



## Research article

## Education system of Nepal: impacts and future perspectives of COVID-19 pandemic



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## ABSTRACT

The academic sectors are badly affected by the COVID-19 pandemic globally. The studies regarding the implications of COVID-19 in education in Nepal were minimal, thus, this paper aims to highlight the impacts of the pandemic on the education sector of Nepal. It is revealed that the Nepalese academia has been facing problems due to lack of adequate and appropriate sustainable infrastructure for the online system, including skilled human resources. In addition, limited internet facilities in remote and rural areas were the other challenging tasks for virtual academic activities. Therefore, the concerned stakeholders should provide necessary services and appropriate strategies for virtual means of the education system to compensate the repercussion caused by the pandemic. This study could be helpful to identify the critical needs emerged due to the pandemic at present and in future and also contribute to adopt appropriate policy for the revival of educational institutions.

## 1. Introduction

The year 2020 was started with the terror of the COVID-19 and witnessed the indelible imprints of the pandemic on the global community (WHO, 2020). The global health emergency due to COVID-19 was declared by the World Health Organization (WHO) on 30<sup>th</sup> January 2020. Subsequently, it was declared a pandemic after more than 118,000 infected population by COVID-19 from 114 countries with 4,291 deaths up to 11<sup>th</sup> March 2020. Globally, up to 6<sup>th</sup> August 2021, there have been over 200 million confirmed cases, including the deaths over 42 million (WHO, 2021).

WHO recommended the countries across the world to take precautionary measures to break the transmission chain of the coronavirus (Barkur and Vibha Kamath, 2020). Among the different prevention strategies, the lockdown was considered as one of the best approaches for

interrupting transmission, which was widely adopted by the global community (Flaxman et al., 2020). Therefore, many of the countries in the world imposed lockdown throughout the national and regional levels. In the same line, the Government of Nepal (GoN) also announced the first lockdown on 24<sup>th</sup> March 2020 and continued for about six months (Basnet et al., 2021a, 2021b). Besides the lockdown, effective tracking, tracing, quarantine, social distancing, and hygienic behaviours of some countries such as China controlled the disease spread successfully (Basnet et al., 2021c). However, the lockdown has not been sufficient in many countries (Zhu et al., 2020).

The lockdown imposed noxious impacts affecting the psychosociological and livelihoods of people. On one side, the new cases of the virus around the globe are increasing and on the other side, the commencement of lockdown has affected a more significant number of sectors, including academia (Dawadi et al., 2020). Importantly, the

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academia victimized severely from the lockdowns owing to the COVID-19 pandemic. Most academic institutions such as schools, colleges, and universities remained closed during the lockdown period. Still, the academic activities have not been resumed fully as usual with face-to-face instructions.

The pandemic challenges in the education systems have been the greatest ever faced by the world community (Azzi-Huck and Shmis, 2020). According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the closures of academic institutions have impacted more than 1.5 billion students and youth across the globe directly/indirectly (UNESCO, 2020). The COVID-19 pandemic has changed the world, creating the need for new actions from society, including universities and academia (Alvarez-Risco et al., 2021). Cease of the physical presence of students and teachers in the classroom for teaching and learning have switched the academic institutions to online teaching and virtual education. The educational institutions faced an economic crisis due to less number enrollment of students, delay in fee collection, and the management of alternate methods for teaching and learning. The institutions tried to adopt the alternate methods for teaching and learning such as online or virtual methods which are not likely to provide the quality of education as delivered in the classroom (Panthee et al., 2020; Viner et al., 2020). Such challenges of the COVID-19 to the education sector especially in the developing countries like Nepal are the severer than the developed countries as the former countries have limited facilities of online systems (e.g., internet, devices, and skilled human resources) (Poudel and Subedi, 2020). In the case of Nepal, the academic institutions remained closed for a long time during the lockdown, and some of them started to manage alternate ways of teaching with the prolongation of lockdown. The government institutions were affected mainly in two ways: firstly, they were turned into quarantine stations, and secondly, there were limited facilities including internet access, computer devices, and a skilled workforce. After the lockdown, the government of Nepal has given authority to the local governments to decide on resuming the academic institutions as usual, and many of the institutions are partially or fully reopened, but the health experts have warned that this decision has increased the risk of the virus transmission (Poudel and Subedi, 2020).

The number of darks sides of the COVID-19 pandemic has given opportunities to the researchers to explore new avenues of cure and treatments and other several facts related to the disease. Many of the

researchers have engaged in analyzing the consequences of this pandemic, focusing on different sectors such as environment, agriculture, business, tourism, economy, and education, etc (Pant et al., 2021; Azzi-Huck and Shmis, 2020; Barkur and Vibha Kamath, 2020; Flaxman et al., 2020; IAU, 2020). Such analysis, findings, and recommendations have contributed to the nations making policies and strategies to combat future pandemics. However, it has been felt that the studies regarding the implications of COVID-19 in the education sector are minimal. In the context of Nepal, the publications related to the facts are almost naught. Thus, this paper aims to highlight the impacts of COVID-19 on the education sector of Nepal.

## 2. Methods

This study is based on both primary and secondary data. The electronic databases through Google Scholar, Science Direct, and published reports of national and international organizations were the secondary sources of information on COVID-19. A manual search was conducted to search related articles to gather relevant literature (Kapasias et al., 2020). A survey was also conducted by preparing a short questionnaire (open-ended) to collect primary data. The questionnaire was formatted to collect information on the impacts of COVID-19 in academic institutions. Altogether 35 academic institution heads [10 government schools, 10 private boarding schools, 5 Council for Technical Education and Vocational Training (CTEVT) institutions, 5 university constituent campuses, and 5 university-affiliated campuses] were requested to respond to the questionnaire. Authorities of the Federal GoN, Ministry of Education, Science and Technology, provincial and local governments, and universities were consulted as the key informants. The questionnaire was validated with the help of a review by two experts from medical sciences and two experts from the education sector in Nepal. In addition, before the review, the questionnaire was subjected to purposive sampling of 10 respondents from the Kathmandu valley for the pilot test.

## 3. Education system in Nepal

In Nepal, the school-level education comprises the primary level (1–8) and secondary level (9–12). There are a total of 35,055 schools in Nepal, of which 27,728 are public schools (community schools), 6,206 private schools, and 1,121 religious schools (Muslim religious schools,

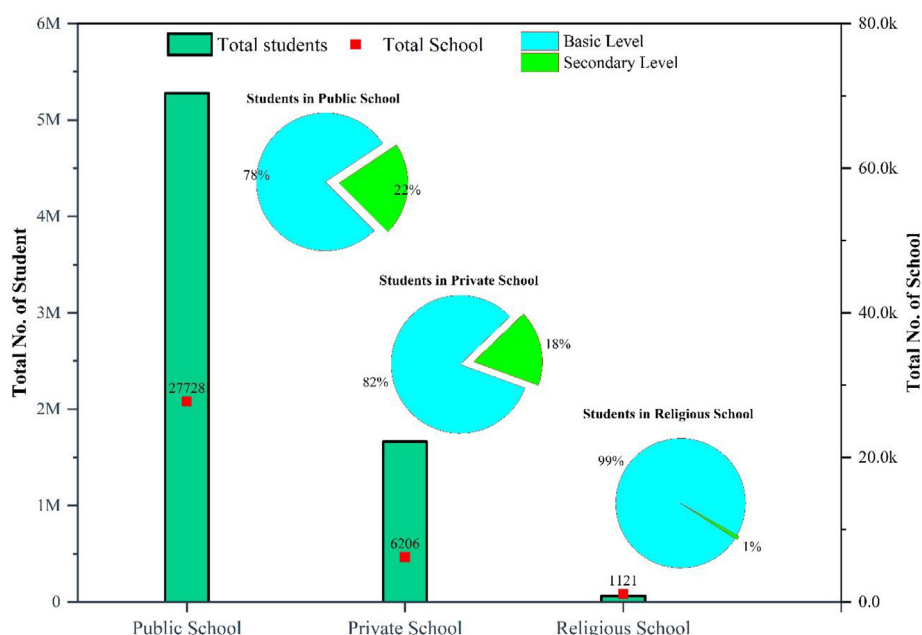


Figure 1. Students enrollment in public, private and religious schools in Nepal (DoE 2018).

Gumbas/Vihar, and Hindu Ashrams schools) (DoE 2018, Figure 1). Thus, there are 7,214,525 students enrolled in school level (grade 1–12) in the year 2018/19. Out of the total enrolment, 77% of students are at the primary level and 23% at the secondary level. Meanwhile, 4,124,478; 1,368,620; and 62,281 students were enrolled in public, private, and religious schools at the primary level, respectively. Similarly, 1,152,674; 294,732; and 610 students were enrolled in public, private, and religious schools at the secondary level, respectively (DoE 2018).

The education imparted after the secondary level is considered higher education (tertiary education) in Nepal. According to a report of the University Grants Commission (UGC), Nepal, there are 11 universities and six autonomous medical academies that offer higher education in Nepal (UGC, 2020, Table 1). Higher education is offered at the universities, of which the Tribhuvan University (TU) is the oldest and largest one. The universities in Nepal currently provide courses on sciences and technology; education; management; social sciences and humanities; law; engineering; forestry; medicine; agriculture and animal sciences; Ayurved; Sanskrit, etc. These academic programs run based on annual and semester systems at bachelor, master, MPhil, and PhD levels. Depending upon the nature of the courses, the time duration allocated to accomplish the programs varies with universities. For example, the bachelors, masters, MPhil, and PhD courses require 3–4, 2, 1.5, and 3 years, respectively, in most of the academic institutions in Nepal. The academic, research, and administrative activities are governed by the rules and regulations of the concerned institutions.

Under the umbrella of Higher education in Nepal, 1,425 campuses and 423,996 students enrolled in different academic programs (UGC, 2020). According to the office of planning directorate (TU), it has 1,124 campuses (62 constituents and 1,062 affiliated campuses). Open and distance learning programs have been adopted by the National Open University (NOU). The NOU programs are designed for e-based learning for interested students. The relevance and need for such open and distance learning programs markedly increased under the context of pandemic situations. Regarding the enrollment percentage, the TU has the highest i.e., 79.04 % while Pokhara University, Purbanchal University, and Kathmandu University have the enrollment 6.94 %, 6.16 %, and 4.23% students, respectively (UGC, 2020). Among the enrolled students, 78.6% and 21.4% were enrolled in general and technical programs, respectively. The students in management; education; and humanities and social sciences were 46.78%, 17.88%, and 13.20%, respectively. There are 7.11% of students in science and technology, and only 6.08%

and 6.55% of students are in medicine and engineering, respectively (Figure 2).

The provincial-level distribution of students in tertiary education revealed that >50% of students are concentrated in the Bagmati Province only while the least number of students (3.31%) are studying in the Karnali Province. The dominance order of number of students is Bagmati Province > Lumbini Province > Province no. 1 > Gandaki Province > Province no. 2 > Sudurpaschim Province > Province no. 1 > Karnali Province (Figure 3). The share of student enrollment in the community campuses is 30.29%, whereas constituent campuses and private campuses have received 32.41% and 37.30%, respectively (UGC, 2020). The data shows that private campuses have relatively higher number of students enrolled in Nepal.

Regarding the academic institutions' student evaluation and monitoring system, schools and universities have different provisions in Nepal. There is an annual examination system with midterm and internal evaluations for the basic level students under the direct supervision of respective schools and local governments. Furthermore, students are evaluated by annual examinations for the school level, including internal and midterm evaluations by the respective schools and the local government. However, the final examination of grade XII is provisioned to be examined by the National Education Board (NEB). In tertiary education, both the internal evaluations and final examinations are held at the end of each semester or year. Tribhuvan University has reintroduced the semester systems from 2012 onwards, and students are evaluated internally (40%) by the respective campuses/departments and externally (60%) by the concerned office of the dean under the Office of the Controller of the Examinations (TU, 2012). The Council for Technical Education and Vocational Training (CTEVT) has adopted semester systems from the beginning of all programs (DoE, 2018). Notably, most of the school and tertiary level examinations are held in a conventional system with physical presence and there was no application of virtual means of teaching and learning.

#### 4. Appraisal of COVID-19 impacts in Nepalese education system

Regarding the recent gloom and doom scenario created by the COVID-19 pandemic in academia, many countries have tried to adopt various virtual media for learning and teaching activities. The COVID-19 lockdown was implemented at the end of the academic session (March, 2020), which directly hindered both school and university academic

**Table 1.** Status of students and Universities in Nepal (2017) (UGC, 2020).

SN	University	Establishment	Number of campuses/colleges	Current students	Website
1	Tribhuvan University (TU)	1959	1140	335,126	<a href="http://www.tu.edu.np">www.tu.edu.np</a>
2	Nepal Sanskrit University (NSU)	1986	18	3,742	<a href="http://www.nsu.edu.np">www.nsu.edu.np</a>
3	Kathmandu University (KU)	1991	23	17,942	<a href="https://www.ku.edu.np/">https://www.ku.edu.np/</a>
4	Pokhara University (PokU)	1995	131	26,128	<a href="http://www.pu.edu.np/">http://www.pu.edu.np/</a>
5	Purbanchal University (PU)	1997	62	29,419	<a href="http://www.purbuniv.edu.np/">http://www.purbuniv.edu.np/</a>
6	Lumbini Buddha University (LBU)	2005	6	705	<a href="https://www.lbu.edu.np/">https://www.lbu.edu.np/</a>
7	Agriculture and Forestry University (AFU)	2010	8	1,978	<a href="https://www.afu.edu.np/">https://www.afu.edu.np/</a>
8	Midwestern University (MWU)	2010	16	3,224	<a href="http://www.mwu.edu.np">www.mwu.edu.np</a>
9	Far Western University (FWU)	2010	15	3,686	<a href="http://www.fwu.edu.np">http://www.fwu.edu.np</a>
10	BP Koirala Institute of Health Sciences (BPKIHS)	1993	1	361	<a href="http://www.bpkihis.edu/">http://www.bpkihis.edu/</a>
11	National Academy of Medical Sciences (NAMS)	2002	1	441	<a href="https://nams.org.np/">https://nams.org.np/</a>
12	Patan Academy of Health Sciences (PAHS)	2009	1	540	<a href="https://www.pahs.edu.np/">https://www.pahs.edu.np/</a>
13	Karnali Academy of Health Sciences (KAHS)	2011	1	30	<a href="http://www.kahs.edu.np">http://www.kahs.edu.np</a>
14	National Open University (NOU)	2016	1	593	<a href="http://www.nou.edu.np">www.nou.edu.np</a>
15	Rajshi Janak University (RJU)	2017	1	81	<a href="http://www.rju.edu.np">www.rju.edu.np</a>
16	Rapti Academy of Health Sciences (RAHS)	2017	-	-	<a href="http://www.rahs.edu.np/">http://www.rahs.edu.np/</a>
17	Pokhara Academy of Health Sciences (PokAHS)	2015	-	-	<a href="https://pahs.gov.np/">https://pahs.gov.np/</a>
	<b>Total</b>		<b>1,425</b>	<b>423,996</b>	

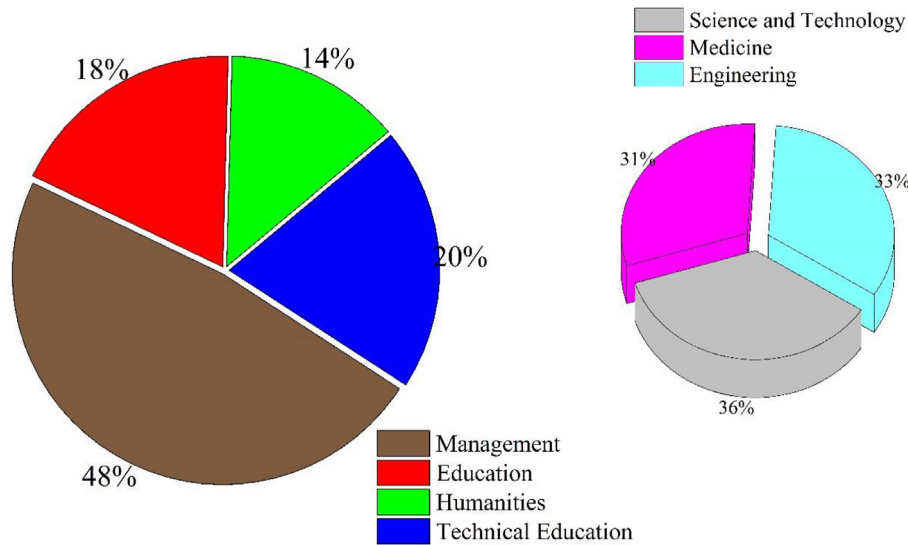


Figure 2. Current scenario of students distributions in different faculties at higher education level (UGC, 2020).

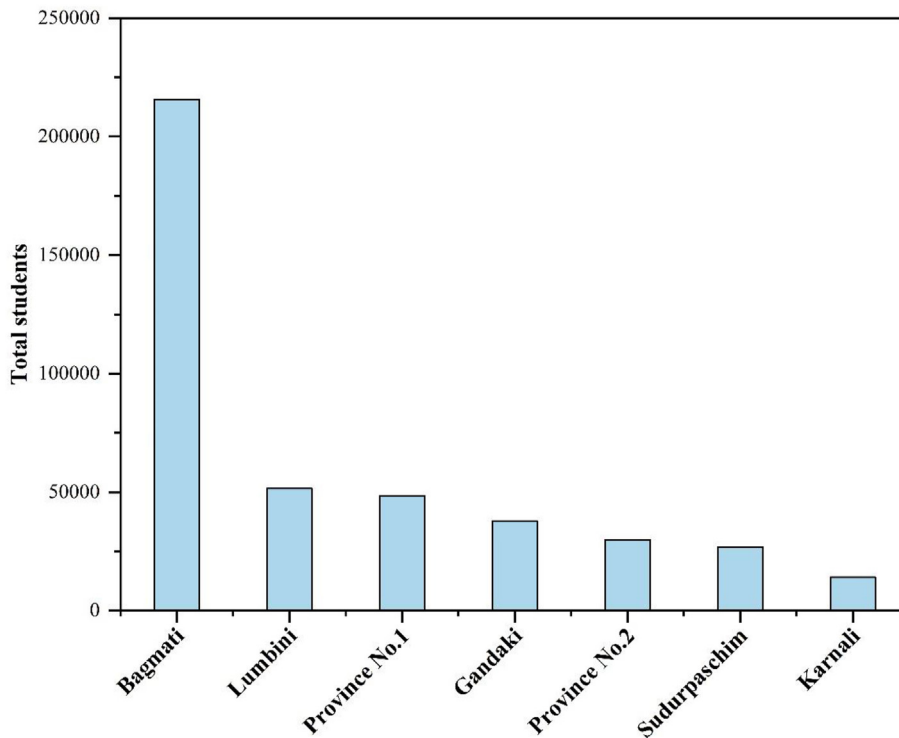


Figure 3. Provincial status of students at higher education level (UGC, 2020).

calendars in Nepal. The nationwide lockdown immediately impacted the pre-scheduled examinations of the grade 10 to 12. In addition, the scheduled semester examinations of many universities had been postponed. As the lockdown prolonged, almost all the academic activities, including examinations halted. It has directly affected the teaching-learning activities of nearly 8,796,624 students belonging to pre-primary (11%), primary (28%), secondary (39%), and tertiary (5%) levels nationwide, as estimated by UNESCO (Dawadi et al., 2020). The questionnaire survey and key informant interviews in this study have highlighted the several aspects of impacts of COVID-19 lockdown on academia in Nepal.

The impacts of COVID-19 on academia has directly affected the students, teachers, and parents. The challenges and impacts of the pandemic highlighted by the respondents were cancellation of board exams,

irregularity in learning and skills development, assessments, restriction to study abroad, disrupted the enrollment cycle, inequality in access to education, anxiety to start schools and universities, etc. In higher education, laboratory-based research and field works are greatly hindered. In addition, there may also be decreased funding to continue or undertake new research and innovative activities in the universities in Nepal (Michael and Murphy, 2020).

The lockdown has reduced the enrollment of students and increased the risk of dropout rate. In addition, it has created the obligation for the academic institutions to switch on the virtual media to maintain the pre-announced academic calendars. A transition phase of the traditional-educational system to the digital system appeared and the Nepalese academia started partially or fully digital system with prolongation of the lockdown. The academic institutions became engaged on

transformations in policy formulation, infrastructure development, searching appropriate online methods of teaching, and conducting assessments. As there was a lack of proper planning and educational guidelines previously for online teaching and learning, most of the universities and schools could not run any online models of pedagogical approaches in the initial phase (MWU, 2020).

A handful number of colleges and schools launched online classes in urban areas. **The majority of the respondents highlighted that comparing to the physical classes, the online methods are relatively less effective due to more absenteeism and irregularities of the students.** It has been estimated that only 9% of the total students from Nepal are getting online classes, and >90% of the students from rural and urban areas are still out of such virtual courses. Currently, 12% of schools and 56% of households have internet facilities, while 51% of students are using media such as radio and TV (Dawadi et al., 2020). It shows that the remaining 44% of students are unlikely to regularly access online or other media, which could be one of the serious concerns for the policymakers of the academic sectors (Marahatta et al., 2020).

Meanwhile, the greatly impacted sector by the COVID-19 pandemic is the research activities in higher education, according to the respondents. The research activities such as field researches had been postponed, and the laboratory research activities remained suspended by the universities. According to the informants, the numbers of chemical reagents and enzymes prepared for upcoming experiments basically in the laboratory based research were worthless due to the closer of the laboratories for an extended period. Master and PhD level dissertations were delayed, and the time-bound research grants and scholarships were cancelled. In such a situation, academia and the policymakers were in dilemmas to design a clear roadmap about the commencement of academic activities. Limited internet facilities, computer devices, and lack of skilled human resources hindered running virtual classes and other activities. It was a challenging to connect the students from the rural and remote areas of Nepal in the online classes. The virtual courses are even more challenging for those learners who are differently able students which is consistent around the globe (Manzoor, 2020; Chalise and Dhungana, 2020). Notably, the closures of academic institutions have resulted in multi-faceted implications such as disrupting completion of the syllabus on time, the regular cycle of academic intakes, semester end examinations required for graduation.

Despite the pandemic situation, there were some positive impacts on academia at the same time. It had allowed reshaping the of pedagogical strategies and adapt to innovative e-learning techniques. Schools and universities decided to introduce a digital education system. Several platforms, such as Zoom, Google Meet, Microsoft Teams, and Social Media including Viber, WhatsApp, Facebook, were given priority by the academia to run the academic activities online. For instance, with the help of Microsoft Teams, TU initiated its virtual academic activities with 500,000 users (teachers and students) (TU, 2020). In the history of Nepalese academia, this was one of the most outstanding achievements for the paradigm shift of the conventional pedagogical approaches. The learners and education provider institutions used media such as television, radio networks, YouTube, and other social media. Interestingly, the literacy and expertise on computers, apps, and virtual platforms have improved at the grass-root level. The universities conducted training for teachers and students for the online system of joining in academic activities.

The schools and higher education institutions expanded ICT infrastructures to support ICT associated teaching/learning. Most of the institutions have also prepared their guideline for facilitating online classes and assessment systems under the direction of the GoN and the University Grants Commission (UGC). Academic institutions have also initiated collaborations with local to national media such as Radios, FMs, and TVs. The virtual media have significant positive impacts on providing educational content and lives call with teachers in support of students (Hiltz and Wellman, 1997). As the cases of COVID-19 are still increasing globally, the public policies significantly, the academic policies should be revised and strictly follow with the epidemiological alerts

(Yáñez et al., 2020). Precisely, the COVID-19 situation compelled all the academic institutions and stakeholders for redesigning and reconsidering their teaching-learning and research approaches.

## 5. Future perspectives and conclusion

The schools and HEIs in Nepal have limited digital services, including electronic libraries, relevant online scientific publications, and other resources. The major challenge for the institutions was conducting assessments and exams online. In the context of Nepal, many children from low-income families and disadvantaged groups do not afford even the necessities of learning, such as textbooks, notebooks, and other required stationaries. Modern digital devices, including smartphones, iPad, iPods, laptops, computers, the internet, etc., are far from their expectations (UNESCO and IESALC, 2020). On the other side, the people in the remote and rural areas are deprived of online access due to limited internet facilities. In this context, providing equal opportunity for virtual learning to all groups of people and all parts of the country has become challenging. Therefore, the federal, provincial, and local governments are urged to switch their strategies and programs towards modern virtual education systems. For this purpose, different programs for enhancing the capacities of human resources, students, institution authorities, management, and parents are recommended. It is essential to understand the behaviour of learners about online and face-to-face academic activities to ensure the best academic outcomes (Alvarez-Risco et al., 2020b).

Due to the lack of adequate and appropriate sustainable infrastructure in Nepalese academia for the online system, developing such infrastructure is indispensable. The infrastructures for virtual education (internet facilities and digital devices) should be affordable to institutions of remote and rural areas. Especially the poor and disadvantaged groups should be prioritized, clustered, and trained in low/no cost by the government. The international and national organizations and university graduates could be mobilized as volunteers to teach in rural areas. The school education boards and universities should prioritize to revise their curricula including internship or community services for their students to share the knowledge and expertise to the needy people in rural and remote areas in Nepal. The institutions should consider adjustments in terms of accessibility, infrastructure, and equipment from a long term perspective.

Additionally, within traditional pedagogical approaches, the blended modes of education system could be implemented to improve the quality of education at an affordable cost with limited trained human resources. **The activities such as homework assignments, open-book exams, home take exams, quizzes, or small projects can be considered as the options of conventional paper-based examinations.** Moreover, some modes of communication such as chat channels and discussion groups in social media could also benefit to the learners. There is limited preparedness to cope with such pandemic in Nepal, thus, there must be cooperation and coordination among the different sectors to combat the impacts of COVID-19. There could be a multifactorial fight during the pandemic to increase health literacy, develop better detection tools, and enable action by local, provincial and federal governments (Alvarez-Risco et al., 2020c). Continuous awareness and sensitization about the risks of COVID-19 also play a vital role to reduce the havoc created by the pandemic (Quispe-Cañari et al., 2021).

Overall, this study comprises the education system in Nepal and COVID-19 imprints in the school and university education in Nepal. Also, we have tried to highlight the pros and cons of the pandemic on academia during the lockdown and suggested the possible way forwards. In this context, the concerned stakeholders should provide necessary services and develop appropriate strategies for virtual means of the education system to compensate for the repercussion caused by COVID-19 lockdown. Sustainable solutions are essential to manage the crisis and build a resilient education system in the long run. Thus, the insights from this study could be helpful to cope with the problem due to the pandemic and contribute to adopting an appropriate policy for

the revival of educational institutions. Also, the present work contributes to the necessary way forward to tackle the crisis in academia in Nepal in the future.

## Declarations

### Author contribution statement

All authors listed have significantly contributed to the development and the writing of this article.

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### Data availability statement

All data are available described in the article.

### Declaration of interests statement

The authors declare no conflict of interest.

### Additional information

Not applicable.

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