How University Lecturers and Students Interpret Opportunities and Challenges of Online Mode of Learning

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Article Info	Abstract
	This paper reports an analysis of university lecturers and students' experience of the online mode of learning in the COVID-19 situation. It as qualitative research employed semi-structured interviews and observation of online classes to gather data. It reports on how online classes enabled university lecturers and students to manage online learning and improve technological skills with the consistent practice of various information and communication technology (ICT) tools. Despite limited technological and pedagogical knowledge, lecturers initiated online learning as an alternative to physical classroom learning in the crisis. Both lecturers and students, thus, were intimidated by new technologies and ways of learning at the beginning. In absence of ICT training, their consistent practices of online learning enabled them to develop some level of confidence in using ICT in teaching and learning activities. Many students from remote rural villages, however, are unable to access online education due to the lack of the internet, smart devices and electricity. The online mode of learning, albeit it is reported a potential strategy to shift from the traditional education system to modern learning, cannot be sustainable in the context where there is limited or no infrastructure for the internet and electricity.

Introduction

The growing use of ICT has revolutionized the ways of teaching and learning, and enabled teachers and students to work from their homes. The virtual class initiated in the New Jersey Institute of Technology during the late 1980s bringing universities into homes (Hiltz, 1994) has become an alternative mode of learning in recent days across the world. The integration of ICT has played a significant role to transform traditional pedagogies into modern teaching and learning activities (Rana et al., forthcoming). However, the lack of ICT infrastructure, teachers' limited or no ICT knowledge and skill, and lack of administrative support can be barriers in the implementation of ICT in education (Kumar, 2008). The rapid development of wireless network capacity and the growing use of mobile phones, thus, have helped minimize the challenges related to infrastructure development in developing countries (Farrell, 2007). The use of ICT in education has changed ways of teaching and learning (Rana et al., 2019). The integration of ICT into higher education has improved teachers' instructional activities and increased global connectivity (Hanafizadeh et al., 2019). Teachers, therefore, can utilize the potentials of ICT to create an online model of learning (Halavais, 2016). In the context of Nepal, the

use of ICT in personal as well as professional lives is rapidly increasing. Nepal Open University, for example, has become an option for many students who are employed and live in remote areas. In particular, the online mode of learning has provided learners with opportunities for learning and achieving higher qualifications from their place. Following the COVID-19 pandemic, many countries temporarily shut down academic institutions suspending regular classes for an uncertain time. In this pandemic crisis, many schools and universities despite restrictions of gatherings and safety regulations to prevent the spread of COVID-19 have utilized various ICT tools such as Zoom, Teams, Meet, Viber, Messenger and Skype to continue their educational activities in an alternative way (Chick et al., 2020). The Chinese government, for example, following the outbreak of COVID-19, issued a notice to restore educational activities by utilizing internet facilities (Chen et al., 2020). However, many countries including Nepal were reluctant to decide on internet-based learning in the early months of the pandemic situation in 2020 because it would consume time in transition, create an economic burden and need access to high-speed internet and the latest digital tools (Rajab et al., 2020). While face-to-face physical classroom could spread COVID-19, the online mode of learning, an alternative to a physical classroom, was recommended to maintain social distancing and control the pandemic (Murphy, 2020). In response to the pandemic, schools were closed in China and an emergency policy was formed to manage large scale virtual classes without stopping normal educational activities to alleviate many parents' concerns (Zhang et al., 2020). The strategies of utilizing available ICT facilities, channelizing existing resources and collaborating with all stakeholders to shift physical classroom to the online mode of learning has been observed effective in many parts of the world (Sandars et al., 2020).

The majority of particularly community schools and most of the university departments, however, have been unable to adopt an online mode of learning due to inadequate ICT infrastructure, teachers' lack of ICT knowledge and skills, and students' lack of access to the internet and smart devices. The gap between policy rhetoric and the reality of ICT practice in education has been visible in the pandemic situation in Nepal. Although educational policies in ICT have extensively articulated to transform traditional schools into e-schools with the integration of ICT in teaching and learning, the government of Nepal does not allocate a specific budget for the project (Rana, 2018). Most universities having ICT illiterate lecturers and no ICT infrastructure have been observed inefficient to adopt the online mode of learning in the pandemic situation. However, some university campuses, particularly specific departments, and private colleges in Nepal initiated online learning by using freely available ICT tools such as Teams, Zoom, Skype and Google Meet after the outbreak of COVID-19 in 2020. The first author who initiated the online mode of learning experienced difficulties and challenges in the process of establishing it. He identified the research problem and developed research questions: How is Masters students' experience of online learning? In what way does ICT help them in their learning? How do university lecturers plan and deliver lessons in online classes? This paper reports an analysis of university lecturers and students' experiences of online mode of learning.

Online Class as an Alternative Mode of Learning

Many studies have emphasized the significance of the internet to create online learning. For example, Young and Norgard (2006) in the context of the USA assessing the quality of online courses from students' perspective

found that their family, work obligations and distance from campus made online learning a convenient option as it provided them with the flexibility to continue their education amid their busy time schedules. Online mode of learning allows students to achieve a level of comfort stepping out of their traditional passive roles and helps them become active learners with fellow students and facilitators (Stanford-Bowers, 2008). In their analysis of students' participation in an online learning community, Baasanjav (2013) investigated that students chose an online class because they found it flexible for learning in terms of time and place. However, Sileo and Sileo (2008) earlier reported that, although online classes might benefit many students who would be unable to go to physical classes to study, it might be unable to develop students' social behaviors and other lifelong skills essential for them.

The use of ICT in education is significant (Raman, & Halim Mohamed, 2013). For example, Usluel et al. (2008) reported that teachers in Turkey used ICT tools to allocate assignments for students, publish their lectures and do research through the internet. In his study in the context of East African countries, Tedla (2012) emphasized that ICT facilities provided both teachers and students with opportunities for flexible learning, and effective ways for communication and collaboration. In their study in rural Nepal, Thapa and Sein (2018) reported that the use of ICT in the teaching-learning process enabled teachers to act as a facilitator and create a student-centric method of teaching. Similarly, Rana et al. (2019) reported that the use of digital devices, to some extent, transformed the traditional culture of teaching to social learning. They suggested that schools and universities if equipped with ICT infrastructure can shift from conventional teacher-centered to student-centered teaching and learning. In connection with pedagogical practices of ICT in China, Zhou et al. (2020) investigated that the gradual growth of online education has been highly valued, particularly in the pandemic situation after the outbreak of COVID-19. However, they argued that teachers need to have adequate knowledge and skills to effectively implement online learning. In an analysis of students' online learning experiences in this COVID-19 pandemic in China, Peters et al. (2020) reported that despite the fear of COVID-19, students experienced the pressure of learning in online classes. However, Platt et al. (2014) earlier reported that students in American schools perceived online classes as more flexible than face-to-face physical classes and argued that physical presence in the classroom would offer a high level of interactions between instructor and students than virtual classes.

ICT Support in Learning

Students learning through an online mode need adequate learning materials and continuous support to manage learning from home (Sánchez-Elvira Paniagua & Simpson, 2018). Simpson (2013), for example, reported, students who had access to digital learning materials and were learning from home shared their lessons on blogs, commented on others' posts and asked questions to authors. Similarly, Simonson, Zvacek and Smaldino (2019) investigated that internet-based distance education allowed students to learn and achieve qualifications in their flexible time by saving their money and time. For distance learners, Jack and Higgins (2019) suggested providing specific technologies and digital resources to motivate them to learn independently, although the access to adequate training and support remain challenging. In his examination of lecturers' experiences of ICT in teacher training in Nepal's universities, Laudari (2019) identified that ICT tools provided teachers with

opportunities for developing their professional skills and learning new academic skills and that university lecturers valued the importance of ICT for updating themselves with best teaching practices. In their study about students' practice of ICT, Zhuang and Xiao (2018) emphasized that the use of ICT in teaching and learning increases students' learning motivation. However, they argued that the practice of ICT can be effective when students realize its functional benefits. Focusing on the context of developing countries, Tinio (2003) earlier suggested that developing countries can integrate ICT in education to extend educational opportunities by creating a virtual learning environment for all including disadvantaged and marginalized students excluded from education due to cultural, social or economic reasons.

The online mode of learning can be useful to manage a large number of students, encourage engagement and promote critical thinking skills (Hamann et al., 2012). Ni (2018), for example, reported online learners' progressive development of understanding of information. Instead of relying on hardcopy textbooks and blackboards, Gulbahar and Guven (2008) suggested developing ICT infrastructure and promoting online learning in developing countries to ensure that all students can access quality education. Whelan (2008) argued that there are many barriers such as lack of ICT skills and training for teachers and students which may prevent them to experience the effectiveness of ICT in education, although it has become essential to apply ICT in educational practices with the changing context of the world. However, the effectiveness of ICT in education depends on how students and teachers use it in their learning activities (Herselman, 2003). In the context of Nepal, Rana et al. (2019) reported that the appropriate use of ICT helped students explore knowledge, improve results and solve learning problems. However, Laudari and Maher (2019) suggest providing adequate ICT training for teachers to develop their technological pedagogical knowledge and successfully integrate ICT into instructional activities.

Role of ICT in Planning and Delivery of Lessons

The outcome of teaching depends on teachers' knowledge and skills that play a great role in reflecting lessons to students (Yalcin Arslan, 2019). ICT helps teachers in the process of preparing lessons in many ways such as search and download digital documents relevant to their lessons (Nilsson & Karlsson, 2018). In their study in Malaysia, Lin and Yunus (2012) reported, the use of ICT tools enabled teachers to deliver lessons effectively, increase students' engagement in learning activities and motivate them to explore their learning resources. In an earlier study in Australia, Schibeci et al. (2008) suggested that teachers' high level of confidence in using ICT could provide learners with maximum learning opportunities and help them make fundamental changes to their pedagogy. However, they argued that teachers need to spend a lot of time in their practices to gain such confidence. In their earlier study in Britain, Yuen et al. (2003) found that teachers were able to increase self-confidence, improve the presentation of work and raise the standard by helping their students to use ICT in educational activities.

ICT knowledge and skills come to be primitive qualities in education, and the integration of it into teaching is necessary to open up new learning opportunities (Hong et al., 2019). In their examination of online learning in Nepal, Shakya et al. (2017) investigated that online education could be an alternative to minimize the digital gap

between rural and urban, provide equal education opportunities for all and improve the quality of education. However, they argued that there are potential challenges such as the installation of ICT infrastructure in remote areas, people's affordability to technology and ethical practices of internet facilities. Lim et al. (2020) argue that although ICT is recognized as a tool for enhancing the quality of education, there are some challenges of utilizing the opportunities of ICT such as lack of access to ICT infrastructure in rural Nepal. Azmi (2017) argued that the success of ICT integration depends on how teachers use it in their teaching and learning practices.

Research Design

This research reports an analysis of university lecturers and students' experiences and perceptions of online learning, and the use of ICT tools for academic activities. Following the idea of Cohen et al. (2013), this study based on qualitative interpretive design employed internet-based semi-structured interviews with the participants and observation of their online classes. Rana et al.'s (2018) suggestion helped identify participants and involve them in this study. Two campuses were selected on the basis of reported information about online classes and two lecturers (one from each campus) were approached through personal contact for the observation of online classes and interviews who were teaching in online classes following the lockdown in the COVID-19 pandemic situation. Ten students (five from each campus) were purposively selected to explore their experiences of online learning. The university lecturers involved in this study were teaching at the Masters level. The students represent the Faculty of Management and Faculty of Humanities and Social Sciences. The original names of participant institutions, lecturers and students are replaced by pseudonyms to maintain anonymity.

Methods of Data Collection

A phenomenological approach (Creswell, 2003) was utilized in the process of data collection to gather lived experiences of university lecturers and students. The participant lecturers and students were contacted via mobile phone, Facebook Messenger and emails to obtain informed consent for the interviews and online class observation. Participants were followed by internet-based semi-structured interviews and online class observation to explore their experiences and perception of online learning. Participants were interviewed by using Facebook Messenger and cell phone on multiple occasions. The interviews were recorded on a mobile recorder. Each lecturer's five online classes on Microsoft Teams were observed for five weeks in the situation of pandemic lockdown. The observational diary was developed to follow a systematic analysis of the overall data.

Data Analysis

An inductive coding scheme (Clarke et al., 2015) helped identify themes and organize a wide range of data into these themes. Interview audio records were transcribed and thematically categorized into specific themes to follow systematic analysis. The themes which were generated from the interviews and observations helped coherently present the data and derive findings and conclusions. Various archived documents were read against the data gathered through interviews and observations.

Findings

The analysis of data gathered through semi-structured interviews with masters' students and university lecturers, and observation of their online classes have been presented into three themes: Online mode of learning environment, effectiveness of online classes, and prospects and challenges of online learning.

Online Mode of Learning: A New Learning Environment

Interviews with the participant lecturers and students and observation of their online classes investigated that the use of various freely available apps like Microsoft Teams, Zoom and Google Meet enabled them to conduct teaching and learning from home staying away from their university classrooms. Lecturers emphasized the need for an alternative mode of teaching to maintain educational activities in the COVID-19 pandemic situation when all the educational institutions have been shut down to prevent the spread of coronavirus and save lives. For example, Bishwash, a lecturer as well as Coordinator at Namuna Campus, said:

> Some universities like Kathmandu University, Tribhuvan University and Nepal Open University have had online teaching and learning for years. Students learning in online classes have a good response. They have learnt how to visit websites to search and download reading materials. Some other universities have started to teach through online mode after the outbreak of COVID-19. Some others are about to start as students get flexible learning opportunities and open access to online resources. Some of the lecturers and students have completed their courses through online classes.

His comment indicated that the online mode of teaching and learning was not a new practice in Nepal as some universities had already started open and distance programs. However, his expression reflected how online education was rapidly adopted with the extended lockdown in Nepal. Both the lecturers involved in this study appreciated the online mode of learning, only the option for learning in a crisis. However, they shared their bitter experiences of initiating it and learning to survive in the new learning environment. In absence of support from the university and campus administration, they with their limited knowledge of how to use ICT tools in their virtual teaching were intimidated by new videoconference tools and the dynamic features of those tools. It took a while for them to learn how to use web tools, explore a wide range of openly available resources on the internet and share them with their students.

> Well, I decided to create an online class for my students but I never did it before. I knew my limited skills of video chat skills on Facebook would work at some level but it was not enough to manage many students and teach side by side. I was scared to use Zoom. It took me quite a while to settle myself. (Bed, lecturer at National Campus)

It was evident from observations that both the lecturers heavily relied on lectures and PowerPoint slides in most of their classes. Although they shared their slides and some learning materials with students to support their independent learning at home, students' passive presence in online classes created doubt about how they would have learned without active interaction with their teachers and friends in the classes.

Similar to lecturers' voices, the majority of student participants appreciated online learning in this crisis. Pratik, one of the students at Namuna Campus, commented that the online mode of learning complemented his conventional physical classroom learning and it would transform traditional teaching and learning into modern learning.

> In pandemic and other similar situations such as strike and closure of classes, online classes will be perfect for us to continue our studies without interruption. We can also create a group and can share ideas with friends to increase our knowledge. (Pratik, student at Namuna Campus)

Pratik's comment provided a kind of picture of how the online mode of learning can compensate for the suspended physical classes in difficult situations such as pandemic crisis and strike. His expression reflected how they were able to share ideas relevant to their courses with their friends by using various ICT tools. However, all the students shared painful learning experiences of learning to use new technologies and strategies for autonomous learning from home. For example, Indra, a student at National Campus, said:

> Some of our teachers give us ideas about how to visit different media […] YouTube and Google […] find books and supportive reading materials. Before this, I had no idea how to use Zoom and Teams for online learning. I did not know several reading materials are found on the internet. I am learning to use them and going well now.

His comment indicated how students were challenged by ICT tools they had to learn to use for online learning. Also, he intended to say that students gradually learned new technologies with the help of teachers and own practices. However, most students, especially from remote rural areas where they did not have smart devices and the internet, were unable to access online classes, a new learning environment for them. For example, Laxman, a student from a remote village, expected that students in rural areas would have internet facilities to experience the online mode of learning. He said:

> If students are provided with the internet and materials, online classes will be very effective. Unfortunately, most students from rural areas do not have digital devices and the internet. The current practice of online learning is limited to towns and cities.

It was evident from interviews with both lecturers and students and observations that the new practice of online learning does not seem a sustainable model of learning in the current situation because many students, particularly from remote rural villages still do not have access to digital devices and the internet. Moreover, his expectation suggests investing in ICT infrastructure in rural areas so that rural people can get opportunities for learning to use ICT and through the online mode of learning.

Effectiveness of Online Classes

Participants involved in this study shared their initial experiences of using Zoom, Meet and Teams for teaching and learning during COVID-19 lockdown in the country. Their responses indicated how hard they struggled to learn to use these tools and develop their confidence in using the videoconferencing tools. For example, Pratik said:

I am enjoying it now. In this pandemic situation, we are all stuck at home and it is not easy to move from one place to another to take a physical class. Overall, it is interesting because we have got an option for learning and gaining knowledge. We are doing what we have learned in a short time. I did not expect I could learn to use Teams and manage to learn in online classes.

His experiences of needing to learn how to use available ICT tools and ways to learn through an online mode of learning suggested that both teachers and students need to be trained to use technology and manage online learning. Because teachers' limited knowledge of ICT and online pedagogies cannot help them effectively implement ICT in instructional activities, they should be equipped with adequate technological and pedagogical knowledge. Although all the student participants appreciated the online mode of learning, their responses also indicated some challenges to make it sustainable and effective without the collective effort of the university and government. For example, Kalpana, a student at National Campus, reported that internet facilities enabled her to learn her courses from home and saved her valuable time of travelling to the university. She said:

I think online classes are more effective than normal physical classes because we do not need to travel. We can take classes from any place. Most of the time we do self-study on the internet. The way of teaching is also effective. Teachers use PowerPoint slides and overall classes are effective. But it is accessible for urban students. Most of my friends who live in remote villages are absent in online classes. They do not have the internet there.

Her expression reflected how she was able to explore learning materials on the internet and use them in her course learning. Her comment, however, indicated that lack of the internet in rural areas was one of the major challenges to establish online learning as an effective and sustainable way of learning across the country. Indeed, access to the internet is a major issue. It was evident from the interviews and observations that the urban-based newly practiced online learning can result in a disparity between the rural and urban students. Nevertheless, lecturers' limited technological and pedagogical knowledge seems another challenge to the effective practice of online mode of learning. For example, Babu, another student from National Campus, had a mixed perception of online classes, as he said:

I found online classes very exciting. There is not any disturbance and I can concentrate on my studies. Online classes are good but there is less interaction between teachers and students. Teachers present slides and deliver lectures. We just listen to them.

Although he appreciated the peaceful environment of online classes, he expressed dissatisfaction with teachers' teaching strategies that mostly kept students in silence instead of involving them in interactivities. As discussed in the above section, observations identified that the lecturers involved in this study seem to have limited technological and pedagogical knowledge, because lecture with PowerPoint slides was their main method of teaching. However, the participant lecturers diplomatically spoke about the choice of online mode of learning after the outbreak of COVID-19.

We are compelled to organize online classes due to pandemic, but students prefer face-to-face class. In a physical classroom, they can have a kind of connection and a sense of being in the class. Students found face-to-face classes more effective. To me, online classes are very effective because every teacher comes

up with several videos and illustration slides. It is not possible in physical classes. (Bed, lecturer at National Campus)

Initially, it was very difficult for students to come to online classes. It was a new kind of activity for them as they were used to go to physical classrooms and have face-to-face communication. Later after a month, they realized the value of online classes and accepted this pandemic as a normal life. So, students are happy because they might not have other choices and we also have the same choice. (Bishwash, lecturer at Namuna Campus)

These comments indicate that the lecturers initiated the online mode of learning despite their limited technological and pedagogical knowledge. Although the lecturers tended to say they felt comfortable teaching through an online mode of learning, their contradictory statements in the above interview chunks indicate their level of teaching practices. It was evident from observations that the lecturers had slow progress in the development of technological and pedagogical knowledge. Their use of audio-visual materials, slides, pictures and figures would have been helpful for students while they became active presenters.

Prospects and Challenges of Online Learning

In the interviews, both lecturers and students reported opportunities and challenges of managing the online mode of learning in the context of Nepal where many students living in remote rural areas do not have access to the internet and digital devices. For example, Bishal, a student at Namuna Campus, said:

Some students are from remote areas and they do not have access to the internet. They are absent. We live in the city and many students come from villages to get higher qualifications here. They have gone to their village in this lockdown situation.

His comment indicated that the limited practice of online learning following the lockdown caused by the COVID-19 pandemic may increase the digital divide between rural and urban areas. It was evident from interviews and observations that the majority of students from rural areas, who went back home in the crisis, were unable to experience online learning because they did not have a digital device and the internet. Nevertheless, the participants involved in this study reported weak internet that often caused interruptions in communications and blurred presentations. Ishwar, another student at Namuna Campus, shared:

We need high bandwidth internet to have smooth online classes, but the internet quality fluctuates. I frequently have a buffering of websites and videoconferences. Powercut is another issue. It is the situation in the city. I cannot imagine how rural students can manage to access online classes.

It is probably a common issue of many students across the country where they have tried to learn through online mode. Indeed, unreliable electricity and the internet are issues across the country. It was evident from observations that the frequent decline of students from an online class, who often re-joined, indicated the poor quality internet that created frustration in both students and teachers. Most students' experiences of needing to develop high-quality internet suggest that there is much to do in the field of information technology

infrastructure development in Nepal and online learning. However, Mahesh, a student at National Campus, found mobile data packages, to some extent, supporting him to join online classes. He said:

> Telecom gives special packages for students for online classes, and it is quite good for them. I think such a subsidy on the internet price if students know about it can increase the popularity of online learning. Unfortunately, the universities and government do not have a specific plan to implement the online mode of learning. Campuses particularly individual professors in some departments have suddenly initiated it after the outbreak of COVID-19 when the government announced lockdown.

His expression reflected that the online mode of learning may benefit students if they have a digital device and can afford to use mobile data. However, his comment indicated that individual lecturers' initiative to establish online learning cannot be sustainable without the university's specific plan to develop the online mode of learning across the country. Besides, the participant students' experiences suggested that, if the online mode of learning is systematically developed by the universities, it can be an alternative to physical classroom learning. Because it is flexible in terms of time and place, many students who cannot attend the physical classroom can achieve higher degrees from home. For example, Babita at Namuna Campus said:

> In online classes, we can have collaborative learning. We can discuss specific topics with our friends and teachers. We have attempted internal assessment through online mode. Many people who have jobs and cannot go to college can learn from home and get degrees.

Bed, a lecturer at National Campus, reiterated students' views:

> An online class should be continued because in any unexpected circumstances physical classes can be replaced by them. It can be used simultaneously with a physical classroom so that teachers and students can meet and share ideas about their subject matter, class revision, project assignments and other academic activities. Even the students who have missed real classes can cover their courses by using the recorded classes and shared materials.

His expression reflected that the universities can develop the online mode of learning as an alternative or a complement to the physical classroom to manage education in crisis as well as a normal situation. His suggestion for adopting online learning can probably be productive in educational activities, particularly in the context where teaching and learning are based on traditional chalk-and-talk pedagogies. However, the participants' responses indicated that although their initiative to establish the online mode of learning as a new normal way of learning can benefit urban students, this urban-based new approach to teaching seems to widen the digital divide resulting in the decline of rural students.

Discussion

Teachers' Capability of Adopting new Technology and Pedagogy?

Findings indicate how the university teachers can demonstrate their capability of utilizing limited knowledge of online learning tools to transit from the physical classroom to the online mode of learning. For example, they initiated the online mode of learning following the lockdown caused by the COVID-19 pandemic. In absence of

systematic guidelines and plans from the university, they explored ICT tools such as Microsoft Teams and Zoom to conduct online classes. Despite their limited ICT knowledge and the lack of previous experiences of online teaching, they reached out to scattered students across the country through social media such as Facebook and Zoom. It was not piecemeal for them to learn new technology and pedagogy, and to transit from traditional teaching in the physical classroom to the online mode of learning without previous knowledge and experiences. However, their effort to create virtual meetings with students helped them gradually establish an online learning environment. The skills of video chat they gained from day-to-day communication with friends and family would have helped them initiate online learning in the crisis. It indicates how teachers learn to use new ICT tools through individual effort and transform traditional pedagogies to modern learning without training support (Berezhna & Prokopenko, 2020; Chatterjee & Correia, 2020). Although international literature (Kumar, 2008; Zhang et al., 2020) informs the requirement of minimal knowledge of the online mode of learning for the systematic development of online learning, the present study has identified teachers' motivation and steady effort as major determinants to successfully establish online learning, particularly in the environment such as Nepal where the university campuses are not prepared for adopting it.

When the participants in this study shared their experiences of learning to use various videoconferencing tools, several themes recurred. These related to their understanding of the need for ICT tools, digital resources and students' access to ICT. It was evident from the interviews that the government initially advised the universities to explore alternative modes of learning. When initiating the online mode of learning, neither the government nor the university supported these participant teachers. The teachers received neither ICT training nor digital resource from the university. Instead, they relied on brief departmental meetings and own limited knowledge of ICT. Their collaborative activities with students helped them utilize openly available online materials in teaching activities. It indicates how the teachers involved in this study learned to use ICT in teaching and learning activities in online classes. It reminds us of what Leask and Meadows (2000) said, many teachers across the world learn to use ICT tools in their personal lives similar to other people in the community and implement their skills in the classroom. However, the teachers involved in this study perceived ICT training as essential to the effective practice of the online mode of learning (Laudari, 2019; Rana & Rana, 2020). It was evident from the observation of their online classes that they lacked the skills of how to deliver lessons and they relied on PowerPoint slides and lectures. The lecturers lacked confidence, which was probably not surprising given the challenges they experienced.

Teaching with Limited ICT Infrastructure

The teacher participants' comments indicated that their general ICT knowledge played a significant role in creating online classes for the students who were waiting for their normal school days. Moreover, they voiced that although they had a personal digital device and the internet, most students did not have access to such facilities. Besides, they did not have ICT infrastructure on campus. It was evident from the observation of online classes and interviews with them that there were a limited number of students in online classes and many students could not access it due to the lack of the internet and digital device. Indeed, access to ICT infrastructure is a significant issue. The participant teachers' experiences of teaching through the online mode of learning thus

aligns with the findings of Lim et al.'s (2020) study that there can be a broad gap between what might be an ideal online teaching and the localized reality of what is possible. For both teachers and students in Nepal, gaining access to the internet, digital devices and digital learning materials can be difficult.

Being able to access digital technologies and learning to use them are interdependent. The participant teachers' comments suggested that, while they were interested in learning to use ICT tools and digital contents that were accessible, they had limited knowledge of how to explore online learning materials and utilize them. Their experiences of necessitating to learn how to use available ICT tools in online teaching activities suggested that the existing teacher education which did not cover the use of ICT might need significant revision to include the use of ICT in instructional activities. Indeed, their repeated emphasis asking for providing them ICT training and digital resources for teaching indicates that their university professional development programs need to cover the ways of using ICT in both physical classrooms and online learning. It was evident from observations that the participant teachers had a low level of confidence in using ICT tools and digital materials in online classes. It reflects the findings of Czerniewicz and Brown (2005) in South Africa that teachers who have limited access to ICT and training opportunities to use it are not as confident and ready to use it in instructional activities. In addition, Rana and Rana (2020) argue that teachers' attitude towards the use of available ICT determines the successful integration of it in pedagogical activities. In the words of Koehler et al. (2007), the teachers involved in this study needed adequate technological, pedagogical and content knowledge to effectively manage the online mode of learning because these three elements reinforce each other. However, the participant teachers' responses in this study, as well as the observation of their online classes, indicated that despite their very limited ICT knowledge and skills, and the lack of administrative support, they were, to some extent, able to learn to use available ICT tools to create online classes and repair the educational void in the pandemic crisis.

Students' Lack of Access to ICT

The remote rural locations of students exacerbated the challenges of introducing and managing the online mode of learning. In particular, many students living in villages where they do not have smart devices and broadband internet could not access online classes. This parallels Whelan's (2008) findings that a challenge lies in the locations where there is a lack of the internet and smart devices. Even the situation in online classes where there were limited students indicated the precariousness of online learning practices. Although the participant students appreciated the online mode of learning in absence of physical classes in the COVID-19 pandemic, their experiences of needing to learn how to use freely available ICT tools and massive online open contents (MOOCs) suggested that the online mode of learning, only the option in the pandemic crisis, was not adequately developed as reported in international studies such as Simonson et al. (2019) and Sandars et al. (2020). Besides, the students involved in this study were afraid if their limited practice of online learning would create a broad gap between the students who had and did not have access to online classes.

In Nepal, many students, particularly from remote villages, are vulnerable as they have no access to digital devices and the internet. A lack of government plans for equipping rural schools and students with ICT does not indicate a sustainable practice of online mode of learning for achieving educational policy goals. Indeed, there

are a lot of works to be done in establishing online learning in Nepal, especially in remote rural villages. It is important to remember the high mountains, hills and environmental conditions of Nepal which seem challenging factors to develop infrastructure for the online mode of learning. As a result, equipping all the villages, schools, university colleges, students and teachers with technology and providing adequate ICT training for both teachers and students across the country is a convoluted and expensive task (Rana, 2018). International studies (Adnan & Anwar, 2020; Affouneh et al., 2020) in the recent past have reported similar situations that the lack of digital devices, the internet and reliable source of income are major barriers for students living in rural areas in developing countries to access online education. In the present study, the participant students' responses, as well as their class observations, indicated some positive signals that the university students, if they are provided subsidies on digital devices and mobile data, could access online education. At the present condition in many remote rural areas where there is no internet infrastructure, many students, however, cannot access online learning.

Conclusion

The online mode of learning, only the option in the pandemic situation, was initiated by university lectures. The participant lecturers and students have interpreted it as an opportunity in terms of a chance to integrate ICT into instructional activities, one of the policy mandates, and a challenge in terms of access to online learning. In the absence of physical classroom learning, the online mode of learning became an alternative mode of learning during the COVID-19 pandemic. Both teachers and students appreciated it as it allowed them to teach and learn from home. Despite their limited knowledge of ICT and its use in teaching and learning, the lecturers involved in this study initiated online classes by using freely available ICT tools such as Zoom and Teams. Nevertheless, they dared to practice the online mode of learning without any support from the university. They, thus, had to learn to use new technology and the way of teaching in online mode. Similarly, the students involved in this study appreciated their teachers' initiative, because it became an opportunity for them to learn ICT and the ways of learning from home that saved their travel time. Their collaborative learning with peers through online mode enabled them to develop self-efficacy to manage learning activities. Internet-based learning, if systematically implemented, can be effective and productive in not only crises but also normal situations. Recording facility in online classes has made it possible for students to have access to the material at their convenient time and has minimized the problems faced by online learners.

Indeed, access to the internet is an important issue reported in this study. A large number of students living in remote rural areas were unable to access online classes managed by their lecturers. Although a subsidy on the price of mobile data was announced to allow students to access online learning, it did not work as many students live in remote rural villages where it is not accessible. Nevertheless, the lack of broadband internet, proper digital devices and electricity are major barriers to make the online mode of learning sustainable and effective in Nepal. In absence of support from the university, lecturers' efforts may not ensure its sustainability, albeit they reported the potentials of the online mode of learning. Besides, teachers need to have technological and pedagogical knowledge to effectively implement online learning. The lecturers involved in this study, however, did not have adequate technological and pedagogical knowledge. As a result, their practice of online teaching

was heavily based on the traditional lecture method embedded with PowerPoint slides. Their practices of ICT tools and traditional pedagogy in online classes indicate that the existing teacher development programs need some revisions to include the use of ICT in teaching and learning activities.

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