more than just deliver lessons in virtual classes. They should have learned to use flipped classroom pedagogies, allowing students to work on projects and regularly present their work in online classes. This would require providing intensive ICT training for both novice and experienced teachers, updating their pedagogical knowledge, and helping them to changing environment of online and distance learning. It was observed that students, who attended Zoom classes without their video on were not necessarily paying attention to teachers' lessons. However, both teachers and students saw online learning as an alternative to traditional physical classroom learning during the pandemic, but were reluctant to accept it as a better way of teaching and learning. Shyam, a teacher from Birat School, said:

We don't have any other option as there is COVID-19 pandemic and physical classrooms are closed. Online class is the only option we have. Challenges to online class need to be fixed to promote learning.

He further suggested that government policy and strategies regarding online classes need to be clearly defined in order to implement the programme effectively. Additionally, he emphasised the importance of taking appropriate action to establish a supportive virtual learning environment.

Teachers' Preparedness

The majority of participants reported in their interviews that when teachers are well-prepared with ICT tools and digital devices, it brings about changes in traditional teaching methods. Both teachers and students echoed that the effectiveness of virtual learning is directly connected to how well teachers plan and deliver their lessons using ICT tools. It was observed that teachers who possess sufficient technological skills in using ICT tools and digital devices are more adapted than

those who have limited technological skills. For example, Soniya, a teacher from Itahari Public School, stated:

Traditionally physical class in Nepal is based on lecture method which is useless in online mode. Online class seems to be effective when teachers share PowerPoint slides, pictures, videos, and quizzes.

Her comment provided a picture of how teachers had been learning e-based pedagogies in order to adapt to online classes during the pandemic. Soniya's experience indicated that teachers' efforts in creating presentation slides that include pictures, videos, and quizzes have actively engaged students in their learning. Similarly, Sahil, a student from the same school, also shared:

Teachers with technological knowledge are conducting virtual class more interactively and effectively than those teachers who share only the pages of textbooks. Teachers need to develop technological skills to conduct online class more effectively.

Many schools in Nepal might not have ICT-skilled teachers who possessed the minimum knowledge and skills required for online learning pedagogy. Sahil's statement highlights the students' awareness of their teachers' presentation style and preparedness for delivering classes online. Students assess their teachers' ability to use digital devices and how effective their classes are as a result. His emphasis on teachers' teaching strategies underscores the importance of their preparedness for online teaching. Similarly, Pabitra, another student from the same school, stated:

We understand better when teachers put extra effort with PowerPoint slides for presentation. But teaching without presentation in online class is found quite boring.

However, some participants commented that while their online class was satisfactory, their teachers were unable to provide timely feedback and support for their learning. For example:

We submit homework and classwork in teachers' Facebook Messenger. They seldom check and provide us with feedback. Some teachers ask us to show homework in front of the camera during the class. (Parbati, student from Sungabha School)

Teachers ask us to submit homework and classwork in their personal Facebook Messenger. Most of us rarely submit homework. Although we submitted, teachers do not check and provide feedback. (Prem, student from Birat School)

It became evident from these comments that teachers' lack of knowledge and skills in using modern technologies for online learning can reduce students' motivation to learn. Additionally, their lack of support in students' learning, particularly in checking assignments and providing feedback, may lead to a decline in students' performance. It was observed that teachers were uncomfortable using ICT tools, which made it difficult for them to assess assignments and give feedback. Furthermore, the fact that teachers asked students to display their homework in front of a webcam demonstrated their limited digital literacy.

Challenges and Opportunities of Zoom Class

Observation of teachers' online classes revealed that most of them used the free basic version of the Zoom application, which allowed for a limited class time of forty minutes. However, the participants expressed a degree of satisfaction with Zoom classes due to their features, such as the ability to share PowerPoint slides, YouTube videos, pictures, and chats. Their comments indicated that both teachers and students considered Zoom classes as an alternative mode of continuous learning following the government's lockdown order. The majority of participants stated that they were initially confused about how to conduct and join Zoom classes, but they gradually developed their confidence through continuous practice. For example, Soniya, a teacher from Itahari Public School, said:

Online class in our school started after country-wide lockdown to control COVID-19. It has continuously been improving. I was confused at first whether we could conduct online class but now I feel confident enough.

It is a common problem for teachers who are new to online teaching and have limited experience with ICT facilities. However, Soniya's experience shows how teachers can gain confidence in using new technologies for online learning through consistent practice. Our interviews with teachers also revealed that they developed their confidence in online teaching through training programmes. During our observation, we noticed that Soniya effectively used PowerPoint slides with relevant hyperlinks and occasionally engaged students in quizzes and group work. Parbati, a student from Birat School, appreciated online learning as it allowed her to continue her coursework during the pandemic. She said:

I am happy that we are learning from home with the help of internet even in lockdown due to COVID-19 pandemic. I am learning in online class what I could not learn in real classroom.

She expressed her satisfaction with online learning and how it complemented her normal classroom learning during the pandemic. However, some participants

expressed their dissatisfaction with Zoom classes. For example, Surendra, a student from Sungabha School, said:

We can meet with each other and share emotions and feelings in physical class but online class lacks them all. Likewise, we face power cut and poor internet connection which affects our virtual learning.

Despite teachers' limited ICT skills, there were many other challenges, such as limited or no access to the internet, power cuts, and technological issues. He suggested that students, parents, and teachers need to maintain a positive attitude for effective e-learning. His suggestion reflected the fact that online learning was in its early stages in the context of Nepal.

We need to take virtual class seriously and take it regularly. We need to fix our personal problems such as supportive devices, internet connection and power supply so that virtual class will be more effective. (Priyata, student from Birat School)

We need to have positive attitude towards online class and government too needs to validate it especially when our physical classroom is closed due to pandemic. (Lata, student from Siddartha School)

It is much clearer that limited administrative support for managing online learning can be a major barrier. Priyata and Lata's suggestions have pointed out several issues that affect the effectiveness of Zoom classes, such as the question of the validity of online classes, the attitudes of students and parents, and the availability of infrastructure. However, a new type of internet-based learning has caught the attention of students, teachers, and parents in Nepal, as it could serve as an alternative mode of education during and after the pandemic. Like Zoom, other ICT tools can also be used to alleviate the challenges posed by the pandemic and other complex situations.

Discussion

The findings revealed that urban schools employed Zoom as an alternative and flexible mode of distance education for online classes during school closures due to the COVID-19 pandemic. Both teachers and students reported becoming familiar with online learning and appreciated the new way of learning from home. However, teachers without intensive ICT training and limited knowledge of e-pedagogies (Rana & Rana, 2020) reported online teaching as an additional burden, as they struggled with computer and web tools for online delivery. Moreover, a number of challenges, such as lack of digital devices, unreliable internet, expensive mobile data, and irregular power supply (Adnan & Anwar, 2020) made it difficult for

teachers and students to continue their online learning. The participation of students without video on Zoom was doubtful, unlike a previous study (Alqurashi, 2019) that highlighted learner-content and learner-instructor interactions as major issues. However, flexibility, improved communication, self-motivation, course management, and independent work were identified as the strengths of Zoom classes, aligning with the findings of Davis et al. (2019). The findings of this study suggest that proper management of online learning can complement traditional physical schools and also serve as an alternative mode of learning. The findings revealed that Zoom was employed for online classes by urban schools as an alternative and flexible mode of distance education to continue educational activities during school closures due to the COVID-19 pandemic. Both teachers and students reported that they were getting familiarity with online mode of learning and appreciated the new way of learning from home. However, teachers with lack of intensive ICT training and limited knowledge of e-pedagogies (Rana & Rana, 2020) reported online teaching as an additional burden as they had to struggle with computer and web tools for online delivery. Moreover, a number of challenges, such as lack of digital devices, unreliable internet, expensive mobile data, and irregularity of power supply (Adnan & Anwar, 2020) challenged teachers and students to continue their online learning. Students' participation without video on Zoom was doubtful unlike a previous study (Alqurashi, 2019) highlighting learner-content and learner-instructor interactions as major issues. However, flexibility, improved communication, self-motivation, course management, and working independently were found as the strengths of Zoom class aligning with the findings of Davis et al. (2019).

It was found that teachers' efforts in creating PowerPoint slides that incorporated pictures, videos, and quizzes engaged students in learning activities. However, many schools in Nepal might not have teachers with the minimum ICT skills (Rana et al., 2020) required to manage online learning. Students, on the other hand, were aware of their teachers' presentation style and their level of preparation for online class delivery. Students assessed their teachers' ability to use digital technologies and how effectively they incorporated them into their classes. Teachers' teaching strategies also indicated the importance of being prepared for online teaching. Unfortunately, teachers were unable to provide timely feedback on students' work and support them with learning issues. It is evident that teachers' limited skills in using modern technologies for online learning can negatively impact students' motivation to learn, and their lack of support in students' online learning may lead to anxiety, as earlier studies have shown (Halverson & Graham, 2019; Scagnoli et al., 2019). Teachers were found to be uncomfortable providing feedback on student assignments due to their limited ICT skills in utilising available features.

It was revealed how teachers can develop their confidence in using new technologies in online and distance learning through consistent practice and training programmes. Similar to international literature (Starkey, 2020; Valencia-Arias et al., 2019), this study has investigated teachers' proactive engagement with new technologies and their progressive development of skills through continuous practice. Teachers extensively used PowerPoint slides with hyperlinks and sometimes engaged students in quizzes and group work. They expressed satisfaction with online learning and how it complemented traditional classroom learning during lockdown. However, some participants expressed dissatisfaction with Zoom classes. In addition to teachers' limited ICT skills, there are other challenges, such as limited internet access, power-cuts, and technological issues, which align with the findings of a case study in Ghana by Adarkwah (2020). This study suggests that students and parents' limited internet access, power-cut, and technological issues align with the findings of a case study in Ghana by Adarkwah (2020). This study suggests that students, parents, and teachers need to have a positive attitude for effective e-learning. It has revealed that online learning is in its early stages in the context of Nepal and that limited administrative support to manage online learning can be a major barrier. Other issues, such as the validity of online classes, students and parents' attitudes, and infrastructure also determine the efficacy of Zoom classes. However, a new kind of internet-based learning has drawn the attention of students, teachers, and parents in Nepal as a potential alternative mode of education during and post-pandemic situations similar to findings in an international context as reported by König et al. (2020). Online classes, although initiated and practised following school closures during COVID-19, have provided the possibility of flexible learning in terms of time and place in any situation like a pandemic or other calamities. Several studies during and after the pandemic in Nepal (Giri & Rana, 2022; Kaphle & Rana, 2023; Rana, 2022) have found that although online learning was initially intimidating to many teachers, students, administrators, and parents, this new learning practice was eventually accepted and appreciated for its effectiveness in providing both teachers and students with flexibility in managing learning activities from convenient locations. If an ICT-skilled workforce is provided for the management and delivery of online and distance learning, this new practice can be well-developed to promote opportunities for quality education for all, including marginalised and disadvantaged community children.

Conclusion

The online mode of learning is highly regarded for its flexibility in terms of time and place. It has become a viable alternative to traditional learning during the COVID-19 pandemic, which has led to the closure of schools in order to

prevent and control the spread of the coronavirus. Research based on urban online learning practices suggests that effective management of ICT infrastructure, access to internet facilities, and teachers with basic ICT skills can significantly promote online and distance learning. However, schools in rural areas have faced challenges in transitioning from physical classrooms to online learning due to the lack of ICT infrastructure, electricity, internet access, and trained ICT teachers. Issues, such as irregular power supply, poor internet connectivity, weak mobile data, and a lack of digital devices have prevented a large number of rural students from accessing online learning. While teachers in urban schools were able to conduct online learning using platforms like Zoom, the number of students in these classes fluctuated due to ineffective classroom management and teaching strategies on the part of the teachers. Teachers who possessed basic ICT skills and delivered lessons using PowerPoint slides with pictures, videos, hyperlinks, and quizzes had more students in their classes compared to those teachers with limited knowledge and skills in e-pedagogy.

The majority of teachers, who had limited ICT skills and were unable to utilise features, seemed to fail in providing feedback on students' work. However, consistent practice with technology and training programmes helped them develop the confidence to create and manage online classes. Limited administrative support in managing online learning was identified as a major barrier to teachers' progress in online teaching. Similarly, several issues, such as the question of the validity of online classes, students' and parents' attitudes towards online learning, and inadequate ICT infrastructure were found to be challenges to web-based learning. Online classes, although initiated and practised following school closures during the pandemic, can be further developed by equipping all schools and students, particularly those students from marginalised and disadvantaged communities, with equal opportunities for quality education.

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