

## **COVID -19 Crisis and Alternative Learning: School Stakeholders' Perceptions**

<sup>1</sup>Gadhi Raj Magar and <sup>2</sup>Karna Rana (PhD)

<sup>1</sup>Lecturer (English), Kamala Multiple Campus, Dudhauri-9, Sindhuli, M.Phil. Scholar (NOU),  
Email: gandhiraj2028@gmail.com

<sup>2</sup>Program Coordinator for M.Phil. program, Nepal Open University

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### **Abstract**

This paper reports on an analysis of stakeholders' perceptions of online learning for school students in Nepal. It utilised online semi-structured interview with 13 stakeholders from a municipality, two schools, and a community campus to gather qualitative data. The content analysis of various archived documents provided a ground for data analysis. This research paper reports of perceived value of online learning in the COVID-19 pandemic, opportunities for transforming the conventional physical classroom to the online mode of learning and challenges to switch to online learning in rural Nepal. It further reports on how teachers in rural areas explored community-based mobile teaching as an alternative mode of learning where there was lack of ICT infrastructures. Teachers' lack of e-based teaching experience, limited ICT knowledge and skills, and lack of digital devices feared them to adopt the online mode of learning. Had the government and rural schools developed minimum ICT infrastructure, trained teachers to use ICT facilities and provided necessary support to students, rural students would have been able to access online education in the crisis.

*Keywords:* COVID-19 pandemic, ICT, online learning, access, community-based mobile teaching

### **Introduction**

COVID-19 outbreak in Wuhan, Hubei province, China in December 2019 across the world including Nepal has caused the crisis followed by the lockdown in many countries. The pandemic has resulted in closures of schools and universities keeping billions of students at home. Since the first lockdown declared in Nepal in March 2020, all the schools, colleges and universities have been completely locked down for an uncertain time. However, some particular urban private schools, colleges and few university departments have attempted to switch their physical classroom to online classes by using various ICT tools such as Zoom, Skype, Meet, Teams and Messenger. Specifically, Zoom one of the popular video communication tools founded in America by Eric Yuan in April 2019 (Carlson, 2020), has become a common tool for online teaching and learning in Nepal in this pandemic situation. It was reported that the number of Zoom users multiplied in the first few months of 2020 this year than in all of 2019 (Collins, Ocampo, & Paski). Using information and communication technology (ICT) effectively to enhance teaching and learning depends on schools' policies and practices that focus on how to use digital devices effectively in the classroom (Reimers, 2020). COVID-19 has affected economic as well as educational systems worldwide, leading to the near-total closures of schools, colleges, and universities.

During the lockdown, many students have attempted online courses, training programmes and webinars. The COVID-19 pandemic and the lockdown have brought enormous uncertainty of scheduled school and university exams. Zoom, a free application, has been observed a powerful conference tool to teach students and share learning materials. It allows users to record the entire session on the personal device and use the record for later discussions and onscreen whiteboard features can be used as the classroom blackboard (Atreya & Acharya, 2020). However, the majority of schools and students having no ICT infrastructure, limited or no internet access and ICT illiterate teachers (Rana, 2018) are unable to use such digital tools to continue their teaching and learning in this crisis in Nepal. The lack of technological infrastructure, high cost of internet, low speed of internet, the financial crisis of the family, and mental pressure for the students have been observed as common issues particularly in developing countries (Ramij & Sultana, 2020).

But some developed countries have switched their conventional physical classrooms to online during the pandemic. Chinese educational institutions have utilised digital tools such as Lark, Ding Talk, Radio, television, mobile devices with preloaded contents, bundles of books and paper worksheets in this crisis (Selwyn & Jandrić, 2020). Had the government of Nepal equipped educational institutions with ICT and teachers and staff with ICT knowledge and skills, they would have been able to continue their educational activities even in the COVID-19 pandemic in the way the developed countries did. Although the National Curriculum Framework for School Education 2005 identified ICT as a tool to teach various subjects and other policies and plans emphasised the ICT in education project, the government of Nepal involved non-governmental organisations (NGOs) to implement the project instead of allocating budget to this project (Rana, Greenwood, Fox-Turnbull, & Wise, 2019). The COVID-19 pandemic has created great challenges for the global higher education community as well as opportunities to learn from the pedagogical developments of other universities, in order to strengthen collective responses now and in the future (Crawford, Butler-Henderson, Rudolph, Malkawi, Glowatz, Burton, Magni, & Lam, 2020).

Several countries have initiated multiple strategies to fight the COVID-19 including school closures. Schools and universities in Nepal have attempted to conduct their educational activities in the online mode by using various tools such as Zoom, Microsoft Teams, Google Meet, Skype, Messenger, WhatsApp, Hangout, We-Chat, YouTube, Lark and Ding Talk. The use of a virtual group video platform like “Hangout” can help both teachers and students for peer and group discussion in a safe environment (Duke, Grosseman, Novack, & Rosenzweig, 2015). Other web-based video conferencing tools such as Skype, Elluminate, Adobe Connect, and iVisit in terms of cost, features, audio and video quality can ease online learning (Karabulut & Correia, 2008). Many freely available apps can be utilised to interact with learners, create group discussion, share learning materials, give feedback on students’ works and assess learning activities (Barhoumi, 2015; Bosch, 2009; Clifton & Mann, 2011; Duffy, 2008; Rienzo & Han, 2009; Wang, 2008).

## Research Questions

Some questions regarding the COVID-19 global pandemic are as follows:

- How are the stakeholders' perceptions of online learning for school students?
- How are stakeholders' experiences of managing online learning for schools?

## Literature Review

A limited amount of research is concerning the COVID-19 global pandemic and its effects and impacts following lockdown. It overviews online class in crisis, teaching strategies on online mode, stakeholders' perceptions on it, and its methodological analysis.

### Online Class in Crisis

Thapa and Saebo (2011) in their study reported that unavailability of ICT in rural areas created gaps between urban and remote communities because of weak network and less ICT equipped educational institutions. Thiede (2012) identified that the lack of high-quality internet, electricity, and supporting ICT infrastructure were major challenges of online learning in Nepal's rural schools. Allen and Seaman (2013) explored that maximum course contents could be delivered via online than face-to-face which included both traditional and web-facilitated courses and allowed more interaction as well as discussion. Nan and Lu (2014) suggested that online classes can supplement face-to-face classes particularly in the crisis like the post-earthquake. In the context of Russia, Meskill and Anthony (2014) revealed that more formal academic coursework moved into online class during a natural disaster to meet such challenges which were addressed in the context of new media and new learning practice. In his earlier study of America, Nash (2015) investigated that despite the drawbacks, online education was the best alternative to continue teaching and learning activities when there were problems in face-to-face learning activities. In the context of Japan, Mehran, Alizadeh, Koguchi and Takemura (2017) reported that students found online learning effective for their collaborative learning rather than face-to-face education.

In the context of South Korea, Kim (2018) explored that how misogynistic discourses constructed and reproduced in a male-dominated online community and the growth in online misogyny is analyzed in relation to a crisis in hegemonic masculinity. Piccardo, North and Maldina (2019) explored that change and innovation in education require digital learning that stimulates in planning, teaching, and assessment that results the development of an online tool produced in a sister project of the European Centre for Modern Languages (ECML). Hodges, Moore, Lockee, Trust and Bond (2020) argue that an online class seemed crisis-prompted in critical time such as COVID-19 pandemic and natural disasters as it offered alternative learning opportunities. Hodges et al. (2020) explored that online classes could contribute to prevent spread of pandemic allowing learners continue their teaching and learning activities at home and temporarily cancelling all face-to-face learning activities. However, Gacs, Goertler and Spasova (2020) argue that online teaching can face crisis when there is improper management of teaching and learning, such as lack of ICT infrastructure and skillful workforce. Rapanta, Botturi, Goodyear, Guàrdia and Koole (2020) in their recent study investigated that the COVID-19 pandemic raised significant challenges in teaching and learning activities and

triggered university teachers to overcome these challenges adopting students' learning via online.

### **Teaching Strategies on the Online Mode**

In the context of America, White and Weight (2000) offered strategic guidelines to college teachers venturing into online and virtual learning. Moore and Hart (2004) investigated that disciplines like Nursing in university, experienced increasing demand of online courses and they had been successful in facilitating intensive courses through distance learning. In their study, Tallent-Runnels, Thomas, Lan, Cooper, Ahern, Shaw and Liu (2006) investigated that four topics such as course environment, learners' outcomes, learners' characteristics, institutional, and administrative factors in online teaching and learning activities found little consistency of terminology, discovered some conclusive guidelines, and identified developing lines of inquiry. Trepal, Haberstroh, Duffey and Evans (2007) indicated that technology advances more routine, attention must be paid to instruct various skills and recommendations for helping students to establish and maintain therapeutic relationships via online. Zsohar and Smith (2008) suggested that online courses were an integral part of nursing education programs responsible for developing and teaching asynchronous online courses that can be challenging, especially for neophyte educators. In their study, Cole and Kritzer (2009) revealed that online and hybrid courses have become an essential part of teaching education programs for preservice and in-service training. The authors described some strategies such as online learning, ICT4D, and e-education to improve their online teaching and make their online courses be more effective.

Elison-Bowers, Sand, Barlow and Wing (2011) reported online classroom instruction as an exciting technology for students, instructors and administrators as it offered both audio and visual sources of learning. In the context of Russia, Conceição and Lehman (2011) illustrated that formal academic coursework shifts into online, especially to synchronous, multimodal sessions directing and ensuring learners' attention particularly in problematic situation where instructors reported instructional strategies. Veletsianos and Navarrete (2012) explored the potential of social networking sites highlighted by researchers and practitioners because earners developed independent study skills. In India, Crawford-Ferre and Wiest (2012) suggesting to conduct researches for investigating the effectiveness of online teaching and learning based on students' experiences and participation in order to manage classes with appropriate strategic planning. A Chinese study (Ni, 2013) found that public administration programmes extended their online education to overcome academic loss during the pandemic. Acton, Chipman, Lunden and Schmitz (2015) illustrated that online learning enabled students to build some simulators to be used independently making cognitive and psychomotor tasks faculties active and ensuring sufficient practice with feedback.

Kebritchi, Lipschuetz and Santiago (2017) found that online education changed all components of teaching and learning activities in higher education where issues in delivering content provided an overview on online education. Kurt (2017) reported that the flipped classroom, a form of blended learning, was an emerging instructional strategy reversing a traditional lecture-based teaching model to improve the quality and efficiency of the teaching and learning process. In the context of Japan Neri and Wilkins (2019) investigated that some

strategic plans like collaborative learning and online-task based activities improved quality education and service. Similarly, Acharya, Poudyal, Lamichhane, Aryal, Bhattarai, Adhikari, Bhatta, Gyawali and Parajuli (2020) pointed out that the COVID-19 global pandemic affected all aspects of human life including education that brought online teaching and learning to continue the school classes in Nepal by using various digital platforms such as Zoom, Skype, Messenger, MS Teams, and Google Meet. Gacs et al. (2020) investigated that online teaching was found to be as effective as face-to-face learning during any sort of natural disaster like the COVID-19 pandemic and that online language teaching has different affordances and challenges than face to face teaching, which can be taken into consideration when online language education is carefully planned. For instance, online learning management as in the context of Bangladesh (Mamun, Chandrima, & Griffiths, 2020) can result in the worst situation to the extent that a private university student (aged 22) and his mother (aged 47) committed suicide together due to economic crisis by ingesting poisonous gas tablets in a forest close to where they lived.

### **School Stakeholders' Perceptions**

In Georgia, Pettyjohn (2012) reported that stakeholders perceived the online digital class as both an opportunity and challenges for high school students as it supplemented learning for their credit recovery and made learners addictive in digital devices. Dawadi, Shakya and Paudyal (2016) reported the lack of skilled workforce, unreliable and costly internet facility, low level of ICT literacy in rural communities, high hills and mountains, lack of hydropower in the countryside and low power solar energy, and lack of security for ICT infrastructures hindered the students' online learning. Huber, Sepehri-Amin, Goertler, Groenefeld, Teliban, Hono and Suess (2019) suggested that online education was flexible, adaptive and it allowed the access to authentic materials and supported for communicative tasks as well as multilingual learning. In the United States, Joshi, Chapagain, Kharel, Poudyal, Murray and Mehmood (2020) explored that many institutions offered online courses to fulfil students' demand although a major educational stakeholders including instructors and students perceived the benefits and limitations of online teaching and learning. Similarly, the survey by Currey, Sprogis, Burdeu, Story, Considine, O'Donnell, Gentle, Backhouse and Oldland (2020) suggested that digital Team-Based Learning (TBL) is feasible, efficient, engaging and well accepted by commercial stakeholders offer an opportunity to develop learning autonomy. Demuyakor (2020) illustrated that stakeholders of higher educational institutions perceived online education as the best option during worst situation. Wadhwa and Khatak (2020) analysed that a lack of proper ICT equipment, inadequate training and irregular system evaluation of government are major hurdles for many teachers and students to practice ICT in online education.

Similarly, in their study, Forneris et al. (2012) explored that district decision-makers and school leaders are faced with the challenge of evaluating various options to support at-risk students who are in danger of not graduating with their peers and supplemental online learning is considered an innovative means of assisting students with credit recovery. In his study, Pettyjohn (2012) explained that online learning allowed greater flexibility, and the opportunity for students to have control over learning promoted academic success and improved outlook

where economic disadvantage continued to impact access to online learning. In a study, White (2011) investigated that school stakeholders such as teachers, facility managers, administrators, and school board members were increasingly concerned about the academic achievement of students involved in technology mediated learning. Choudhury and Pattnaik (2020) elucidated that e-learning stakeholders and no stakeholder influenced the world of electronic learning in isolation to keep up with the changing trends of technology and the associated learning environment. In their study, Wagner, Hassanein and Head (2008) explored that successful implementation of e-learning was dependent on the extent of the use of the stakeholders which were addressed and discussed as needs and concerns of the various stakeholder groups.

### Methods and Materials

This qualitative research employed an online semi-structured interview to gather information as suggested by Cohen, Manion and Morrison (2011). As recommended by Denzin and Lincoln (2013), 13 participants (see Table 1 below) were purposively selected to explore their perceptions on online learning during COVID-19. All of them were selected on the basis of their participation. The participants were renamed with pseudonyms to maintain anonymity. The data gathered through interviews were analysed following thematic analysis.

Table 1: Participants Involved in This Study

Organisation	Participant	Gender	Posts
Dudhauri Municipality	Shyam	Male	Mayor
” ”	Kumari	Female	Deputy Mayor
” ”	Padam	Male	Govt. Employee
Kamala Multiple Campus	Hari	Male	Campus Chief
” ” ”	Matrika	Male	Chairman
Ladabhir Secondary School	Kumar	Male	Chairman
” ” ”	Mohan	Male	Head Teacher
” ” ”	Maya	Female	Primary Teacher
” ” ”	Rebica	Female	Student (Grade 12)
Saraswati Secondary School	Sanjib	Male	Administrator
” ” ”	Kamal	Male	Nepali Teacher
Nepal Communist Party	Laxman	Male	Municipal Chairman
Nepali Congress Party	Kumar	Male	Municipal President

### Data Collection Procedure

The Participants were followed by online semi-structured interviews to explore their perceptions online learning during pandemic situation (Cohen, Chen, McCauley, Gamble, Hosseinipour, Kumarasamy, Hakim, Kumwenda, Grinsztejn, & Pilotto, 2011a; Cohen, Chen, McCauley, Gamble, Hosseinipour, Kumarasamy, Hakim, Kumwenda, Grinsztejn, & Pilotto,

2011b). After obtaining the informed consent from participants, they were interviewed by using the Android cell phone and its natural camera along with the video on multiple occasions. The interviews were recorded on a mobile phone. Archived documents like books, journals, articles, thesis, website, government documents and newspapers were read against primary data.

### **Data Analysis**

The data gathered through the interviews were analysed based on the idea of audio records of interviews were transcribed, organised into specific themes and interpreted in a critical way. Interpretive phenomenological analysis (IPA) provided a lens to critically analyse the qualitative data (Smith & Shinebourne, 2012).

### **Findings**

A couple of findings from the overall study are reported here. These include findings relevant to ICT from the different stakeholders and their perceptions to resulting various alternative modes of learning during the pandemic and the understanding of their practice on digital devices.

### **Digital Learning Process**

Interviews with the participants involved in this study investigated that various digital apps such as Messengers, Gmail, YouTube, Viber and WhatsApp along with Zoom are used in online classes in place of conventional physical classes for digital learning. The participants emphasised the need for alternative mode of teaching and learning to maintain educational activities during COVID-19 when educational institutions have been locked down to prevent the spread of the pandemic. For instance, Hari, Campus chief of Kamala Multiple Campus said:

We are using free digital apps such as Messengers, E-mail, YouTube, Viber and WhatsApp along with Zoom. A great majority of students have android mobile phone in use in online class without any difficulty. They can regularly take their online classes if the classes go smoothly.

His comment indicates that majority of the students had an access to ICT tools for the online class. Digital classes would be regular if the students had necessary requirements. Sometimes the online classes were successful due to the presence of majority of the students. The majority of the stakeholders have similar voice on academic activities; lack of ICT infrastructures and internet unavailability which hurdles the students' regular learning. Lekhnath, a member at Bagmati Province, shared his ideas:

This pandemic has affected all over the world mostly in educational sector in developing countries rather than the developed ones. The major reasons for this class hurdle are various geographical structures [...] and economic crises. In this way, teaching online seems impossible here. In Himalayan and Mountain regions, we cannot resume the online class as regular but in contrast, we can start the class in Terrain region again.

His comment indicates that the geographical structure was not favourable in the Himalayan region for online classes. Teachers needs to apply various kinds of methodologies and

techniques such as community-based mobile teaching, smaller group teaching, and home base teaching in such.

### **Perceptions of Political Parties**

Online learning is not as effective as learning in the physical class for various reasons like difficult geographical structure, lack of internet access, and poor collaboration system. Maintaining physical: social distance (staying at least 6 fit away from people to avoid getting fatal sickness) and all sort of safety health would resonate for the students. Laxman, a municipal chairman of the Nepal Communist Party, pointed his view:

In my party's point of view, if the government of Nepal has implied online system, the students will be benefitted and they do not have to waste their invaluable time. Regarding Dudhauri Municipality, almost all the students will be benefitted via distance learning if our party's suggestions were followed by the Local Government. Otherwise, students' future will be a dilemma.

His comments specify that online education for the students would be beneficial if his opposition political (Nepal Communist) party implied online education properly. But in contrast, he felt humiliated and cursed to his party's worse leaders who did not allocate the adequate budget in this fiscal year for online teaching and learning activities. But for another political party (the Nepali Congress) in the Government did not show any keen interest to the secondary students' teaching and learning activities in this pandemic. Kumar, Municipal President of Dudhauri, shared his views:

Yes. We are planning to discuss regarding online class with the Mayor, education officer and the stakeholders in this municipality. Digital class is not effective for primary students but it will be interactive and useful for the secondary ones. In our every community, there is at least a primary school where we can continue the class by maintaining adequate physical distance. It can be possible to continue for class-9, 10 and above by using the alternative mode of learning. ECDC (Early Childhood Development Center) to 5 classes can continue the physical class by maintaining social distance and all aspect of safety health.

His statement strongly emphasises that his political party would be fruitful for the students by inferring online class. He again expresses that the Nepal Government or Nepali Congress Party did no good works for the students. They only talked and discussed on their political benefits and their own fraternity profit. Most of the participants reported that online classes during the disaster like COVID-19 could be the best and most effective mode of alternative learning, if the students got the strong access to broad band internet. Online learning for the students during the pandemic needed to shift into another aspect of learning process. Shyam, Mayor of Dudhauri Municipality illustrated his ideas as following:

It is better to use online class via Zoom if the students are getting equal access in the internet. We have another view on it that we cannot involve all the students in online class as in the conventional classroom due to unavailability of internet and economic crises. Only active and rich students can attend their regular online class rather than

those of a lower economic status. Online may be one of the best alternative modes of learning than staying in vacuum at home.

His comment indicates that all the students of secondary level did not have equal access to online class due to lack of the internet facilities and financial shortage. If all the students were equipped with necessary ICT tools, it would be effective to transform their information and knowledge via the alternative mode of learning addressing the problem of the COVID-19 pandemic. The participants involved in this study shared using various free apps in the online classes which are meaningless due to inadequate access to ICT infrastructures and its requirements. As data collected by the teachers on TV, Radio, FM, Internet and android mobile service showed minimum utilisation of the stakeholders. Padam, Municipal Education Officer at Dudhauri Municipality, expressed:

Yes. [...] because if you teach at a community like Chautara [...] the parents will be responsible. Education Ministry don't speak any words for school and the future of the students. Although the majority of the parents told not to call or gather the students in the school premises till its solution. Like in India, school teachers used another aspect of teaching learning mode by using loudspeaker to teach the students in smaller group maintaining with adequate social distance.

His comment shows those students were not allowed to call in the school premises although teachers could facilitate alternative ways of learning using either by online mode or by smaller group teaching. Teachers could distribute learning materials visiting the villages of the students and change could be brought about in the ways of teaching. Teachers could also use the idea of other developed countries' methodologies like using loudspeaker to teach students during the COVID-19 pandemic. They could find many other alternatives and learning processes which could be suitable in their locality.

### **Community-based Mobile Teaching**

Most of the participants involved in the interview shared their ideas to use other methods of teaching to reach all the students who were not connected via the online mode. Amongst them community-based mobile teaching is one of the best ideas to resume the students' course when online education is not accessible. To fulfil the students' academic request, community-based mobile teaching played an energetic role that displaced the conventional teaching. Kamal, a teacher at Saraswati Secondary School, shared his ideas:

Our locality is [...] moving towards urban. There is no high bandwidth internet facility for students and teachers to take online classes effectively. In this locality, [...] community-based mobile teaching is one of the best alternative modes of learning rather than Radio, TV, and online class. On community-based teaching, students can raise their questions [...] and teachers can solve their problems on the spot [...] so online class seems impossible in our locality due to poor access of internet and difficult geographical structure to fulfill their requirements.

His comment explores that teachers would use a suitable alternative mode of learning to reach the students and continuity could be given in learning activities in place of conventional classes.

Visiting students' home or their locality by the teachers could draw the students' attention to learning. Parents would aware conscious about their children's education and enhancement could be brought in learning. There are no any options of pedagogy in place of community-based mobile teaching and the teachers can give their time and solve the problems of the students who are experiencing the thirst of taking classes. Teaching in smaller groups of students maintaining adequate physical distance and safety health will be fruitful rather than online class. Sanjiv, a government employee, expressed:

Teachers can go to students' houses [...] in allocated time and teach their students as their lesson plan under Community-based mobile teaching. They can maintain, safety health and do discussion about their course completion. If the students want to make any queries with their teachers, they can freely ask from the spot which they don't understand.

His reflection presents that community-based mobile teaching was also an aspect of teaching to enhance students' learning during the pandemic. Students could ask their teachers about the difficulties whereas teachers could also supply them educational materials to solve their problems. Although whatever pedagogies among them, online education might play the fundamental role to continue the class that might help to cover the students' academic course. Majority of the students' participation investigated that online education is one of the best alternative modes of learning during natural disaster like the COVID-19 pandemic. Facilitated by all sorts of ICT infrastructures, strong internet access and collaborative learning would be fruitful for the students. Rebica, one of the students of class12 from Ladabhir Secondary School shared her ideas thus:

I have good interaction with my friends and teachers as well about our course via online. Our subject teacher solves the problems if we raise the relevant questions with them. If we have any queries, we can join in the Zoom Class online and share our interaction, perceptions and experiences. Every day except holiday, from 10 am to 5 pm, we all attend the class regularly. We have to do our assignment and submit to the subject teacher via online in time. So, we have very convenient time to discuss and interact with teachers and the friends online.

Her comment reflects those students who were enjoying in their study and assignment with their friends and she interacts with her subject teacher if they had an online access. Semi-off line apps/tools like Messenger, YouTube, and SMS be fruitful for those who are out of the network access. She again addresses that getting beyond all these above amenities, nobody could get this access and benefit.

## **Results and Discussion**

The expectation before the collection of information was different from the findings. It was expected that almost all the participants had some ideas and visions about the use of Zoom for online learning. The majority of the teachers were actively using Zoom for online teaching by the time of the interviews. However, the participant teachers reported that a large number of teachers were unable to manage online teaching and learning activities. Stakeholders such as School Management Committee members, local government leaders, government employees,

campus chief, head teachers, teachers, students, parents and political leaders had diverse experiences and perceptions of the online mode of teaching-learning. The Findings suggest that the Zoom class in the pandemic situation has become to some extent effective to engage students, albeit limited, in their educational activities. Students appreciated teachers' initiative for online teaching via Zoom which allowed them to resume their courses from home in the absence of physical classes. However, they argued that they could not learn what they had expected from their teachers. Similar to international reports of stakeholders (Burgess & Sievertsen, 2020) this pandemic has a great impact on students' regular learning activities following the lockdown in the pandemic. Most participants emphasised on online learning during the crisis like natural disaster and the COVID-19 pandemic. Mehran et al. (2017) argue that countries, specifically their educational institutions, need to be equipped and prepared for the potential crisis. Nevertheless, the lack of ICT infrastructure, limited internet access, unreliable electricity, untrained teachers and lack of administrative preparedness, particularly in rural schools (Rana et al., 2018), have been identified as major barriers to switch to online learning. Stakeholders (Rana, Greenwood and Fox-Turnbull (2020) resonate that the government of Nepal does not have clear policy and funding for the implementation of internet-based learning.

Furthermore, the lack of high-quality internet, power cut, and limited ICT infrastructures are major challenges to under-developed nations (Thiede, 2012). Such facts in Nepal suggest that the government and educational institutions need to allocate adequate budget to the development of minimum ICT infrastructure, teachers' ICT knowledge and skills, and online learning. Although, Demuyakor (2020) argues that poor management of online learning may increase students' frustration similar to Ghanaian students at Chinese universities during the COVID-19 pandemic who could not cope up with massive students in online classes. Some of the participants in this study appreciated that learning in crisis. Health awareness camping model in communities (Kopelovich, Monroe-DeVita, Buck, Brenner, Moser, Jarskog, Harker, & Chwastiak, 2020) can be a productive model of continuing educational activities particularly in remote villages where they have no access of the internet, computer and electricity. Using loudspeaker for teaching and learning activities in the community similar to the practice in rural India India (2020) might be another alternative mode of helping students learn their courses.

Many national and international institutions offered online learning to fulfill students' academic demand during this pandemic (Joshi et al., 2020). However, the majority of the participants in this study reported that online classes are not as effective as face-to-face physical ones due to the lack of physical proximity between teachers and students. They complained against the postponement, cancellation or delay of regular exams during the pandemic. The management of the government has at some level failed in terms of regulating the entire education system in this period. The limited practice of online mode of learning could not be as effective as reported in the international contexts (Gacs et al., 2020); Lee (2020). Local authorities the particularly who had alliance with the Nepali Congress (NC) criticised for the weak management of education in the pandemic crisis. Their complaint was similar to Campos, Proto and Estrin's (2010) idea of.....(?) , whether or not the leaders in power have enough idea

and vision for the management of education in crisis. Similarly, some of the political participants who had power in the government argued that their political leaders neglected allocating adequate budget to ICT. The participants who belonged to opposition political (Nepal Communist) party made common comments how oppositions normally criticise the government to save themselves from the facts behind them (Dave, Friedson, Matsuzawa, & SaDbia, 2020). However, political participants, albeit favoured online learning, had a lack of vision about online and distance learning maybe because they did not have a minimum of digital literacy. The Findings suggest that the new technologies (computer, laptop, and android cell phone) and applications (Zoom, Messenger, YouTube and Email) into the existing infrastructure may bring both challenges and opportunities for teachers and students. The ICT facilities allows them to learn to use in their educational activities. If they get proper training to use such facilities, they can make use of it in course of time. Though, they may get scared by the technologies when they do not get adequate and consistent support to learn and use the technologies.

### **Conclusion**

Findings suggest that various teaching and learning strategies have been adopted to mitigate the COVID-19 pandemic crisis. The Online mode of learning particularly in the places where there was internet access and teachers' mobile teaching in communities have been identifies the major options followed by schools. Online learning has become an alternative to traditional teaching approaches, particularly in urban contexts. Nevertheless, many students in rural areas who had no internet and computer relied on teachers' community-based mobile teaching. The Stakeholders expressed concerns on the lack of ICT infrastructures, insufficient teacher training to use ICT, teachers' limited ICT knowledge and skills, and students' lack of access to computer and internet. Adopting new technologies and applications to the existing infrastructure would bring opportunities for teachers and students. However, the unavailability of internet access, irregular electricity, limited ICT infrastructures, and economic crises prevent the development and implementation of e-basedCa learning in rural schools. Using loudspeaker and community-based mobile teaching and learning strategies in rural areas might be some alternative modes of learning for students in the pandemic.

The Online mode of learning is perceived less effective than conventional mode of learning due to lack of physical closeness between teachers and students. Students' courses and exams were incomplete in the crisis due to postponement, cancellation or delay of regular activities. The participants who had alliance with the party on government power criticised their own leaders' poor management of education in the pandemic. The leaders in opposition pretended to be honest by blaming the government for not managing online mode of learning in the crisis. Some participants favoured online education for the pandemic as well as normal situation to improve the quality of education. They had a lack of a visionary plan about online and distance learning. Had the government of Nepal developed a minimum of ICT infrastructure across the country, all the students including those from marginalised and disadvantaged communities would have been able to access online education.

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