ORIGINAL RESEARCH ARTICLE

UNIVERSITY STUDENT'S ATTITUDE TOWARDS VIRTUAL LEARNING DURING COVID-19 PANDEMIC IN NEPAL

Hari Prasad Upadhyay[1,*], Pallavi Koirala[2], Prativa Sedain[3]

[1]Department of Statistics, Birendra Multiple Campus, Bharatpur, Chitwan, Nepal
[2]Resident, Department of Community Medicine College of Medical Sciences,Bharatpur, Chitwan, Nepal
[3]Registered Nurse, Department of ENT BP Koirala Cancer Hospital, Bharatpur, Chitwan, Nepal

Correspondence to: Hari Pradad Upadhyay, Department of Statistics, Birendra Multiple Campus, Bharatpur-10, Chitwan, Nepal.
Email: hpchalise@gamil.com

Citation

ABSTRACT

Background: COVID-19 has put huge impact on our day to day life. Needless to say, the lockdown has hugely affected the education system as well. The purpose of this study was to assess students' perceptions and attitude toward virtual learning among undergraduate and graduate students of Nepal.

Methods: A web-based cross-sectional study using Google form was conducted among 438 undergraduate and postgraduate students of various universities of Nepal under various academic programs. A structured questionnaire consisting of 15 items (5-point Likert scale) was distributed to the students using Google Form. Data was collected from October 2020 to December 2020. Data was analyzed by using SPSS and analyzed using descriptive statistical tools.

Results: Among 438 students, more than half of the students had a positive attitude towards virtual learning. Most of the students used Zoom as a mode of application in virtual learning. More than one-third of the students found online classes effective only for theoretical subjects rather than numerical and practical subjects. More than 70% of students agreed that virtual learning could be taken as an alternative source for learning in the future. More than half of the students faced the problem of the internet during virtual learning.

Conclusions: The significance of virtual learning is rising as the academic year has been disrupted due to COVID-19. Although online learning is a new method of learning that is being adapted due to COVID-19, the satisfaction level of most of the students was found to be good. The students agreed on using the distance learning approach in the future to enhance their knowledge.

INTRODUCTION

Amidst the global wave of the pandemic, COVID-19 has put our day-to-day activities on hold. The lockdown has hugely affected every aspect of life including the education system. To overcome the repercussions, schools and colleges have started alternative methods of digital learning. According to Al-Hassan, "E-learning comes at the beginning of the transformation of how individuals learn and how they use learning in practice also with the accelerating pace of knowledge growth and change."[1] Some of the benefits of online learning are its effectiveness in educating students, professional development, cost effectiveness to combat the rising cost of postsecondary education, and the possibility of providing a world-class education to anyone with a broadband connection.[2]The Research Institute of America found that e-learning increases the retention rate of students up to 60% while the retention rate of face-to-face training is up to 10%. This is because, with e-Learning, students have more control over the learning process as well as the opportunity to revisit the training as needed.[3]

However, for a developing country like ours, the transition phase of virtual learning can still be a challenge. The rural areas of Nepal are still deprived of online education due to the lack of proper infrastructure facilities in many cities.[4]This study aimed to measure the student's perception and attitude towards the effectiveness of online learning in comparison to conventional learning.

METHODS

A descriptive cross-sectional study was conducted among 438 students (Bachelor of Business Studies (BBS), Bachelor of Science (BSc),Bachelor of Education (Bed), Master of Business Studies (MBS),Master of Arts (MA), Bachelor of Medicine, Bachelor of Surgery (MBBS), Bachelor of Dental Surgery (BDS), Bachelor in Nursing Science (BNS)of different universities of Nepal during the COVID-19 period. Most of the universities had commenced online classes during the study period. Before the main study to check the reliability and validity of the questionnaire, a pilot study was done among (10% of total sample size) students using Google form among students of Bachelor in Public Health (BPH) and Bachelor of Pharmacy (B. Pharm). Then using SPSS-20, Cronbach's alpha was calculated, its value was 0.703. Also, after the consultation with research experts, the questionnaire

was finalized. Then the well-structured questionnaire was distributed among students of different Universities of Nepal by using Google form. A study done by Sharma K showed that 53.5% students were satisfied towards the online learning.[11] By taking this as prevalence and with 5% level of significance (The z-score value at 95% Confidence interval is 1.96), with 5% margin of error. Sample size was determined by using the formula (n) $=Z^2pq/e^2$ = (1.96*1.96*0.535*0.465)/(0.05*0.05) =383. The minimum sample size for this study was 384 but this study was conducted among 438 students of different streams of all universities of Nepal. At the time of data collection, consent was attached along the online form. Those participants who did not sign online consent were not allowed to enter into the questionnaire. Ethical approval was taken from the Institutional Review Committee of College of Medical Sciences (COMSTHIRC/2020-043).In order to maintain the confidentiality of information, data was coded with serial number and raw information was used only for this research purpose. Data was collected from October 2020 to December 2020. Collected data was checked for completeness and coded. Data analysis was done using SPSS-16 software. Categorical variables were presented in the form of tables with frequency and percentage. For continuous variables, mean and SD was calculated after checking the normality of data. In order to find the overall level of attitude, mean score was calculated, score above mean value was taken as positive attitude and score below mean was taken as negative attitude.

RESULTS

The response of a total 438 students was collected. The Mean±SD of age was 21.99±2.95 years. A majority (65.2%) of the students were from age group of 20-25 years. 59% were female and 41% were male. A majority (93%) of the students were Hindu by religion and Nepali (72.2%) by Nationality. The maximum numbers of students (53.2%) were from Kathmandu University followed by Purbanchal University (20.5%) and Tribhuvan University (20.3%). Most of the students (41.3%) among the participants were from the Nursing group followed by MBBS/BDS group (34.7%).

Table 1: Sociodemographic characteristics of the students (n=438)

Characteristics	Frequency (%)
Age	
<20	154(35.2)
20-30	273(62.3)
>30	11(2.5)
Mean±SD	21.99±2.95
Gender	
Female	312(71.2)
Male	126(28.8)
University	
Kathmandu University	233(53.2)
Others	20(4.63)
Pokhara University	6(1.4)
Purbanchal University	90(20.5)
Tribhuvan University	89(20.3)
Faculty	

BBS/BSC/Bed	32(7.3)
MBBS/BDS	152(34.7)
Msc./MBS/MA/Med	32(7.3)
Nursing(BN/BSC)	181(41.3)
Others	36(8.2)

Regarding the user device for virtual learning, 56.2% used smart phones and 42% used laptops as the source of virtual learning. The application preferred for virtual learning was Zoom 96.1% and 82. 4% used Wi-Fi as the source of the internet and 16.9% of students used mobile data. Also, 87.4% had not taken any e-learning classes before. A majority (83.8%) of the students faced problems during virtual classes and 59.7% had the problem of unstable internet. Also, 81.1% found theoretical classes more efficient than virtual classes. Around 69.6% of students enjoyed virtual classes. More than 70% of students suggested the use of virtual classes in the future for learning purposes.

Table 2: Information regarding virtual learning (n=438)

Characteristics	Frequency (%)
Device used for virtual learning	
Laptop	184(42)
Tab	7(1.63)
Others	1(0.2)
Smartphone	246(56.2)
Application used for virtual learning	
Google classroom	12(2.7)
Microsoft team	1(0.2)
Others	4(0.9)
Zoom	421(96.1)
Source of Internet	
Mobile data	74(16.9)
Wi-Fi	361(82.4)
Others	3(0.7)
Have taken any e-learning before	
No	383(87.4)
Yes	55(12.6)
Have you faced any problems during virtual class	
No	71(16.2)
Yes	367(83.8)
If yes	
Difficulty in hearing	33(9)
Difficulty in understanding the content	51(13.9)
Problem of electricity	64(17.4)
Unstable internet	219(59.7)
Subjects do think more efficient for an online class	
Both subject	69(15.8)
Numerical subject (like Math)	14(3.2)
Theoretical subject	355(81.1)
Have you been enjoying the virtual (online) classes?	
No	133(30.4)
Yes	305(69.6)
In your opinion, can we use virtual classes in the future for learning purposes?	
No	127(29)
Yes	311(71)

Table 3: Attitude of the students on various domains (n=438)

Response	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Slow computer and poor internet connections make online learning inefficient	309(70.5)	116(26.5)	7(1.6)	4(0.9)	2(0.5)
Online learning is often avoided as it promotes social isolation.	54(12.3)	116(37.9)	139(31.7)	63(14.4)	16(3.7)
Online learning highly motivates the students for taking advanced courses or other online courses.	67(15.3)	238(54.3)	86(19.6)	42(9.6)	5(1.1)
Online learning makes learning enjoyable and interesting.	30(6.8)	149(34)	161(36.8)	88(20.1)	10(2.3)
I can ask subject-related questions to my teacher and receive a quick response quickly online.	44(10)	203(46.3)	115(26.3)	56(12.8)	20(4.6)
Online learning is easier and better than classroom learning.	15(3.4)	42(9.6)	106(24.2)	201(45.9)	74(16.9)
Online learning makes the students more accustomed (familiar) to technology.	95(21.7)	259(59.1)	59(13.5)	19(4.3)	6(1.4)
The usability and expertise in computers ensure the effectiveness of computer-mediated/online learning.	40(9.1)	227(51.8)	146(33.3)	22(5)	3(0.7)
Online learning ensures effectiveness in terms of coping up with missed lectures.	49(11.2)	215(49.1)	97(22.1)	72(16.4)	5(1.1)
The productivity of students can be enhanced through online learning to strengthen educational concepts.	26(5.9)	183(41.8)	145(33.1)	73(16.7)	11(2.5)
Online learning is economic in terms of time for students and teachers.	58(13.2)	225(51.4)	102(23.3)	40(9.1)	13(3)
Student-teacher interactions are weaker through online learning.	117(26.7)	196(44.7)	81(18.5)	40(9.1)	4(0.9)
There are more problems associated with virtual/online classes.	105(24)	232(53)	67(15.3)	25(5.7)	9(2.1)
Access to education increases through online learning.	32(7.3)	191(43.6)	127(29)	76(17.4)	12(2.7)
Online classes consume more time than the in-person classes/ (class room teaching)	47(10.7)	139(31.7)	97(22.1)	141(32.2)	14(3.2)

Regarding the various domains of the attitude of the students on various components, 70.5 % of students strongly agreed on the fact that slow computers and poor internet connections were the major hindrances in virtual classes and 37.9% of students agreed that online learning is avoided because it promotes social isolation. Also, 54.3% of students agreed on the fact that online learning highly motivates the students for taking advanced courses.

It was noted that 46.3 %(n=203) showed their agreement on receiving a quick response from teachers during virtual classes. Almost half of the students 45.9% (n=201)disagreed on the fact that online learning is easier and better than classroom learning.

A substantial portion of the respondents (59.1%) agreed that online learning made the students more accustomed to technology. This view was further reinforced by the fact that 51.8%(n= 227) agreed that the usability and expertise in computers ensure the effectiveness of computer-mediated/online learning.

Agreement upon the statement on the productivity of students can be enhanced through online learning to strengthen educational concepts was 41.8% (n=183)

Students (51.4%) agreed that online learning is economic in terms of time for students and teachers.On the contrary, 44.7%

(n= 196) agreed that students–teacher interactions are weaker through online learning.While, 32.2%(n=141)disagreed with the fact that online classes consumed more time than in-person classes (classroom teaching), 31.7%(n= 139) agreed with the statement.

Table 4: Overall level of Attitude towards the virtual learning (n=438)

Level of attitude	Frequency (%)
Positive	231 (52.7)
Negative	207 (47.3)

The overall attitude towards virtual learning was found to be positive in 52.7 % (n= 231) and negative in 47.3% (n=207).

DISCUSSION

COVID-19 brought changes in many aspects of life. It is evident that the pandemic has hugely disrupted the education system. Educational institutions worldwide experienced lockdown for a certain period due to which conventional way of teaching in the classroom has been digitalized today.

The findings in our study predict the acceptance of virtual learning 69.6% found virtual classes productive and 71% considered virtual learning as a better teaching tool and

preferred it for future learning.

A study conducted on university students showed 66%[5] used Smartphone for virtual learning which is similar to this study that shows 56.2% prefer Smartphone. Since learning can be done anywhere and at any time through Smartphone as they are portable, this could be the reason for using Smartphone as discussed in the article by Angela Murphy, et al.[6]

In our study, 84.7% have not taken virtual learning classes before the COVID-19 pandemic which correlates with the problem of the unstable internet as a major hindrance in virtual learning. Our study coincides with the study done in Polish medical students where 60% of students have not experienced virtual learning.[7] Also similar result is seen in a study done in Nepal among nursing students where 61.5% were anxious due to the internet/electricity problem.[8] As explained in a study done by Mohammed Amin Almaiah showed that technological factors played critical role in usage of e-learning system.[9]

According to our study, 41.8 % of students agreed on the fact that productivity of the students can be enhanced through online learning which is similar to a study done in Croatia where 65.5% had higher motivation with a longer duration of e-learning.[10] The possible reason may be students are getting more influenced by technology for their education.

A study done in private medical colleges showed that virtual learning is perceived to have little impact compared to face-to-face learning as indicated by 86% [11] of the students. But on the contrary, our study shows that 44.7% feel that student-teacher interaction is weaker through online learning. This may be due to a lack of an interactive approach while taking virtual classes. Social and collaborative learning techniques should be applied to enhance the interaction between the teachers and students.

In our study, 46.3% of students agreed on the fact that instant response from the teachers was the huge advantage of virtual learning. The efficiency and effectiveness in delivering the virtual learning-based components of a course is one of the most critical factors to students acceptance and success of the learning process.[12]

Majority of the students (51.8%) agreed on the usability and expertise in computer ensures the effectiveness in virtual learning. Evidence shows that the better quality of the internet, proper availability of technical assistance, and quality of online programs positively influence virtual learning.[13]

In our study, 41.8% of the students agreed the productivity of the students can be enhanced through online learning to strengthen educational concepts. The possible reason could be the availability of the internet to clear out any confusion on their own. Recent findings by Peine et al., also showed that online learning can outperform traditional learning.[14] Other studies have shown that online learning can promote collaborative, active, and lifelong learning, increase student's motivation, offer better access to information, and help students think and communicate creatively.[15] On the contrary, many studies conducted in Taiwan, Pakistan and India indicated that face-to-face learning was perceived to be more effective than online learning in terms of all social presence, social interactions and student satisfaction. [16,17,18] The reason may be due to the lack of practical lessons and skill attainment tasks which is not possible through virtual learning.

59.1% of the students agreed that online learning made them more accustomed to the technology. The use of easy access to the study materials through the internet may be a strong reason.

According to our study, student's attitude and acceptance towards virtual learning were positive and favorable. The overall attitude of students towards online learning was found to be positive in 52.7 % which depicts the possibility of continuing virtual learning in the future. Similar findings were found in the study done in undergraduate students in Indonesia where 44.2% preferred distance learning.[19] In another study done in Nepal, students had a favorable attitude towards online learning. [11] Whereas in a study conducted in India, only 30.8 % showed a positive attitude.[20]

With the shift of online learning, we can contemplate continuing this in the future by evaluating its opportunities and obstacles. Also evaluating the impact on the education of the students. Digital transformation consists of adequate strategic preparation, trust establishment, thinking in processes, amalgamation, and reinforcement of all parties involved, separate, collaborative, and organizational knowledge.[4]

CONCLUSION

With the unabated spread of COVID-19, academic activities seem thriving in the digital place. The paradigm shift in education from traditional to online is a huge threat. For the institutions to seamlessly operationalize the virtual classes, a collaborative approach is needed.[21] Institutional support and institutional strategy plays a vital role in implementing the core skills and adaptation of methodologies of virtual learning.[22] Educational administrators and policy makers should use this opportunity to develop human resources and introduce Information Technology(IT) education at all levels.[23] Ensuring an accessible digital transition across the country should take on heightened importance.

CONFLICT OF INTEREST: None

FINANCIAL DISCLOSURE: None

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