

Impact of the COVID-19 Pandemic on the Academic Performance of Undergraduate Students at Pokhara University

Ajay Thapa

Faculty of Humanities and Social Sciences, Pokhara University
azaythapa@gmail.com

Abstract: The disruption in the lives of students around the globe due to the COVID-19 pandemic has been considered the largest disruption in the history of formal education. Schools and Universities were closed for several months almost everywhere around the globe. The students of Nepalese universities were also affected by this pandemic. In this context, using the data enumerated from 89 undergraduate students studying at undergraduate programs in the School of Development and Social Engineering, Pokhara University by means of an online survey, this study has explored the means of accessing online classes and assessed the impact of the COVID-19 pandemic on the academic performance of undergraduate students. This study revealed that the Zoom platform, smartphones and tablets, Wi-Fi, and electricity were the major means to attend online classes. Despite many negative effects of the pandemic on different aspects of life, the COVID-19 pandemic has had a positive impact on their academic performance. However, the study did not find significant gender and rural-urban differences in the impact of the pandemic on the academic performance of students.

Keywords: Academic performance, COVID-19 pandemic, Impact, Undergraduate students

Introduction

COVID-19 was first detected in Wuhan, which is the capital city of the Hubei Province of China. The case was reported by the World Health Organization (WHO) on December 31, 2019 (Nguyen et al., 2020; USCC, 2020). It was a new virus related to severe acute respiratory syndrome (SARS) and some types of the common cold. Like the flu (influenza) or the common cold, it also showed similar symptoms such as fever, cough, and shortness of breath. It was transmitted through direct contact with respirational droplets generated through coughing and sneezing by an infected person or by touching contaminated surfaces and touching the face (WHO, 2020).

COVID-19 spread to over 210 countries and territories across the globe and was considered a global pandemic. Over 6.9 million people died due to COVID-19 (WHO, 2023). The pandemic has affected children, women, youth, migrant workers, and many employees around the world. Nepal is one of the countries that has been affected by this pandemic in various ways (UNDESA, 2020). On March 1, 2020, the Government of Nepal (GoN) formed a high-level coordination committee for the prevention and control of COVID-19 in the country. To battle the spread of the pandemic, the Government of Nepal (GoN), besides several efforts for the prevention and control of COVID-19 in Nepal, urged different models of lockdown

in the country from March 24, 2020, which severely affected the lives of everyone in the country (GoN, 2020).

The COVID-19 pandemic had upsetting effects on economic, social, cultural, and psychological impacts on individuals, households, communities, nations, regions, and the whole world. Furthermore, the COVID-19 pandemic had distinctive impacts on academic sectors. The lives of more than 90% of global students were disrupted due to this pandemic, which was considered the largest disruption in the history of formal education (Farid, Hayes, Sirkhell, 2021). Almost all schools around the world were closed. According to the UN (2020), more than 1.52 billion children and youth were out of schools or universities due to their closure. In some of the developed countries where both teachers and students had access to the technologies of remote learning, schools had started providing remote learning facilities for their students. But, a large majority of students around the globe did not have access to remote learning technologies. They were at risk of anxiety and mental health problems. The United Nations Department of Economic and Social Affairs (UNDESA) also pointed out that remote learning was less effective and that the facility of remote learning was not accessible to all students around the globe (cited in UN, 2020:12). About 60.2 million teachers were no longer in the classroom (UN, 2020).

In the context of Nepal too, the pandemic had serious impacts on the academic sector. The pandemic had impacts on students' learning, skills development and academic performance. Dawadi, Giri and Simkhada (2020) argued that due to various factors affecting students' equitable access to quality education, their learning has been seriously affected, consequently resulting in widening gaps between advantaged and disadvantaged students. The pandemic

might have also negatively affected females in comparison to their male counterparts (Farid, Hayes, & Sirkhell, 2021). Schools and universities made efforts to adapt to the changing environment of teaching and learning. Most universities and colleges/schools conduct online classes through virtual platforms such as MS Teams, Zoom, Google Classroom, and so on. The lack of access to technologies like laptops, tablets, smartphones, high-speed internet service and stable supply of power, and the lack of logistical experiences and knowledge of teachers and students to conduct or attend online classes (Sigdel, Ozaki, Dhakal, Pradhan, & Tanimoto, 2021) affected students' studies and their academic performance.

The School of Development and Social Engineering is one of the constituent schools of Pokhara University where over 268 students were studying at different undergraduate and postgraduate programmes during the pandemic period. The university adopted an online teaching-learning policy to continue the academic calendar. Online teaching-learning was a new approach for the school as well as faculty members and students. The school was not resourceful enough to implement the online classes effectively. The faculty members themselves were learning to use online platforms such as Zoom, MS Teams and Google Classrooms to take online classes. Both faculty members and students were facing the problem of slow internet speed and unstable power supply to take online classes. They were not having an appropriate environment to take classes from home as well. All these kinds of limitations might have affected student's academic performance. In this context, this study aimed to assess the impacts of the COVID-19 pandemic on the academic performance of undergraduate students studying at the School of Development and

Social Engineering, Pokhara University.

Data and Methods

The data were enumerated from the undergraduate students studying at the School of Development and Social Engineering, which is a constituent school under the Faculty of Humanities and Social Sciences, Pokhara University. The school is situated in Pokhara Metropolitan-30, Kaski, Nepal. There were over 268 students studying in different programs at the school (PU, 2020). In Nepal, the number of students enrolled in humanities and social science programs has decreased over time. The nature of students enrolled in these programs is generally different from that of students enrolled in science, technology, and health science programs, thereby having different impacts on the students enrolled in humanities and social science programs. Therefore, the students studying in the humanities and social science programs at the School of Development and Social Engineering, Pokhara University were selected for this study.

This study adopted a descriptive as well as a mixed-methods research design. In order to collect data and information required for this study, an online survey form was sent to all the undergraduate students at the School of Development and Social Engineering at Pokhara University through their messenger groups. Students voluntarily participated in the survey. Those students who did not wish to participate in the survey might not have responded to the survey.

The reliability and validity of the tools used in collecting data were assessed through different techniques. The survey questionnaire was designed based on the literature and the context of the study. Contextual variations were considered while using the appropriate language in the survey questionnaire. The purpose

of the survey was communicated to the respondents. A written request and consent mail, along with the webpage link to enter into the online survey form, were sent to all the students. Students voluntarily participated in the survey. The respondents were assured that their data would be used only for the research and that their identities would be kept private. A pretest of the survey questionnaire was conducted, and the questionnaire was revised as required.

The data were analyzed based on the objectives of the study. The distributions of categorical variables such as gender, caste or ethnicity, level of education, teaching-learning system, and technologies used in online classes were analyzed using frequency and percentage tables. Descriptive statistics were produced to examine the distribution of quantitative variables such as age, measures of academic performance, and so on. A paired sample t-test was run to examine the difference in the impacts of the COVID-19 pandemic on the academic performance of students. Fisher's exact tests were run to examine the association between gender and the impact of the COVID-19 pandemic on the academic performance of students.

Results and Discussions

Demographic profile of the respondents

The demographic profile covers respondents' gender, caste or ethnicity, place of residence, programs, and age. Of the total respondents, over two-thirds of them were female (68.5%). More than two-thirds of them were *Brahmin/Chhetri* (70.8%), followed by *Adivasi/Janajati* (29.2%). None of the students who belong to *Dalits* and other castes or ethnic groups participated in the survey. A great majority of the students lived in urban areas (83.1%), compared to less than one-fifth (16.9%) in rural areas. Over two-thirds of the respondents were studying in the Bachelor

of Development Studies (BDEVS) program, and the remaining were studying in the

Table 1
Demographic profile of the respondents

Demographic Characteristics	Number	Percent
Sex		
Female	61	68.5
Male	28	31.5
Total	89	100.0
Caste/Ethnicity		
<i>Brahmin/Chhetri</i>	63	70.8
<i>Adibasi/Janajati</i>	26	29.2
Total	89	100.0
Place of residence		
Urban	74	83.1
Rural	15	16.9
Total	89	100.0
Program		
Bachelor of Development Studies (BDEVS)	61	68.5
Bachelor of English and Communication Studies (BECS)	28	31.5
Total	89	100.0
Age		

Descriptive Statistics: N=69; Minimum: 19; Maximum:25; Mean: 21.59; SD: 1.276

Source: Online Survey 2021

Bachelor of English and Communication Studies (BECS) program. The minimum age of the respondents was 19 years, and the maximum age of the students was 25 years, with an average age of 21.59 years (Table 1).

Means of Access to Online Classes During the COVID-19 Pandemic

The means of accessing online classes during the COVID-19 pandemic might have affected the environment for online classes, thereby affecting the academic performance of students. In this study, the online platforms, main devices used for online classes, internet access, and power systems have been considered the main means of accessing online classes. The

means of student access to online classes are discussed below.

Online platform for teaching and learning: During COVID-19, the university decided to adopt online platforms for teaching. Zoom, Microsoft Teams, and Google Classrooms were some of the online platforms used in teaching and learning at the university. Among these platforms, all the students were taught with Zoom (100%) (Table 2). Despite having other alternative platforms for virtual classes, such as Microsoft Teams and Google Classrooms, the Zoom platform might have been chosen by the faculty members for online classes due to its ease of handling the classes and the fact that it was also available free on the

internet. The students used the platform that was chosen by their faculty members.

Main devices for online classes: The use of devices in online classes indicates students' access to technologies. A large majority of the students (71.9%) used smartphones or tablets/iPads to attend online classes, while about one-fourth of them (28.1%) used desktop computers and laptops for the same (Table 2). Smartphones were quite commonly used by undergraduate students. The virtual platforms were supported on these smartphones as well. The COVID-19 pandemic suddenly shut down the universities. On the one hand, the desktop computers and laptops are generally costly, and on the other hand they were also not available since the market was closed. The outside mobility of the general population was strictly restricted by the government. Therefore, the large majority students might have managed it with smartphones, though attending online classes using laptops would be more comfortable.

Internet access to attend online classes: Internet access is necessary to attend online classes. The means of accessing the internet indicates the convenience of studying online classes. During COVID-19, a great majority of the students accessed the internet through Wi-Fi (wireless fidelity) (92.1%), followed by accessing the internet through mobile data (7.9%) (Table 2). Nowadays, the urban population has good access to Wi-Fi for the Internet. Wi-Fi installed at home provides generally better access to the internet and could be used by multiple users, thus being used by a great majority of students for online classes. However, a few students also used mobile data. The students in rural areas and those who did not have Wi-Fi facilities at their homes before the COVID-19 pandemic, or even those who had Wi-Fi facilities at home but the internet service was poor, might have used mobile data for online classes. Furthermore, the

mobile phone service providers were also providing different special packages for students to attend online classes during the COVID-19 pandemic in Nepal, which might have motivated them to use mobile data. However, many students reported that there were problems with the internet connection and its speed, resulting in low voice clarity, so lecturers were not very audible.

Power system at home to attend online classes: Power outages have been a common phenomenon in Nepal. The devices used for online classes, such as desktop computers, laptops, smartphones, tablets, iPads, Wi-Fi routers, and so on, need power to operate. Electricity is one of the most common sources of power, which has been quite unstable in Nepal. Of the total respondents, a great majority of them (82%) used electricity to use devices for online classes, while a few of them (18%) used solar and inverter power backup as well (Table 2). Electricity is one of the most common sources of power in Nepal. 89.9% of the population has access to electricity in Nepal (WB, n.d.), which has been quite an unstable source of power in Nepal. A great majority of the students relied on electricity only to operate their devices used for online classes. They might have been disturbed by the unstable supply of electricity. In response to the open-ended questionnaire, many students have also reported that the power cut was one of the main challenges they faced while studying online. Only a few students had solar or inverter power backups to manage the unstable supply of electricity. It indicates that the online classes of a great majority of the students might have been disturbed by the unstable electricity supply.

Table 2*Means of access to online classes during the COVID-19 pandemic*

Means of access	Number	Percent
Online platform for teaching-learning		
Zoom	89	100.0
Main device used to attend online classes		
Smartphone/tablet/iPad	64	71.9
Computer (desktop/laptop)	25	28.1
Total	89	100
Access to internet to attend online classes		
Wi-Fi	82	92.1
Mobile data	7	7.9
Total	89	100
Power system at home to attend online classes		
Electricity	73	82.0
Electricity plus solar/inverter power backup	16	18.0
Total	89	100

Source: *Online Survey 2021****Impact of the COVID-19 Pandemic on the Academic Performance of Students***

The impact of the COVID-19 pandemic on the academic performance of students has been assessed based on the change in the results of semester-end examinations (pass/fail) and the changes in their SGPA (standard grade point average) in the semester-end examinations before and after the COVID-19 pandemic.

Change in semester-end exam results before and after the COVID-19 pandemic:

The study observed that the pass percentage of students, compared to the results before the COVID-19 pandemic, has increased by nine percent after the COVID-19 pandemic in the university. In other words, the rate of failed results has decreased by the same percentage. Among the total students participating in this study, 86.5% of students had passed their semester-end examinations before the COVID-19 pandemic, which increased to

95.5% after the COVID-19 pandemic (Table 3). The increase in pass rate to some extent also correlated with the overall results of the university, which increased after the COVID-19 pandemic compared to before the pandemic.

Table 3*Student's semester-end exam results before and after the COVID-19 pandemic*

Exam result	Pass		Fail	
	No.	%	No.	%
Before COVID-19 pandemic	77	86.5	12	13.5
After COVID-19 pandemic	85	95.5	4	4.5

Source: *Online Survey 2021*

Change in SGPA obtained by the students in the semester-end examinations before and

after the COVID-19 pandemic: The changes in the SGPA obtained by the students in the semester-end examinations before and after the COVID-19 pandemic were one of the measures used to assess the impact of the COVID-19 pandemic on the academic performance of the students. A paired samples t-test was run to determine the impact of the COVID-19 pandemic on students' academic performance.

The study revealed a significant increase in the mean SGPA score obtained by students in the semester-end examinations before and after the COVID-19 pandemic. The SGPA increased from 2.766 to 3.146 between this period. The paired samples t-test confirmed a significant increase in the mean SGPA score of .379 following the COVID-19 pandemic ($p < .001$) (Table 4). It signifies that the impact of the COVID-19 pandemic on undergraduate students'

Table 4

Changes in SGPA obtained by students in the semester-end examinations before and after the COVID-19 pandemic

SGPA in semester-end exam	N	Min	Max	Mean	Mean difference	SD	SE	t	Sig.
Before COVID-19 pandemic	89	0.0	4.0	2.766					
After COVID-19 pandemic	89	0.0	4.0	3.146	.379	.914	.096	3.911	.000

Source: *Online Survey 2021*

Is there a gender difference in the impact of the COVID-19 pandemic on the academic performance of students?: Gender is related to social and cultural differences between males and females. Gender issues in policymaking, planning, and development practices have been given top priority by governments and development organizations for the last several years. This study has also examined gender

academic performance was positive. There might be several reasons behind such positive impacts on academic performance. One of the major causes behind such results could be the modality of online exams, which comprised written exams and viva-voce (PU, 2021). Before the COVID-19 pandemic, the students were evaluated based on their performance on written examinations only. After the COVID-19 pandemic, the students were also evaluated based on their performance in viva voce. The use of multiple methods of evaluation might have been favourable for scoring higher grades, thereby resulting in a higher SGPA. Furthermore, the findings of this study to some extent also correlated with the overall results of the university; compared to the results before the pandemic, the pass percentage increased in the results after the COVID-19 pandemic.

differences in the impact of the COVID-19 pandemic on the academic performance of students. According to the study, male students appear to have a higher pass rate than their female counterparts. The pass percentage of females before the COVID-19 pandemic was 88.5%, which increased to 93.4% after the pandemic, whereas the pass percentage of males before the pandemic was 82.1%, which increased to 100% after

the pandemic. It means that in comparison to before the pandemic, the pass percentage of females after the pandemic increased by 5.5%, while, the pass percentage of males increased by 21.8% during the same period (Table 5).

Though Fisher's test did not confirm the statistical significance of the differences in the impact of the COVID-19 pandemic on the academic performance of female and male students, the crosstab distribution of pass percentages of male and female students before and after the pandemic indicates that the COVID-19 pandemic had a more positive impact on the academic performance of male students compared to their female counterparts. From the gender perspective, this result revealed a very interesting fact about the gender differences in Nepalese families. Before the pandemic, female students were better performers compared to their male counterparts, which reversed after the pandemic. It means that, from the lens of gender equality, the pandemic had negative impacts on the academic performance of female students. There might be several reasons behind such differences between female and male students. However, looking at it through a gender lens, this result might have been influenced due to gender roles and responsibilities as well as gender priority, which is still in practice in Nepalese

societies. In typical Nepali families, females are expected to participate more in household chores compared to their male counterparts. The students attended online classes from their homes during the pandemic. The female students might have been involved in household chores as they were at home during online classes, thus not being able to pay much attention to the classes, while at the same time, the male students might have enjoyed more freedom to attend online classes. Similarly, it can be imagined that if there is only one smartphone, tablet, iPad, laptop, or desktop computer at home and if there are female and male students in the family, who would be using that device for the online classes. The male students are assumed to be using the device for online classes in average Nepali families. Female students would have to compromise for their brothers, thus resulting in their lower academic performance. This result of the study also confirmed the findings of Farid, Hayes, and Sirkhell (2021), who pointed out more negative effects of the COVID-19 pandemic on women and girls in comparison to men and boys. In the same way, this finding also supports the finding of Giusti, et. al, (2021), who identified the female gender as one of the strongest predictors of poor academic performance during the COVID-19 pandemic.

Table 5

Gender differences on the impact of the COVID-19 pandemic on the academic performance of students

Gender	Before COVID-19 Pandemic				After COVID-19 Pandemic			
	Pass		Fail		Pass		Fail	
	N	%	N	%	N	%	N	%
Female	54	88.5	7	11.5	57	93.4	4	6.6
Male	23	82.1	5	17.5	28	100.0	0	0.0
Fisher's exact test: $p > .05$					Fisher's exact test: $p > .05$			

Source: *Online Survey 2021*

Does place of residence matter in the impact of the COVID-19 pandemic on the academic performance of students?: Of the total population of Nepal, nearly two-thirds (66.08%) live in urban areas, followed by rural areas (33.92%) (CBS, 2021). The urban population has increased by 4.57% over the last 10 years. Urban areas are more developed and have better access to goods and services. The study has also examined rural-urban differences in the impact of the COVID-19 pandemic on the academic performance of students at Pokhara University.

Though Fisher's test did not confirm the statistical significance of the differences in the impact of the COVID-19 pandemic on the academic performance of students from rural and urban areas, the crosstab distribution of pass percentages of the students from rural and urban areas before and after the pandemic indicated that the COVID-19 pandemic had a more positive impact on the academic performance of the

students from urban areas compared to their rural counterparts. The pass percentage of the students from urban areas before the pandemic was 85.1%, which increased to 95.9% after the pandemic, while the pass percentage of the students from rural areas remained constant during the same period (Table 6). There might be several reasons behind such differences between students from rural and urban areas. Some of the reasons could be related to access to facilities available to families in urban areas, such as better internet, power backup, and so on, thereby creating a better environment for online classes and resulting in better pass results. On the other hand, in response to an open-ended question in the survey, students from rural areas also reported that they faced difficulty joining online classes due to electricity cut-offs and poor internet connection from mobile data, which might have affected their academic performance in the semester-end examinations.

Table 6

Rural-urban differences on the impact of the COVID-19 pandemic on the academic performance of students

Place of residence	Before COVID-19 Pandemic				After COVID-19 Pandemic			
	Pass		Fail		Pass		Fail	
	N	%	N	%	N	%	N	%
Rural	14	93.3	1	6.7	14	93.3	1	6.7
Urban	63	85.1	11	14.9	71	95.9	3	4.1
Fisher's exact test: $p > .05$				Fisher's exact test: $p > .05$				

Source: *Online Survey 2021*

Conclusions

COVID-19 has been a global pandemic since late 2019 and still has some effects. It has serious effects on the economic, social, cultural, and psychological aspects of individuals, households, communities, nations, regions, and the world as a whole. Furthermore, it has distinctive impacts on academic sectors. The study lives of

many students around the globe have been disrupted due to this pandemic, which is considered the largest disruption in the history of formal education. Schools almost around the globe have been closed for several months. The students of Nepalese universities were also affected by the COVID-19 pandemic. After a dilemma for several months, the Nepalese universities

started online classes to continue the study of their students. Both teachers and students were not familiar with online classes and a new mode of student evaluation through online written exams and viva voce. In this context, using the data enumerated from 89 undergraduate students at Pokhara University through an online survey, the Zoom platform, smartphones and tablets, Wi-Fi, and electricity are the major means to attend online classes for the students studying at undergraduate programs in the School of Development and Social Engineering, Pokhara University. Despite many negative effects of the pandemic on different aspects of life, the COVID-19 pandemic has had a positive impact on their academic performance but does not have gender and rural-urban differences in it.

Based on the findings of the study, it is concluded that despite many negative effects of the COVID-19 pandemic on different aspects of life, the pandemic had a positive impact on the academic performance of undergraduate students at Pokhara University.

Based on the study's findings, the following recommendations are made to the concerned policymakers and practitioners to avoid the problems and challenges that may be caused by similar pandemics in the future.

1. A great majority of the students relied on electricity for online classes. Only a few students had power backup facilities in their homes. A great majority of the students were disturbed by the unstable electricity supply. Many students reported that frequent power cutoffs were one of the major challenges for online classes. Therefore, the Government and Nepal Electricity Authority (NEA) are suggested to manage an uninterrupted supply of electricity for its citizens to help students study online classes effectively.
2. Internet access is necessary to attend online classes. A great majority of the

students accessed the internet through Wi-Fi, followed by mobile data. However, many students reported that there were problems with the internet connection and its slow speed, resulting in low voice clarity, so lecturers were not very audible. Thus, the Government and Internet Service Providers (ISPs) are suggested to work on improving the quality of the internet connection so that students can attend online classes efficiently.

3. Before the COVID-19 pandemic, the academic performance of female students was better than male counterparts. However, the descriptive statistics indicated that the male students defeated the female students after the pandemic. The COVID-19 pandemic seemed to have a greater positive impact on the academic performance of male students compared to their female counterparts. It might have been due to the differences in gender roles and responsibilities as well as the gender priority in typical Nepalese families. Therefore, the Government and Development Organizations advocating gender issues are suggested to organize awareness programs on gender equity and gender equality in access to higher education for typical Nepalese families.
4. Descriptive statistics of the study also indicated that, in comparison to the students from rural areas, the COVID-19 pandemic seemed to have a greater positive impact on the academic performance of the students from urban areas. The differences seem to have a relation with the access to facilities available to families in urban areas, such as better internet, power backup, and so on, thereby creating a better environment for online classes and resulting in better pass results for them, which are lacking in rural areas. Thus, the Government, Nepal Electricity Authority (NEA) and Internet Service Providers (ISPs) are suggested to increase access and improve the quality of the power supply and internet

in rural areas to improve the academic performance of the students from those areas.

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