

## Future Direction of Teaching and Learning Module in Nepal

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### Abstract

This paper studies shift of physical class adopting Information and Communication Technology in teaching and learning activities in Nepal. Integration of ICT in academic activities changes the traditional teaching model ignoring teacher centered method into effective student centered method. The qualitative research employed semi-structured online interviews with secondary students, teachers and parents through Facebook messenger, telephone call, personal interview and Zoom class observation. Documentary analysis provided a ground for the analysis of data gathered through interviews and observations. This paper reports on how online mode of learning would be effective pointing out collaborating learning environment, easy access to materials and in terms of time saving. Moreover, use of ICT in academic activities changes teacher-centered teaching and learning environment into student-centered environment. ICT skills of teachers, poor ICT infrastructure and government policies have been pointed out as hurdles for virtual classes. However, integration of ICT in academic activities is demand of the time. Findings suggest that the use of ICT in academic activities will be effective way of teaching and learning activities in future in Nepal. Moreover, online classes can benefit students who are from marginalized, disadvantaged communities and who have no easy access to schools.

*Keywords:* Zoom; COVID-19; ICT; online learning; e-pedagogy

### Introduction

Sudden outbreak of COVID-19 pandemic shifted physical class into virtual integrating Information and Communication Technology in teaching and learning activities all over the world as well as in Nepal. The UN Educational, Scientific and Cultural Organization estimated that more than 168 countries closed schools nationwide during Covid crisis (Van Lancker & Parolin, 2020). All the educational institutions with the announcement of nationwide lockdown on March 24, 2020 remained unable to resume their educational activities since then. However, particularly private schools in cities had some level of access to ICT in order to adopt online

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pedagogies to regulate their educational activities in Nepal. The observation found that the majority teachers and school administrations organized webinars to discuss in order to run academic activities during that pandemic crisis by using various means such as: Zoom, Microsoft Teams, Facebook Messenger, Google Meet. The majority teachers had low level of ICT skills for effective virtual class. However, teachers and students developed some level of ICT skills to run academic activities. A number of issues relevant to the teachers' practices of ICT such as low level of ICT literacy, no or lack of computer skills, limited access to internet facilities, insufficient knowledge of e-pedagogy and lack of administrative support, have been reported as hurdle in integrating ICT in teaching and learning activities in previous studies (Rana et al., 2019; Rana 2018; Thapa & Sein, 2018). The researchers' finding indicates that teachers need to improve some level of ICT skill and the government needs to develop infrastructure for integration of ICT in academic activities.

Online and distance education probably became new phenomenon for many teachers and students during COVID-19 crisis in Nepal although primary teacher training on radio as a distance education was introduced in 1984 and practised well for some years (Rana, 2018). Information and Communication Technology in education was given less emphasis for many years and the practice was limited in education. Nepal entered into the world of modern information and communication technology with the first use of IBM 1410 computer for processing census data in 1971 (Chapagain, 2006). However, *National Curriculum Framework for School Education 2005* after a long time introduced ICT to be used as tool to teach various subjects and to be taught as a separate subject (Ministry of Education and Sports, 2005). The government's education policy shows that online class can be reliable platform for teaching and learning activities in geographically diverse country Nepal.

The government initiation to equip schools and teachers with ICT, albeit there is limited funding for this project, can be promoted to transform traditional teaching and learning to modern learning. Thapa (2011) illustrated that successful use of wireless internet in remote Himalayan villages of Nepal. However, he argued that electricity cut, limited internet access, expensive internet, low financial status of parents and no computer literacy can be major barriers to ICT integration in school education. With the increasing pandemic crisis in Nepal, many particularly urban private schools, colleges and few university departments attempted to switch their physical classroom to online. Although schools earlier banned the use of mobile devices in school (Parajuli, 2016) schools, colleges, universities and the government asked parents and students to manage computer and internet to continue teaching and learning in online classes in this pandemic situation. However, the majority of students having no smart devices, internet and ICT skills particularly in rural areas were unable to join online teaching and learning and only few students particularly in urban areas attempted to learn on their parents' mobiles by using various apps such as Zoom, Skype, Google Meet, Messenger and Multi-disciplinary Peer-reviewed Research Journal; Dharan, M. M. Campus, TU.

Teams. Particularly after Covid-19 crisis, the teachers and students realized effectiveness of online class. The Nepal Government has decided to provide soft loans almost eighty thousand which carries a normal 1 percent interest with the hope of encouraging students and teachers to adopt new technology for new module of teaching and learning activities (Lamichhane, 2021). The action of Nepal Government encourages schools, colleges and teachers to adopt new method of teaching and learning activities.

### **Research Questions**

Covid-19 crisis made people realize how online classes also would be as effective as physical classes. New experiment of using different apps and technologies developed confident of teachers and students in terms of using ICT for obtaining information. Online class in Nepal was not as familiar as it was in European countries. However, the teachers, students and parents tried to adopt new module of teaching and learning activities in the crisis.

How is the students' experience of learning using Information and Communication Technologies during and after Covid-19?

- In what ways do teachers and students adopt new mode of teaching and learning activities?
- Why do the teachers and students think ICT as unavoidable tool for teaching and learning activities in future?

### **Review of Literature**

#### ***Students' Experiences of Using ICT in Teaching and Learning Activities***

Many studies have reported mixed learning experiences of students in virtual classroom setting. For example, American researchers (Blackmon & Major, 2012) in their qualitative study reported that online teaching and learning environment developed students' skills of time management, acceptance of personal responsibility and connection with peers. However, their study argued that some students were unable to establish close relationship with instructors and course content. A study (Knightley, 2007) in the UK found online class more convenient than traditional class in terms of accessing information through the use of technology. However, Motteram and Forrester (2005) argued that some students get frustration because of limited ICT knowledge and internet access in their locality (p. 294). Sit et al. (2005) found that the majority of the students in Hong-Kong expressed their satisfaction for online learning opportunities with animated graphics which helped them understand contents more comfortably.

Pun (2013) argued that the use of ICT and multimedia technology in language teaching would promote students' motivation and learning interest in the English language (p. 32). In addition, his research suggested that the use of ICT and multimedia technology can improve students' thinking and practical language skills. Parajuli (2016) found that the use of mobile in

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teaching and learning activities increased students' access to online class in rural Nepal where mobile is the only available technology to connect with internet. Rana et al. (2019) investigated that the use of ICT in teaching and learning environment allowed students to have access to audio-visual materials, colourful pictures, as well as text-to-speech features which made class interesting alluring interest of students in the classroom.

Rana et al. (2019) found that the use of ICT in academic activities transformed teaching strategy from teacher centered to student centered in Nepal. Moreover, they argued that this shifting role of teacher and students could create different environments of sharing ideas between teacher and student. Rana (2018) pointed out Nepal government's strategy to integrate ICT in academic activities by organizing different training to the teachers with the hope of developing teachers' ICT skills. However, his research reported that the majority of the teachers were not satisfied with the training provided by the government: they complained about the lack of strategies, specialist trainers, negligence of the resource person of the government. Dhakal and Pant (2016) found that the government and private institution played important role to transform old pedagogy to e-pedagogy enhancing training to teaching and non-teaching staff whereas result was beyond the expectation. The writers further argued that only the culture of e-learning environment and using digital technology may encourage students and teachers to use ICT in academic activities.

The researchers have studied effective role of using ICT in academic activities in different universities of the world. The majority research articles reported that integration of ICT in teaching and learning activities would bring positive result in the process of delivering information to the students. However, the adoption of ICT in teaching module in Nepal has not been studied. The paper examines how integration of ICT in teaching and learning activities would be future teaching module in Nepal.

### **Parents' Response on Online Learning**

The parents are responsible stakeholders for shifting teaching module of the schools and universities. The majority parents had no belief that internet or cellphone would be reliable sources of information for their children's academic activities. The American researchers (Basham et al., 2016; Mesch, 2009) found that restrictive parental mediation would save children from being bullied because parents may not allow them to chat with unknown people and stop their children going into bad websites. However, children may feel that their freedom has been destroyed. A study (Livingstone et al., 2015) in the UK found that majority of working class parents simply had low level skills of using ICT in terms of helping children to teach with the help of technology. They further reported that the parents have felt that the technology has created gap between the parents and their children. Wagle (2020) argued that Covid-19 changed parents' perspective towards virtual classes. The parents found online

classes as effective as physical classes during crisis. Moreover, he has given examples of Tribhuvan University and Kathmandu University which adopted online classes shifting physical classes. He pointed out the role of government to develop ICT infrastructure for effective virtual class in future. The editorial board of the Kathmandu Post (2021) studied the survey of National Campaign for Education which pointed out ineffectiveness of virtual class due to insufficient ICT skills of teachers, poor ICT infrastructure, parents' economic status for high speed internet and pre-plan of Nepal government. However, the study pointed out that virtual class would be unavoidable module of teaching and learning activities but government needs to take serious action to solve the challenges for online class.

### Research Materials and Methods

#### Research Design

The objective of this paper is to identify future direction of teaching and learning process in future particularly in Nepal. It as a qualitative research employed online semi-structured interviews to collect qualitative information (Cohen et al., 2007). Documentary analysis (Fitzgerald, 2012) helped identify research gap, theoretical idea and analyse primary data. As suggested by Denzin and Lincoln (2018) participants were selected purposively from two urban secondary schools. Six teachers from secondary level (three from each school) and fourteen students from secondary level (seven from each school) were selected on the basis of their voluntary participation. All the names in this paper are pseudonyms. The data gathered through interviews were analysed based on the principles of thematic analysis.

#### Data Collection Procedure

The data were obtained through online semi-structured interviews (Cohen et al., 2007) to explore students' online learning experiences particularly during pandemic situation and shifting module of teaching and learning activities particularly in Nepal. Participants were contacted on their phone and by using Facebook messenger for rapport building. After obtaining informed consent from the participants, they were interviewed on Zoom, Facebook Messenger and direct telephone call. Various archived documents such as journal articles, books, theses, website information, government documents and newspaper were critically analyzed to follow the examination of primary data gathered through interviews and observations. All the interviews with participants were recorded on personal laptop, mobile device and audio recorder.

#### Data Analysis

The gathered data through interviews and observations were analyzed thematically on the basis of the idea of Clarke et al. (2015). Audio records of interviews were transcribed, organized into specific themes and interpreted in a critical way. Interpretive phenomenology

analysis provided a lens to critically analyze the qualitative data (Crist & Tanner, 2003) various archived documents were read against the primary data.

### Results and Discussion

This section reports results through interviews with students, teachers and parents. The analysis of discussion is presented into the following themes such as necessity of ICT training for teachers and reliability of internet and electricity for adopting new module of teaching and learning activities.

#### Need of Teachers' ICT Skills

COVID-19 pandemic brought sudden change in medium of teaching and learning activities shifting face-to-face class into online class. The emerging situation has resulted in the increasing use of ICT in teaching and learning activities in Nepal. Interviews with the teachers investigated that although they had no sufficient ICT skills and enough experience of using ICT facilities in educational practices, they struggled to be familiar with ICT tools in order to teach students effectively in online classes. Interviews with students, teachers and parents revealed that Zoom, Google Meet, Facebook Messenger, Microsoft Teams apps enabled them to connect with each other and conduct teaching and learning from home. However, they shared that teaching and learning activities could not be as effective as it should have been due to teachers' low level of ICT skills and experiences at the very beginning. Teachers and students' comments suggested that teaching and learning activities would be more effective and productive if they had sufficient ICT skills. For example, Nir Jung said:

It is new experience for me to teach in online using Zoom. I learnt to download Zoom and make slides with friends. Although we lacked experience of using laptop and internet for teaching purpose, we tried to use them for academic purpose. I think we would do better if we were given proper training before. (Nir Jung, Science subject teacher, Dilman Secondary School)

His expression reflected how the teachers with limited ICT knowledge and skills attempted to manage online learning to mitigate the challenges during COVID-19 pandemic. Moreover, his comment reflects how teachers were excited to use ICT tools in academic activities although they had limited ICT knowledge and low level of skills. The teacher realized the need of improving ICT skills for teaching and learning activities in future. If the teacher lacks proper ICT skills, he/she could not perform well in the classroom because the concept of techno-friendly class is developing rapidly. It was clear from Nir Jung's statement that teachers' ICT skill would be as important as subject matter in virtual classes. He accepted that his class could more be productive if he had high level of ICT skills.

The teachers can teach effectively if they are eager to learn new skills and ready to adopt new technologies as means of delivering class. For example, Kareena said:

We faced difficulty at the very beginning of online classes. Particularly the teachers of Mathematics were unable to make slides but later on they slowly improved. However, the situation of the teachers teaching Nepali and Social Studies are still the same. They have not learnt yet to use Zoom properly for teaching and learning activities. They are not able to read message and feedback given by students either. (Kareena, a student at Dilman Secondary School)

Kareena's comment reflected students' dissatisfaction on teachers' delivery of lessons on Zoom class and their inexperience of using ICT tool in learning activities. Her expression reflected how teachers' limited ICT knowledge and skills influence students' motivation of online learning. Kareena's comment points out how teachers need to develop ICT skills in order to fulfill the needs of the time. Kareena's comments reflected the voice of the majority students that teachers rarely listened to them and involved in learning activities. However, some teachers of mathematics developed their performance later on. The example given by Kareena shows how teacher needs to be pro-active in order to update their skill as time demands. Some teachers' improvement in developing ICT skills and their effective class proves that how it is important to adopt modern technologies in teaching and learning activities.

Some students from science faculty and teachers argue that online classes are not as effective as physical class in terms of practical classes. They said that they would touch real object in practical class but they would just see objects or chemical in virtual class. Suraj said:

It is quite tough to conduct practical classes in online classes. We need to hold their hands and teach one by one in practical class. However, we may make our students understand theory displaying pictures through Google or YouTube. (Suraj, a teacher, National Secondary School)

Suraj's expression reflected impracticality of practical classes in online classes. His comment indicated that students would not be able to touch and play with the real objects in online class as in physical lab. However, they can learn by watching videos in YouTube. They can repeat videos time and again. Even the slow learner students can learn by watching videos.

### **Reliability of Internet and Electricity**

Schools and universities switched their physical classroom to online learning with the expectation of engaging students in their learning activities during COVID-19 pandemic situation. However, limited internet access and unstable electricity supply created problems in academic activities. The study revealed that ICT infrastructure needs to be improved in order to integrate it in academic activities particularly in Nepal. The majority of students and teachers

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expressed their dissatisfaction for internet speed and unplanned power cut which became challenge to smoothly conduct virtual classes. For example, Kareena said:

Wi-fi stops working when it starts raining. Sometimes teachers' net drops and sometimes students' net does not work. Most of classes are disturbed. (Kareena, a student, Dilman Secondary School).

Kareena's comment depicted the true picture of ICT infrastructure in Nepal. It was clear from her statement that how they were unable to continue their learning activities because of network issues and unstable electricity supply. Her comment indicated that students were unable to join online classes and teachers struggled to continue teaching activities because of slow network. Students in the interviews shared experiences that they were unable to hear sounds and see slides in their online classes. However, the Nepal Government has brought different policies related to Information and Communication Technology in order to implement ICT in education in Nepal (Shrestha, 2018). Moreover, he pointed out a lot of opportunities of using ICT in academic activities although there are challenges.

The ICT infrastructure of village areas is more pitiable than the condition of city areas. For example, Rina said:

I like traditional class. We have to take online classes by using expensive data in village. I have been living here since the government announced lockdown. So, we have no access to broadband internet for online classes in my village. (Rina, a student, National Secondary School)

Her comment provided a picture of why a large number of students in rural areas cannot have access to online education. Rina complained that they had to buy expensive data for their online classes. ICT infrastructure in village area demotivated students for online classes. Her comment provided the true picture of the nation where the majority of the students have been deprived of distance learning. Zoom class observations identified that the majority of students from village were unable to join online class at the very beginning. The observation found some level of positive changes in teachers' skill in delivering virtual classes and performance of internet.

### **Teachers' ICT Skills Enhance Quality in Academic Activities**

Discussion suggested that integration of ICT in academic activities is the demand of time. As time demands, the teachers need to develop ICT skill in order to make their class effective. The teachers were forced to adopt new technology in teaching and learning activities by COVID-19 although they had never received intensive training and support from the government before the crisis. Teachers who were not techno-friendly could not conduct their

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online classes as effectively as students had expected which was also reported by Rana (2018) that teachers' limited ICT skills influenced the effective delivery of learning content. Similarly Aslan and Zhu (2015) revealed that teachers need to be provided pre-service ICT training to plan lessons and effectively deliver in online classes. The majority of the students were not satisfied with some teachers' online classes due to their reluctance in improving their basic ICT skills for online classes in contrast, those who struggled to improve their ICT skills, their online class become more effective than physical class. The majority of the teachers had never thought that ICT tools would be helpful medium of teaching and learning activities before pandemic. They just used internet as a means of entertainment and communication. However, they gradually developed confidence on using new technology in academic activities through informal training from their friends. The findings suggested that teachers required minimum ICT skills for effectively conducting online classes. Observation of Zoom classes revealed that half of the teachers lacked skills of sharing screen and using PowerPoint properly. Their limited ICT knowledge for online classes created monotony in students' learning activities. Teachers had inferior feelings to control online classes when they lacked sufficient ICT skills for the practice of e-pedagogy which was also acknowledged by an earlier study (Ertmer & Leftwich, 2010). But the teachers with ICT skills had confidence and their classes were more effective in terms of making students understand through different slides and engaging students showing different pictures and videos as necessary.

Poor ICT infrastructure of Nepal were the major barriers of online classes that aligns with the finding of Consistent to earlier findings in particularly rural context of Nepal (Rana, et al., 2019) the lack of ICT infrastructure in schools, teachers' limited ICT knowledge and skills and students' limited or no access to ICT have been identified major barriers to the management of online learning for all of the students at the schools involved in this study. Students were unable to continue their learning activities because of network problems and unstable power supply which might be specific to Nepal. Students particularly from rural areas had no access to broadband internet. Moreover, half of the students involved in this study from city areas also did not have internet because their family could not afford expensive internet facility. Teachers with limited experience of using digital technologies in their educational practices are usually reluctant to change their traditional strategies of teaching and learning (Day et al., 2006). It was found that students had to struggle a lot for joining Zoom class. Even after joining online classes, they were unable to hear clearly their teachers and see slides on the screen. The lack of high speed internet, expensive devices, high cost of mobile data, family's unreliable source of income and students' mental preparedness were identified as major challenges in the implementation of online classes that resonates with the finding of earlier study (Ramji & Sultana, 2020). Improvement of ICT infrastructure is the first requirement for virtual class. Slow internet and unscheduled power cut have created problem in running

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effective online class. However, the use of ICT in teaching and learning activities is the future module of teaching.

### Conclusion

The study identified that teachers and students were forced to use Information and Communication Technology in COVID-19 crisis as means of teaching and learning activities which shaped the future direction of teaching module in Nepal. The crisis brought changes in traditional teaching and learning activities adopting new technologies and ICT in academic activities. The discussion pointed out poor ICT infrastructure and limited ICT knowledge as obstacle in the course of shifting physical class into online. However, the transformation of teaching and learning process has become final option. COVID-19 pandemic brought change in the traditional way of teaching students by establishing effectiveness of online classes. The teachers were forced to use Zoom, Teams, Facebook messenger, and Google Meet in order to run academic activities during nationwide lockdown. The teachers could engage their students in academic activities in such long lockdown through online classes. The majority teachers had no experience of using ICT particularly in teaching and learning activities before but the teachers, students and parents understood effectiveness of virtual class later on.

The majority parents realized the effectiveness of online class even if they had no easy access to internet. Easy access to materials and no obligation to visit physical class made students, teachers and parents realize online class as future direction of teaching module in Nepal. Although there are barriers for online classes, such barriers can be shut down if the government, policy makers, teachers, students and parents realize importance of integrating ICT in academic activities as the demand of time.

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