

## Original Article



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## E-Learning during Covid-19 Pandemic: Experience of Teachers And Students in a Medical Institute in Nepal

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### ABSTRACT

**Introduction:** Covid-19 has had a discernible effect on medical education globally. The higher education sector in Nepal was intensely affected by the pandemic. The necessity of educating medical students amidst Covid 19 was a challenge. The main challenges were safety issues against the highly contagious virus and adaptation to new innovative approaches to meet the education demands. Although worldwide e-learning had been well accepted and acclaimed, in Nepal it was not a popular method of teaching-learning until during the covid crisis when almost all of the medical institutions redesigned the pedagogy from physical didactic lectures to e-learning. This phase of crisis will have a long-lasting impact on medical education. Some students may experience drastic turning points in their career progression. This research paper aims to recognize the challenges of education, share the experiences of the teachers and students, and identify the advantages of e-learning in medical education during a crisis.

**Methods:** This is an Observational, qualitative, cross-sectional, descriptive, and analytical online survey done using google form at Kist medical college and hospital. The participants were undergraduate medical and dental students (Year I, year II, year III, and year IV) and faculty members.

**Results:** E-learning is a novel experience in Nepal, especially in the context of medical education. Only 15.2% of faculty had received formal training on conducting online classes and merely 12.1% of faculty had conducted online classes before the onset of the crisis. 70 % of the students already had exposure to the pedagogical method in comparison to only 42 percent of the faculties. A majority of faculties seemed to be unaware of this teaching-learning method.

**Conclusion:** E-learning cannot replace physical learning as it has its own limitations, however, there are certain advantages of e-learning like time-saving, addressing larger crowds over a wide range of geographical areas, during the situation like covid 19 due to safety issues. E-learning like any other pedagogical method has its norms and system, and requires adequate preparation and training, in regards to administrative, managerial, and technical beforehand to achieve adequate beneficial effects. e-learning encompasses a pedagogical approach that typically aspires to be flexible, engaging and learner-centred (one that encourages interaction )

**Keywords:** Covid-19; E-Learning; SARS COV-2 Medical education

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**INTRODUCTION**

The Covid 19 pandemic seeks for the safety of medical students and patients. Social distancing needed to be practised as an integral part of the prophylactic measures to limit the spread of the air-borne disease, which transformed the medical education from in-person to on-line. Amidst the uncertainty of the disease and the need to continue education, e learning was the only pedagogical method of choice during the pandemic. E-learning was not a popular method of teaching learning until the outset of covid pandemic in Nepal and many parts of the world. After the pandemic Nepalese medical education had the opportunity to explore the different aspects of the e learning. Many institutes researched and had innovative ideas on continuing online medical education. In contrary to the long held belief e-learning certainly proved beneficial. Not just in terms of conventional didactic type of teaching methods, e learning was implemented for various other purposes like webinars and assessments. As this method is still a novel idea for many teachers and students in Nepal, this study was done using the google form to gather experiences of the teachers and the students which can be used for improvement and development of e learning.

A 31-year-old student who had returned to Kathmandu, Nepal on 9 January 2020<sup>1</sup> from Wuhan, China was the first diagnosed case of Covid-19 in Nepal. Till 11 September 2021, Nepal had seen a total confirmed cases of 774,587 with 10,903 deaths.<sup>2</sup> A lockdown was implemented across the country starting on March 24 to stop physical classrooms affecting the entrance tests, admissions, teaching, learning and assessments.

The pandemic caused chaos everywhere in the education sector, one of the worst-hit areas of education being medical. Apprehension related to the abrupt transition of the predominant didactic lecture method of teaching-learning to e-learning activities was evident. The challenges to be faced, the efforts to be put, unlearning and learning to adapt to a new method of teaching-learning, and to identify advantages of e-learning over didactic lecture formed the broader idea of the shift to the novice method of teaching in medical education in Nepal. Deploying new technology introduced tensions however, education, not technology, was the prime goal. It required creativity and adaptability in response to the specific and changing contexts in which it was used.

The practicals and clinical rotations are the most affected areas but around the world, many works of literature have been published with many innovative ideas and remedies. Nepali medical institutions quickly initiated the online education to continue the educational activities to prevent the academic delay. Imparting medical education via e-learning was a novice idea until then for all the medical institutes in the country. E-learning in a developing country like Nepal has many hurdles and challenges to face e.g. IT infrastructure/Technical support, Faculty's familiarity with the method and their training, students' access to computer/internet, internet speed, etc<sup>3</sup>. Another difficulty was assessment and the need to develop a new curriculum that incorporated e learning as a component.

Medical education has not been able to adapt to a rapidly altering educational system demanding for the flexibility in terms of change and transformation.<sup>4</sup>The Covid-19 crisis has been a

motivation for overdue innovation in the field of medical education.<sup>2</sup>

Time and again infectious diseases have affected the education system as the 2003 SARS infection that affected medical schools in several parts of Asia. Similar situations in the future are inevitable. The experience learnt can be future guidance.<sup>5</sup> This study included the experiences of both the teachers and the students during the E learning.

## METHODS

This is an Observational, qualitative, cross-sectional, descriptive and analytical study done at KIST medical college and hospital. The participants were undergraduate medical and dental students (Year I, year II, year III and year IV) and the faculty members. Teaching learning activities were primarily done using the Zoom platform which provided with options like screen share, slide projection and white board. Each class was 45-60 minutes in duration. 10-15 minutes was allotted for discussion after every class. Random 80 MBBS and BDS students from the year I, II, III and IV participated. 28 basic sciences faculties also participated in the research study. Simple random sampling method was used for the purpose. Different sets of questionnaires were given to the faculties and the students. **Inclusion Criteria:** All the students studying in MBBS and BDS and the faculties giving consents to participate in the research study, categorised in two groups, students and faculties, who have been part of the e-learning during the Covid 19 pandemic. **Exclusion Criteria:** Any student/faculty who i) Has not been part of the e-learning ii) Did not give consent to participation iii) Wanted to withdraw their participation from the study.

Data collection was done using Questionnaires and survey was done with the aid of Google form. Microsoft excel was used as a data collection tool.

## RESULTS

15.2% faculty had received formal training on conducting online classes and merely 12.1% faculty had actually conducted online classes before the onset of crisis. 70 % of the students already had an exposure to the pedagogical

Table 1.

E-Learning exposure before covid 19 pandemic		
Faculties	Yes	42%
	No	58%
Students	Yes	70%
	No	30%

Table 2.

Disadvantages of E-learning as perceived by the faculties
1. Ineffective
2. Non interactive
3. Students easily distracted
4. Difficult to assess the attentiveness of the students

Table 3.

Online assessment methods as perceived effective by the students	
Methods	Percentage
Multiple choice questions	40.5%
Viva	29.1%
Short answer questions	22.8%
Others	7.6%

Table 4.

Online teaching method perceived effective by the students
Interactive classes
Adequate use of audio visual aids, illustrative power point slides, white board, animation etc
Breaks in between sessions

method in comparison to only 42 % of the faculties, signifying the increase in trend of e learning even before the onset of covid 19 pandemic.

Most of the faculties believed e learning to be lesser interactive and effective (table). In terms of practical/clinical classes and assessment the method was perceived by almost all the faculties as of not much use.

However, 75.8 % of faculties realized that the institutional faculty training should incorporate e-learning as an integral part. Students predominantly used laptop and mobile phone together comprising 97.5% and around 2.5 percent of them used tablet/ipad (Fig.) 91 percent students relied on wifi whereas remaining 9% used mobile data to attend the class. Internet cost ranged from 500 nrs to 1800 nrs per month with maximum ranging over 1000 to 1500 nrs per month. Students preferred time per session was minimum 30 minutes and maximum 60 minutes.

They had different preferred methods of teaching learning for online methods as illustrated in the the table below (table). Students thought that discussion amongst teachers and students made the online classes effective. A proper use of audiovisual aid, power points, white board were well sought after.

The cause of frequent interruption of online classes were mainly bad internet connection followed by electricity cut off. Most of the faculties 94% believed that online classes are lesser effective than physical classes, likewise 91% of them believed that it is lesser interactive and 94 percent believed that keeping track of students activity is difficult during e-learning.

## DISCUSSION

Covid-19, a pandemic is caused by a highly infectious virus with potentially deadly consequences that gave world a unique experience in terms of health, social, economical and educational aspects.<sup>6</sup> It presented practical and logistical challenges and concerns for patient safety, and can be source of infection spread

even during the asymptomatic period.<sup>7</sup> Worldwide many research articles are published those share the experiences of schools and students, problems and their mitigations <sup>8-11</sup> The Covid-19 pandemic has caused an abrupt change within the social and academic sector. Medical education worldwide has been tremendously affected.<sup>12</sup> Natural calamities and disasters were experienced in the past when medical education wasn't significantly impacted, of course during those situations medical students extended voluntary help. During this situation, taking classroom lectures may well be potentially fatal to both the schools and students. The didactic lectures had to get replaced by safer teaching-learning activities to keep up the social distance between the learner and educators. Alternative routes were wanted to continue medical education whilst at the identical time reducing the untoward effects of the virus during the method.<sup>13</sup> Globally, health care professionals were using e-learning. Worldwide studies were conducted to spot the effectiveness of e-learning. Some studies showed the benefits of e-learning over the standard method <sup>12, 14, 6</sup> Although, in our study faculties and students were not very happy with the e-learning, however, it maybe that the online method of teaching learning in terms of development is very much lagged behind, as shown by our study that more than 80 percent of faculties didn't have training on elearning pedagogy neither had any kind of experience or exposure. As correctly said by someone (anonymous) "eLearning doesn't just "happen"! It requires careful planning and implementation." Deploying new technologies usually introduces tensions. Amidst the difficulties to show and learn now, there are types of advanced technological solutions. An abrupt transition from the normal method to e-learning has some technical difficulties e.g. not all schools and students are tech-savvy or comfortable using the technology gadgets (Especially in developing nations). Many teachers in medical institutes in Nepal searched for training to control the e-learning activities.<sup>10</sup> Many are of the opinion that e-learning and assessment should be structured and designed in a way so on appear as similar as possible to face-to-face learning.<sup>15</sup> Online educational sessions are more flexible within the

context of your time and space. Technological solutions offer to show individual or group teaching and permit processing the individual student's responses in real-time. Zoom has been used widely as an internet meeting platform for education purposes offering the aforementioned advantages of web education over the traditional methods<sup>13</sup> likewise Zoom was the preferred online platform in our study. Online teaching sessions have some disadvantages, mainly related to technical issues e.g. they may be disrupted in areas with poor Wi-Fi or for college kids in countries with lesser internet facilities. Also, it has to offer training to the scholars and faculties who lack the knowledge to use it. Online classes may be a possible source of distraction for several students. Interaction amongst the participants might not be as interactive as during face-to-face sessions<sup>16</sup>. Similarly, the major problem encountered in our study was internet connection and electricity cut off. Shah et al. believed that in terms of greater flexibility, cost-effectiveness, time saving and flexibility, e-learning is superior to the standard method and allows conducting webinars and conferences with cosmopolitan participation<sup>17</sup> Wolanskyj-Spinner said 'In the context of patient- centred teaching, today's mandate to "flatten the curve" raises many questions which will reshape medical education(18). How can we train future doctors within the constraints of social distancing? Additionally, to web-based learning and digital content, can we simulate virtual patient encounters?' Similar concerns are also raised by Emanuel who advised that the update of medical education with the most effective use of obtainable technology through e-learning and modification of clinical training into competency- based models, instead of being time-consuming learning"<sup>18,19</sup>. The technological changes set by the COVID-19 pandemic have some beneficial changes in medical education and will be continued and preserved even after the crisis<sup>16</sup>. Pros and Cons of online learning.<sup>20</sup>

There are many varieties of literature from the various countries including from Nepal sharing their experiences during this pandemic. Questionnaires are going to be given to the teachers and also the students to record their experiences. Questionnaires regarding the assessment methods

online also will lean on the scholars and teachers. Was the assessment taken helped the scholars in learning activities? Questionnaires like what could be done to boost the teaching-learning and assessment methods during e-learning classes? The future of those online taught medical students is intriguing. Especially the ultimate year students who will graduate soon after a really minimum hands-on training and clinical exposure. A real-time experience of the students' posts COVID-19 is studied. Will or not it is justifiable to coach doctors with lesser hands-on training? Attempts also will be made to spot the longer-term role of e-learning in medical education in a very developing nation like Nepal after the pandemic.

<b>Advantages</b>
Economic Not space bound Easy accessibility Easy access to experts Global interaction possible Travel time saving

<b>Major Disadvantages and limitations of E learning</b>
Technical issues Easy distractions and lesser participation Lack of direct social interaction Difficulty in learning communication and interpersonal skills Difficulty in learning other skilled works Difficulty in taking practical classes Assessment difficulty

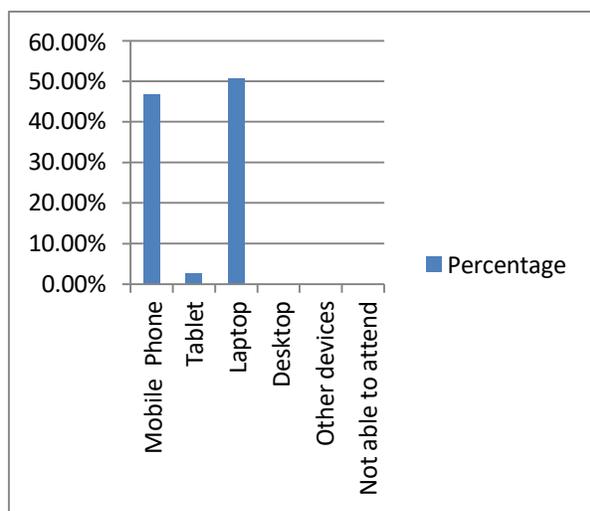


Figure showing percentage of E device used

## CONCLUSION

This study showed that everyone believed that e learning was the best substitute for physical classes during the pandemic. E-learning should be done in a systematic way with an adequate preparation. E-learning is here to stay and done in the right way has many future opportunities and possibilities to offer. The disadvantages and limitations of e learning should be tackled with newer ideas and brain storming.

## REFERENCES

1. Mansur DI, Kayastha SR, Makaju R, Dongol M. Problem based learning in medical education. Kathmandu University Medical Journal. 2012.
2. Nepal COVID: 774,587 Cases and 10,903 Deaths - Worldometer [Internet]. [cited 2021 Sep 10]. Available from: <https://www.worldometers.info/coronaviruses/country/nepal/>
3. Ansari M. COVID-19 Pandemic and an Urgent Need of Online Learning Approaches in Nepal and Other Developing Nations. Birat J

Heal Sci. 2020;5(1):877–8.

4. Irby DM, Cooke M, O'Brien BC. Calls for reform of medical education by the Carnegie Foundation for the Advancement of teaching: 1910 and 2010. *Acad Med.* 2010;85(2):220–7.
5. Lin RJ, Lee TH, Lye DCB. From SARS to COVID-19: the Singapore journey. *Med J Aust.* 2020;212(11):497-502.e1.
6. Rimal et al. Covid-19; Challenges and Opportunity in Nepal. 2020.5(1)11:879-880. Birat medical college and teaching hospital. BJHS
7. Rose, S. (2020) 'Medical Student Education in the Time of COVID-19', *JAMA - Journal of the American Medical Association*, 323(21), pp. 2131–2132. doi: 10.1001/jama.2020.5227.
8. Kirk LE, Mitchell I. The impact of the COVID-19 pandemic on medical education. *Medical Journal of Australia.* 2020Oct1;213(7). <https://doi.org/10.5694/mja2.50767>
9. Bhargava, S. (2020) 'Online Classes for Medical Students During COVID-19 Pandemic: Through the Eyes of the Teaching Faculty', *Journal of Research in Medical and Dental Science*, 8(4), pp. 189–192. Available at: [www.jrmds.in](http://www.jrmds.in)
10. Gupta, A. et al. (2020) 'Perception of BDS students of Kathmandu University on online learning during COVID-19 pandemic', *Orthodontic Journal of Nepal*, 10(2), pp. 20–28. doi: 10.3126/ojn.v10i2.31064.
11. Sharma, K. et al. (2020) 'Online learning in the face of COVID-19 pandemic: Assessment of students' satisfaction at Chitwan medical college of Nepal', *Kathmandu University Medical Journal*, 18(19 70COVID-Special Issue), pp. 38–45
12. Smith A, Bullock S. COVID-19: initial guidance for higher education providers on standards and quality. 2020. <https://www.qaa.ac.uk/docs/qaa/guidance/covid-19-initial-guidance-for-providers.pdf> (accessed 25 May 2020)
13. Singh, K. et al. (2020) 'Medical Education

- During the COVID-19 Pandemic: A Single Institution Experience', *Indian Pediatrics*, 57(7), pp. 678–679. doi: 10.1007/s13312-020-1899-2.
14. Patton , M.Q . (2002) . Qualitative Research and Evaluation Methods
  15. Ferrel, M. N. and Ryan, J. J. (2020) 'The Impact of COVID-19 on Medical Education', *Cureus*, 12(3), pp. 10–13. doi: 10.7759/cureus.7492.
  16. Hagler A. The Pros and Cons of Teaching with Zoom. 2019. <http://www.teachingushistory.co/2019/09/the-pros-and-cons-of-teaching-with-zoom.html>
  17. Shah S, Diwan S, Kohan L, Rosenblum D, Gharibo C, Soin A, et al. The technological impact of COVID-19 on the future of education and health care delivery. *Pain Physician*. 2020;23(4 Special Issue):S367–80.
  18. Wolanskyj-Spinner AP. COVID-19: the global disrupter of medical education. <https://www.ashclinicalnews.org/viewpoints/editors-corner/covid-19-global-disrupter-medical-education/> (accessed 25 May 2020)
  19. Emanuel EJ. The inevitable reimaging of medical education. *JAMA*. 2020;323(12):1127. <https://doi.org/10.1001/jama.2020.1227>
  20. Torda AJ, Velan G, Perkovic V. The impact of the COVID-19 pandemic on medical education. *Med J Aust*. 2020;213(7):334-334.e1.