



Health Problems Experienced in Online Learning During COVID-19 in Nepali Universities

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Volume 4, Issue 1 (2021)

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The emergence of new pathogens and the reemergence of other diseases have the potential to impact human lives. The novel coronavirus of 2019 (COVID-19) is one of them, which has created a global health crisis. The first case of COVID-19 in Nepal was found on January 23, 2020 (Ministry of Health and Population, 2020; Paudel et al., 2020). All of the economic activities and social gatherings came to a halt. Because it occurs in congregate settings, Nepal's education system has been affected tremendously. According to UNICEF (2020), this ultimately kept over eight million students inside their homes, preventing participation in practically all types of activities, including classroom education. Over 35,000 schools were closed due to the risk created by the COVID-19 pandemic (UNICEF, 2020; World Health Organization [WHO], 2020). To overcome the educational challenges caused by COVID-19, like other countries, Nepal has been forced to migrate its teaching processes online for most schools. To minimize the impact on students, the OECD (2020) suggested that remote teaching can offer a significant role in filling educational gaps during the pandemic.

In Nepal, schools with access to technical devices and knowledge could quickly move forward with online classes. However, other schools could not do so due to a lack of equipment and human resources. Experts have expressed concern that online classes may further impact the country's digital divide, which has already grown over the past two decades (Neupane, 2020). Witze (2020) showed that digital and educational inequalities would continue to deepen during the pandemic, with 40% of countries worldwide not supporting learners at risk during the crisis. UNESCO (2020) called on the region to foster more resilient and equal access by concentrating more on student groups with the highest potential for being left behind. Because not all students or schools have or could provide internet and computer access, mixed education methods are needed to ensure equity of access. Alternative solutions include radio, television, and mobile technology to minimize educational inequities.

Furthermore, home delivery of printed learning materials for those excluded from technology would ensure a more extensive reach overall (UNICEF, 2020). Therefore, synchronous and asynchronous mean scheduled classes beforehand for more interaction during online classes. Using different devices like mobile phones, laptops with internet access. As suggested by Zhu and Liu (2020), technical devices students from anywhere can interact with instructors in their study.

The COVID-19 pandemic has also forced most universities to turn to online teaching and learning modalities, in part, due to a recommendation by the government of Nepal. Due to immediate crisis response migration in education to online classes, faculties and students were not mentally or technically prepared for online classes (U.N., 2020a).

Part of the mental health impacts of the pandemic stems from the disruption of day-to-day activities and economic security. The recent International Monetary Fund (IMF) projections show

how ECA countries' economics will be affected by these impacts (UNICEF, 2020). In Nepal, the growth is expected to fall in the range of 1.5 to 2.8% in the fiscal year 2020, reflecting lower remittances, trade, tourism, and broad disruptions caused by the COVID-19 outbreak. The following year, projections show that growth is likely to remain subdued due to the pandemic's lingering effects, with some recovery expected in the fiscal year 2022 (The World Bank, 2020). Therefore, this article discussed students' and teachers' perceptions while participating in online classes during the lockdown. It has also analyzed different health-related problems that arose due to online classes and their effectiveness with alternative suggestions and future sustainability plans to tackle the pandemic situation.

Emergency e-learning requires efforts to mitigate structural inequalities of class and race. In the long run, open access to rural communities with broader access, along with a decrease in tuition fees, is required (Michael & Murphy, 2020). This compulsion situation of online classes has increased the standard of education. However, the question remains of it has been able to utilize its full potential and will imply a positive impact in the long run. Closures of schools and other learning spaces have impacted 94% of the world's student population and up to 99% in low and lower-middle-income countries (U.N., 2020b). The pandemic's foremost challenges include the unequal distribution of ICT infrastructure, quality of education, digital illiteracy, digital divide, technology cost, and obsolescence (Dhawan, 2020). So, the digital learning systems empowered by artificial intelligence can now observe how students learn or what kind of tasks and thinking interests them the most, and what kind of problems they find tedious or difficult. However, along with technology comes the question of access to it, where 43% (some 700 million students) have no internet access at home, and 56 million students live in locations that are not served by mobile networks (Janssen, 2020; Neil Selwyn, 2020, UNESCO, 2020).

Teachers with school-aged children reported having to juggle school teaching and homeschooling their children in addition to participating in other regular household routines (Beng et al., 2020). Innovation needs to be utilized accurately as a capable partner in making a difference to cut that regular burden (Genna, 2020). Online courses ordinarily require a principal sum of perusing and assignments than conventional classes. Programs in common are moving forward the quality of their online courses, which implies that students will need to demonstrate that they have acquired the skills to expand teaching-learning quality (Serin & Bozdog, 2020; Tom, 2017). Simultaneously, virtual supervision gives a reasonable elective for tending issues that frequently compromise adequate supervision. Their exercises include reviewing, checking, telling, rating and checking, and advancing these exercises. ICT can be an essential asset that serves to upgrade both these capacities and forms of school settings supervision (Cano & Garcia, 2013). Teacher rapport with students and their parents is built by establishing ground rules for behavior and being accountable for their actions, managing transitions during instructions, motivating students to

maximize time on task, and supervising students in their work. All of this helps students master these critical skills making them open-minded and creative (African Virtual University, 2020).

Method

The study followed a mixed method consisting of a convenience sampling technique conducted for the quantitative part of the research. The purposive method of identifying participants for online interviews was conducted with three professors, who were regularly engaged in online teaching-learning to gain in-depth knowledge under the qualitative method. The interview was taken through an online video call with the professors during the lockdown period. Two of the professors were from Kathmandu University, and one from Tribhuvan University was selected to fulfill the purpose of the study. A web-based self-administered questionnaire was designed in Google Forms by predetermined questionnaire bundle online and spread through social media to survey the teachers and students. Using an existing questionnaire, this one-time cross-sectional method was used to receive information regarding experiencing health problems during COVID-19 teaching (Dangal & Bajracharya, 2020).

The survey respondents were studying at the following affiliated college, Tribhuvan University, Kathmandu University, and Pokhara University located in the Kathmandu Valley and some from outside the valley. The targeted population of the study comprised only undergraduates and Graduate students. The respondents in the target population using a self-administered questionnaire through social media. Finally, 74 students' respondents and 27 Teacher's respondents that completed the questionnaires were included in the final analysis (100% response rate). Data were analyzed with SPSS Version 23 as well as google forms. The survey questions were mostly multiple-choice type questions with some Yes/No questions and few open-ended questions. The professors for the key informant's interview were from Kathmandu University and Tribhuvan University. Professor teaching online classes to only undergraduates and Graduate students were taken for the interview. Interview conservation was transcribed and reflected to bring out only specific issues to address the research objective.

Analysis of descriptive statistics was conducted to illustrate the demographic and other selected characteristics of the respondents. A non-parametric test was used to explore the significant associations between sample characteristics and the health problem level during the COVID-19 epidemic due to the data's non-normal distribution. A Chi square test for independence was used to evaluate the association between categories within gender, residence, university, education level, different age group versus the reported level of health problems. A two-tailed $p < .05$ was considered statistically significant (Cao et al., 2020). A comparative table of both student's and the teacher's perspective was analyzed to understand the problems and benefits of emergency

online classes. The participant's confidentiality was maintained, and no identity was revealed (Dangal & Bajracharya, 2020) during the web-based survey.

The survey is trying to find out the changes seen in the students and teachers, especially with concerned with health issues. What were the benefits and problems from online classes that both students and teachers were facing? This sudden change during the pandemic time from physically attending class habits to an entirely new online teaching and learning process. How much comfortable the students and the teachers were feeling? Moreover, what future do they see in online classes to make them more effective? A self-administered questionnaire was used for quantitative. Due to the pandemic time physically collecting the data, an alternative online interview and online survey were impossible.

Results

Health problem due to online class

Adaptation of online education during this pandemic situation for a developing country like Nepal is indeed a big challenge in itself. On top of that, most of the COVID-19 pandemic quarantine facilities in rural areas are created inside the school compound, which has added more time for students to get back to their school. Those schools having the right technical equipment and technical skills have immediately changed their teaching and learning pattern into online classes. However, the rest of the school without any technical equipment or skills remains closed. Unequal distribution of education plays a significant role in creating a big risk in online classes and the whole education system. All the students, including teachers attending online classes during the lockdown, were of Bachelor's and Master's level.

Different health problems with two less or two more problems from the list of back pain, neck pain, eye pain, headache, cannot sleep, and anxiety were taken from Table 1. Having two or more than two problem show more severity of problem due to online classes. As for the convenience of calculation, the health problems were grouped under two categories. Looking at all data of gender, residence, university, education level, and age, we can see that most of them face one health problem due to online classes that need to be looked into.

Demographic characteristics of the students and teachers attending online classes indicated an average age of 27.3 years among 101 respondents with a standard deviation of 0.501 years. The other demographic and selected characteristics of the study population are shown in Table 1. Among the sample of 101, there were 74 students and 26 teachers. Almost equal gender balance was present with 47% women and 53% men. 70% of the respondents were living inside Kathmandu, as 30% were outside Kathmandu. Maximum participation was from Tribhuvan

University with 57.4%, Kathmandu University 38.6%, and the remaining 4% from Pokhara University.

Table 1

Analytical table showing Health Problems due to online classes

Particular		Health Problems		Chi-Square	p-value
		Two or Less	More than Two		
Gender	Male	35	12	0.725	0.394
	Female	44	10		
Residence	Inside Kathmandu	52	19	3.477	0.062
	Outside Kathmandu	27	3		
University	Kathmandu University	30	9	8.047	0.045
	Pokhara University	2	0		
	Tribhuvan University	47	11		
Education Level	Bachelor Level	22	5	0.575	0.750
	Master Level	29	10		
Age	15-20	15	7	5.993	0.541
	20-25	25	9		
	25-30	18	4		
	30-35	7	0		
	35-40	6	1		
	40-45	3	0		
	45-50	3	0		
	50+	2	1		

Table 1 shows all socio-demographic characteristics such as gender, residence, University, Education level, and age. There is a significant association between the university of study and the onset of health problems ($p = 0.045$), which may be due to the number of classes per day or the duration of classes. Other variables such as residence show some association with increased health problems ($p = 0.062$). According to the results, variables such as age, gender, and education level did not associate with health problems. One of the professors from Kathmandu University reported having faced similar health problems (in the online interview) with eye pain and back pain due to long hours of online classes during this pandemic. Teaching the online class was becoming difficult for the professor.

Students and teachers comparative table on the perception of online classes.

The comparative table (Table 2) shows that both students and teachers have faced similar health situations due to the online classes that started quickly after the lockdown. Looking into teachers' and students' health, the most common seems to be eye pain and back pain, and headache. In comparison to teachers, a larger percentage of students are reported to have headaches and neck pain. In contrast, back pain and eye pain have created significant concern for a larger percentage of teachers, perhaps due to continuing long classes and sitting in the same position for a longer time. 27% of the students who participated in the study have some anxiety, and 13.5% reported that they could not sleep properly.

Regarding difficulty during the online classes, the perspectives of both students and teachers are very similar. 41.9% of the students included in the survey reported having difficulty with interaction and asking questions to the teachers, while 37.8% had difficulty giving online class presentations. A similar situation can be seen in the teachers' responses as well, where 55.6% felt difficulty in interacting with the students, 48.1% felt that they had problems gaining students' attention, and 44.4% had difficulty in online classes due to emerging technical difficulties. In the context of students' preference about their grades and examinations, 59.5% and 39.2% reported assignments and term paper/ presentation to be their preferred method for final exam evaluation, and only 24.3% preferred actual examinations (multiple responses). In teachers' case, 96.2% preferred assignments, 76.9% presentation, and 30.8% book reviews. Similar to the students, only 30.8% of the teachers preferred to take examinations.

Many students (41%) and teachers (37%) have felt that online classes are not practical enough compared to actual in-person classes. Less interaction seems to be a con of the online classes on both sides. 37% of the students reported their slow internet problem to be the worst part of online classes, whereas 26% of the teachers had no worst parts. On the brighter side, 54% of students reported that time-saving was a major pro of the online class, and 18% said good communication. Flexible class timing is reported to be the biggest pro of online classes, with 52%

reporting that this was the best part of shifting to the online modality, along with 15% of the teachers that reported working from home to be the best part.

Table 2

Students and teachers comparative table on the perception of online classes

Issue	Students	Teachers
Back Pain	35.1%	38.5%
Neck Pain	25.7%	19.2%
Eye Pain	55.4%	65.4%
Headache	39.2%	26.9%
Cannot sleep properly	13.5%	-
Anxiety	27%	-
Difficulty during online classes	Less interaction-41.9% Asking question- 41.9% Giving Presentation-37.8%	Less interaction-55.6% Students attention-48.1% Technology difficulty- 44.4%
Final exam preference	Assignments-59.5% Term paper/Presentation-39.2% Objective/ Subjective/ open book exam-24.3%	Assignments-96.2% Presentation-76.9% Test from an open book and objective questions-53.8% Book review-30.8%
The worst part of online classes	Not Effective- 41% Slow internet-37% Less interaction-12%	Not Effective-37% Less interaction-26% No-26%
The best part of online classes	Saves Time- 54% Communication- 18%	Flexible Time- 52% Work from home- 15%

Student's and Teacher's spending time in online classes

The total number of hours per day spent on online classes also matters a lot. Students have been reported to spend from 1 to 4 hours in front of a screen at a time, which is very long and may cause health-related problems increasing in the students. Teachers also reported similar timings where some teachers took 1-hour classes. In contrast, some reported taking a maximum of 4-hour class at a time, which might precursor the teachers' stress and health-related issues. In one online interview with a university professor, the individual clearly stated that due to long hours of taking online classes and staying in the same position for an extended amount of time, he experienced many health issues like back pain, neck pain, eye pain, and headache, along with other minor problems. Proper management of online class timing and at least 30 minutes of break is suggested between each online class.

Students not able to attend online classes due to technical problem

Technical problems such as power outages were a significant detractor for the online modality of teaching and learning. Approximately 90% of the total student respondents had faced this kind of problem. In most cases, the online classes were recorded to listen to the recording later, but its effectiveness is yet to be explored. In this context, one of the professors from Kathmandu University living outside of Kathmandu valley reported having difficulty ensuring students' participation in online classes, which has become an issue regarding online class attendance. One of the professors from Kathmandu University stated that "If only one student is left out during online class due to access to the internet or technical devices, the whole education system is a failure. Education is a component of human rights. Now looking at the aspect of students where everyone is given equal priority. If ten of the students have all the access, and only one student cannot access it, then it is the university's responsibility to bring that student into the mainstream. As students connected with the University, it plays a vital role in involving students in online classes. Even if one student who wants to learn cannot attend the class, we are a failure. If Nepal's total schools opened with one school not being able to due to quarantine, then the whole education is a failure.

Discussion

Online education has been a considerable shift in the learning and teaching process due to the sudden and unpredicted lockdown situation created by COVID-19. For Nepal, it is indeed a big challenge and an opportunity to expand education all over the country. According to data of 2075-76 from the National Planning Commission of Nepal, only 65% of the population have access to internet facilities. Still, 35% of the population has no access to the internet. One of the

basic requirements for online education in Nepal that still needs improvement is internet facilities and connectivity. Immediate shutdown and shifting from physical classes to online classes have brought lots of difficulties in the learning and teaching process. This survey indicates that 90% of the students have already been missing online classes due to internet problems or no electricity. The flow of the learning and teaching process has been disturbed.

Education systems across the globe have taken a range of alternative options during the lockdown guided, in part, by observing other countries' actions. Some of the internal resources used were instructional package (textbooks, worksheets, printouts), radio education, educational television, existing online instructional resources, online instruction delivered by the same teachers of the students learning, online instruction provided by private tutors, and other modalities (OECD, 2020). A few schools and governments have also provided computerized equipment to students in need (World Economic Forum, 2020). Therefore, the schools, physical classrooms, and mood of the students and the learning process have become more efficient (Tang, 2020).

As Piryani et al. (2020) posited, COVID-19 is expected to linger for some time with the potential to have lasting psychological effects on both students and teachers. A total of 27% of the students that responded to our study responded to have some anxiety. A study on the pandemic's impact on Nepal's college students suggested that 66.67% of students reported having increased anxiety levels (Dangal & Bajracharya, 2020). Online education in Nepal is a new way of teaching and learning that needs proper planning, which needs a different teaching modality compared to physical classes. A different approach is needed in making the students feel at ease and more comfortable to learn and reduce their anxiousness during this pandemic situation. Looking at the current situation of online classes in Nepal, radio and television course teaching and online classes are going on, which have been helping a lot to reduce the education gap. However, merely one-way interaction during these media broadcasting courses and online classes seems to be an issue, which hinders the effective learning process.

Conclusion

Various new platforms have emerged to help with social distancing and teaching-learning during the given pandemic emergency. This situation can also be taken as a lesson learned for preparedness for the future. It is apparent that further planning for a sustainable and equal educational opportunity for all is necessary. Interventions from universities and the Nepal government are needed for students who cannot attend their online classes. Those students must be identified and provided with necessary facilities like internet services as well as technical support. Full participation must be ensured in online classes, making sure that no one is left behind. Proper feedback mechanisms and health analysis must be conducted regularly from the concerned universities, and appropriate action must be taken accordingly to better the students' performance.

Taking every problem that arises due to COVID-19 as an opportunity to change towards a new learning and teaching way is the best way of educating oneself. Getting familiar with the technical devices with proper evaluation of online classes to overcome such health-related problems will change teachers' and students' perceptions of online classes. This might help them move towards more a safer and more comfortable online class. Remote teaching has become an essential part of our life after this pandemic, which has left us with much learning for any future situation or challenge that requires distant or online education. With the students' and teachers' health challenges and discomfort during the given pandemic, further research on providing quality online education without compromising their health is recommended.

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