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Original Article

Perceptions of Online Learning Among Nursing Students During COVID-19

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Abstract

Online learning is a virtual learning system that integrates an internet connection with teaching and learning. The online learning method is a solution used by higher education institutions in Nepal during the COVID-19 outbreak. The study aimed to assess nursing students' perception of online classes during the COVID-19 pandemic. A cross-sectional survey design was applied, including 387 respondents from three colleges in Birgunj. Data was analyzed through SPSS version 16, and the level of perception was determined by using a median score as a cut-off. About one-fourth had no facilities of internet facilities at home, and nearly a similar number of respondents felt a disturbance in their internet connection during online classes. Majorities responded that they were satisfied with the apps used during class. About half of the students strongly agreed that the availability of devices, the internet, and apps helped with online learning. The majority (more than 80%) responded that online learning is not effective in basic nursing education (PCL & BSc Nursing) because students felt difficulty to do practice in a clinical setting after online classes. More than one-third of the respondents disagreed with a university/campus-run online education system in Nursing education. This study concludes that online education in Nursing needs preparation to connect theories and practice.

Keywords: online learning, perception, nursing education, Nepal

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Introduction

COVID-19 was first detected in Wuhan, China, in December 2019, though the exact source of viral transmission to humans and the virus's pathogenic mechanisms remain unclear (Mutu et al., 2021). The disease rapidly spread, prompting the World Health Organization (WHO) to declare it a global pandemic on March 11, 2020, emphasizing the urgent need for preventive measures to slow its transmission. In response, lockdowns and social distancing were implemented, necessitating the closure of educational institutions worldwide (Mutu et al., 2021). The impact of COVID-19 extended beyond public health, severely disrupting the social and educational spheres globally (Cacciapaglia et al., 2021). Educational institutions faced unprecedented disruptions, as the pursuit of in-person learning became increasingly uncertain. The pandemic has progressed in waves, with the first striking in 2020 and subsequent waves affecting different parts of the world in 2021 and beyond, underscoring the challenges in resuming traditional, in-person education (Cacciapaglia et al., 2021).

Tribhuvan University (TU), the largest and oldest university in Nepal, also officially endorsed the virtual classroom model with a policy and distributed a notice to its institutions on 25 April 2020 (Koirala et al., 2020). A month after the lockdown, all medical colleges in Nepal have launched online courses to keep up with the academic calendar (Nepal et al., 2020).

Physical education in classrooms was replaced fairly quickly with virtual education, usually for a few days at the college and school levels to continue academic activity. This entailed challenges and new learning opportunities for all students, as well as the potential for some change. Online learning is a virtual learning system that integrates Internet connectivity into the teaching and learning process. The interaction of teaching and learning activities can be done remotely with the help of the Internet and online media (Koirala et al., 2020). It provides flexibility, enabling learners to access educational resources, participate in discussions, and complete assignments at their own pace and convenience, making it particularly beneficial for students with diverse schedules or geographical constraints (Dhawan, 2020). Online learning platforms, such as Moodle, Google Classroom, and Zoom, are commonly used to facilitate synchronous and asynchronous learning activities, creating a collaborative virtual environment (Sun et al., 2008).

In developing countries like Nepal, there are several technical, educational/literacy, and socioeconomic challenges that may hinder the online learning process (Sharma et al., 2021). The existing education system and its unequal distribution of resources often widen the gap between the haves and have-nots. With the advent of COVID-19, the digital divide and unequal access to e-learning and e-resources have exacerbated inequality between advantaged and disadvantaged children, further widening the divide (Dawadi et al. 2020). The challenges such as technological barriers, lack of face-to-face interaction, and motivation issues often impact learners' perceptions of online education (Sun et al., 2008).

Disrupted network connectivity in rural areas affects participation in online learning. Evidence shows that as of 2020, approximately 37.7% of Nepal's population had internet access. This was a significant increase from the year 2011 when 9% of Nepal's population used the internet (Ganbold, 2022). The availability of electronic devices (digital devices) for teachers and students is another factor that prevents online teaching and learning. Students may not take online classes seriously because teachers have little control over them. Similarly, online technology can be difficult for teachers who specialize in traditional teaching and are not familiar with using electronic devices. One of the limitations of distance learning is the inability of teachers and students to interact face-to-face.

The COVID-19 pandemic led to the unprecedented closure of schools and universities worldwide, severely disrupting students' knowledge and skill development, including in Nepal (Dawadi et al., 2020). Education is crucial not only for fostering social skills and awareness but also for enhancing children's abilities and playing a critical economic role (Burgess & Sievertsen, 2020). Even short-term interruptions to education can negatively impact skill acquisition. This issue is particularly pronounced in nursing education, where developing professional competencies requires not just theoretical knowledge but also hands-on experience. Nursing students need adequate exposure to simulated labs and real-world practice environments to cultivate the essential hard and soft skills that are difficult to replicate through online or virtual methods (Murphy, 2021).

However, the rapid transition to remote learning has highlighted significant challenges, including access to resources, internet connectivity, and technological adaptability. Nursing education, with its highly practical and experiential nature, has been especially impacted, as virtual platforms cannot fully substitute for the clinical and laboratory experiences essential for skill development. This study aims to examine the availability of resources for online learning and explore nursing students' perceptions of its effectiveness in the Parsa district. The findings will provide evidence-based insights to help universities, such as Tribhuvan University, develop more effective and inclusive online teaching strategies for nursing education.

Literature Review and Research Gap

UNESCO reports that 1.6 billion children in 191 countries are severely affected by the temporary closure of their educational institutions (Meinck et al., 2022). To mitigate the impact, educational institutions in different situations have responded differently to closures, and students, teachers, administrators, and parents should have different options depending on the materials and human resources available to them. Most common options include innovative technologies (e.g., digital and mobile technologies combined with traditional technologies such as radio and television) to ensure at least some form of continuity in education. Despite these efforts, at least one-third of students were deprived of distance learning due to a lack of connectivity and device issues (UNESCO, 2021).

Successful online learning also depends on other factors such as accessibility, use of appropriate methods, course content, and assessment criteria. E-learning, like any teaching method, has advantages and disadvantages for both students and teachers. Empirical studies conducted in different countries reveal mixed perceptions of online learning among medical and nursing students. For example, a survey in Pakistan found that medical and dental students preferred traditional classroom learning over virtual classes during the lockdown (Amir et al., 2020). Similarly, a study in Indonesia identified both supportive and deterrent factors for distance learning among dental students, suggesting varying levels of adaptability to online education (Amir et al., 2020). Conversely, in Sudan, 64% of medical students considered e-learning the best solution during the pandemic (Gismalla et al., 2021). In India, most respondents (70%) were willing to engage in online courses, citing smartphones as the preferred device for

learning (Muthu et al., 2021). These studies underline the importance of accessibility, teaching methods, and content design in determining the success of online education.

In Nepal, the adoption of online learning during the pandemic revealed both positive and negative aspects. A survey at Gandaki Medical College reported that 63.2% of nursing students were satisfied with their online classes; however, 54.1% expressed a negative perception of online learning (Koirala et al., 2020). At Lumbini Medical College, 59.7% of students agreed that face-to-face classes were more effective, with internet connectivity issues cited as a major barrier by 44.6% of respondents (Rana et al., 2021). The flexibility of location emerged as a key advantage, while signal dependency was identified as the most significant drawback (Koirala et al., 2020).

Despite these findings, limited data exist on the long-term perceptions of nursing students regarding online education after prolonged periods of virtual learning without physical classes. Understanding these perceptions is crucial for ensuring the readiness of students to adapt to such environments and for designing effective online nursing education strategies.

The COVID-19 pandemic significantly disrupted traditional education systems worldwide, necessitating a sudden shift to online learning. This transition posed unique challenges, particularly in developing countries like Nepal, where socioeconomic disparities, limited internet access, and insufficient digital infrastructure compounded the difficulties of remote learning (Dawadi et al., 2020). Nursing education was especially impacted, as it requires not only theoretical instruction but also hands-on clinical practice to develop the skills and attitudes essential for professional competence (Murphy, 2021). While global studies provide general insights into the challenges and benefits of online learning, they often overlook discipline-specific contexts such as nursing education. In Nepal, existing research highlights initial student perceptions but lacks an in-depth exploration of their long-term readiness and the pedagogical effectiveness of online learning in developing practical nursing skills. This study aims to address this gap by investigating nursing students' perceptions of online learning, focusing on the challenges and opportunities it presents during the COVID-19 pandemic.

Conceptual Framework

The conceptual framework for this study describes the expected relationships between various factors influencing nursing students' perceptions of online learning during the COVID-19 pandemic. It is grounded in empirical literature and developed with input from experts in the field. The framework identifies socio-demographic variables, the availability of devices and internet access, the use of online learning platforms, and teachers' capacity as critical determinants of students' perceptions of online learning.

Socio-demographic characteristics play a foundational role in shaping students' learning environments. Age, sex, place of residence, marital status, family structure, education level, annual family income, and parents' education and occupation collectively influence students' access to and engagement with online learning (Sharma et al., 2021). These variables determine not only the resources available to students but also their readiness and adaptability to new learning modalities.

Empirical research emphasizes the role of technological resources in facilitating effective online learning. There is a need for devices like smartphones, laptops, tablets, or computers with stable internet connectivity and a functional audio system to enhance the learning experience (Koirala et al., 2020). The availability of reliable internet services, such as stable Wi-Fi or data plans, greatly contributes to students' active participation in online courses (Ganbold, 2022).

Commonly used virtual platforms, including Zoom, Microsoft Teams, Google Meet, and Messenger, facilitate interactive online learning. These platforms provide the necessary infrastructure for teacher-student interaction but require effective usage to realize their full potential (Almahasees et al., 2021). Ease of access, functionality, and user familiarity with these platforms directly affect students' learning experiences.

The role of the teacher is the major determinant of the effectiveness of online learning. Teachers need to be both technically competent in using technology and digital platforms and professionally capable of applying interactive pedagogical methods developed for virtual environments. Studies underline the need for training both teachers and students on these tools to improve their ability to make a successful shift to online education (Amir et al., 2020). Furthermore, the willingness of teachers to

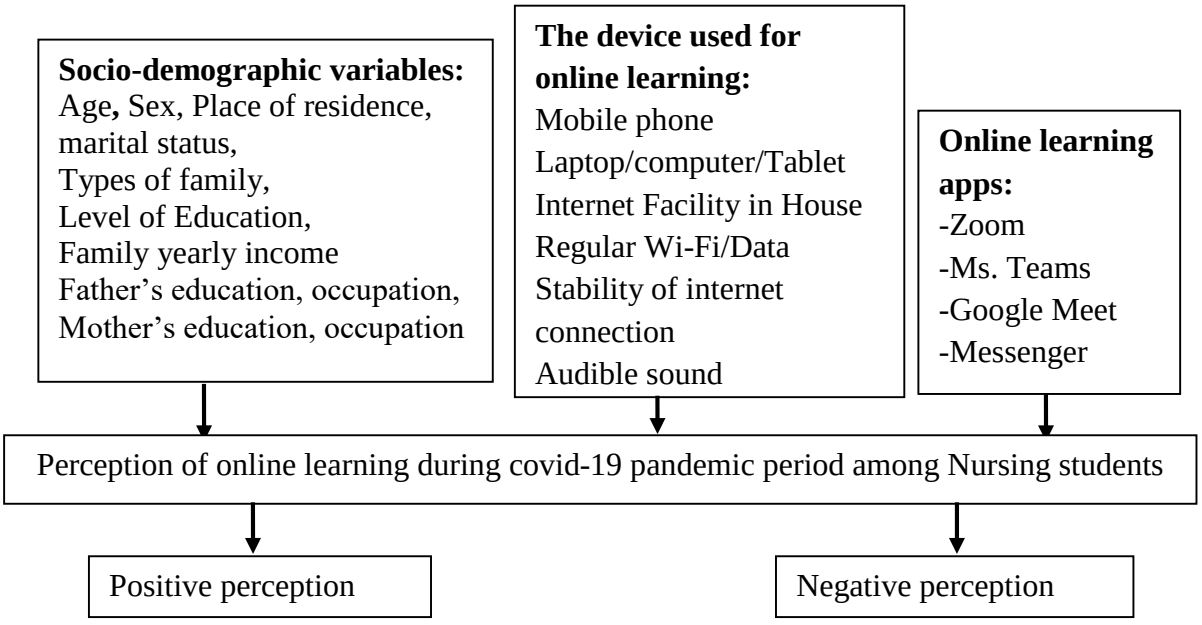
adopt modern teaching methods has a direct impact on students' performances and attitudes (Rana et al., 2021).

This study conceptualizes perception as either positive or negative, influenced by the aforementioned variables. If socio-demographic factors, technological resources, platform accessibility, and teacher capacity are optimized, online learning is more likely to be perceived as effective. Conversely, deficits in any of these areas can result in negative perceptions.

This framework is informed by recent literature emphasizing the interplay between individual, institutional, and technological factors in online education. For instance, Muthu et al. (2021) identify the digital divide and technological literacy as significant barriers to effective online learning, while Dawadi et al. (2020) highlight how limited internet access and resource disparities exacerbate educational inequities. By addressing these gaps, this study aims to provide actionable insights to improve online learning in nursing education.

Figure 1

Conceptual Framework on Perception of Online Learning during the COVID-19 Pandemic Period among the Nursing Students of Birgunj



Methodology

The researcher used the survey research design. Survey research design refers to a quantitative method of data collection where information is gathered from a sample of respondents using tools like questionnaires or interviews to understand their opinions, behaviors, or characteristics (Creswell, 2014). This approach is widely used in social sciences to describe trends, attitudes, or relationships within a population. This survey was conducted in the Parsa district part of Madhesh Province of Nepal.

The population was all the students studying Nursing education in different colleges in Parsa District. There was a total of 4 nursing colleges in the Parsa district affiliated with T.U, CTEVT, and one is a constituent campus of T.U.

The subjectivity of my being is stretched in space over time. Lived space is thus dynamic and dependent on temporality (Fuchs, 2007). The distance within a lived space depends upon how I feel about the time spent with myself or others (Bollnow, 1961).

Instrument Development and Validation

The researcher collected primary data from the respondents by using a structured research tool developed by the researcher. The questionnaire was developed in English and comprised three parts. The perception section employed a 6-point Likert scale.

1. Part I: Socio-demographic information of respondents, including 14 questions.
2. Part II: Information on the use of gadgets, learning apps, and internet availability during the online learning period, with 9 questions.
3. Part III: Perception of students toward online learning, consisting of 28 questions categorized into five groups:

a. Methods and media used by teachers during online learning (faculty capacity).
b. Availability of devices, internet, and apps during online learning.
c. Students' convenience in online learning.
d. Learning motivation in online learning.
e. Effective online learning.

To ensure reliability, the study employed several quality control measures, including pre-testing the questionnaire and consulting subject experts. The validity of outcomes was reinforced by the systematic development of the research tool and its review by peers and experts. Clear instructions and simple language were used to enhance the

reliability and clarity of the responses. Data collection was carefully supervised, and only single responses were allowed per participant. A biostatistician verified the data analysis methods to confirm their appropriateness for the study's objectives.

Data Collection

Administrative permissions were obtained from the respective colleges. Campus chiefs allocated coordinators to facilitate access to students' social media groups. The questionnaire, converted into a Google Form, included a detailed description of the study's purpose and a consent form. The form was shared with students through their social media groups, ensuring ease of access. Faculty coordinators were compensated for their assistance. Anonymity and confidentiality were maintained throughout the process, and participants had the right to decline or discontinue participation.

Data Analysis

Variables were measured on a 5-point Likert scale, and scores were adjusted for negative statements to ensure consistency. Data were organized, coded, and analyzed using IBM SPSS version 16. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the data. Perception scores were calculated, with a median value used as a cutoff to categorize perceptions as positive or negative.

RESULTS

Table 1

Sociodemographic Variable of Respondents (n=387)

Characteristics	Categories	Frequency	Percent
Level of education	Bachelor of Science in Nursing (BSc)	7	1.8
	Bachelor of Nursing Science (BNS)	38	9.8
	Proficiency Certificate in Nursing (PCL)	342	88.4

Studying Year	First Year	30	7.7
	Second Year	126	32.6
	Third Year	231	59.7
Sex of the respondents	Female	371	95.9
	Male	16	4.1
Ownership of Campus	Government	168	43.4
	Private	219	56.6
Residence during online learning	Rural	161	41.6
	Urban	226	58.4
Marital status	Never married	342	88.4
	Married	41	10.6
	Widowed	4	1.0
How do you perceive your family income?	Insufficient	65	16.8
	Sufficient	322	83.2
Father's educational status	Illiterate	24	6.2
	Literate	363	93.8
Mother's education status	Illiterate	106	27.4
	Literate	281	72.6

(Source: Field survey, 2022)

The study of 387 respondents highlights their demographic, educational, and institutional profiles. During online learning, 58.4% resided in urban areas and 41.6% in rural areas. Most participants were unmarried (88.4%), with small proportions married (10.6%) or widowed (1.0%). While 83.2% perceived their family income as sufficient, 16.8% reported it as insufficient. Fathers were predominantly literate (93.8%), compared to mothers (72.6%), reflecting higher illiteracy among mothers (27.4%). Educationally, 88.4% were pursuing a Proficiency Certificate in Nursing

(PCL), 9.8% a Bachelor of Nursing Science (BNS), and 1.8% a Bachelor of Science in Nursing (BSc), with most in their third year (59.7%). Females dominated the sample (95.9%), because entry of males in nursing education started from the academic year 2075/2076 with 15 percent (Edusanjal, 2018).and private institutions were more attended (56.6%) than government ones (43.4%) as the Birgunj Nursing campus is the only constituent campus, others are affiliated with Tribhuvan University and CTEVT.

Table 2

Use of Gadgets, Learning Apps, and Availability of Internet Service During the Online Learning Period (n=387)

Characteristics	Categories	Frequency	Percent
Ever received online learning before COVID-19?	No	387	100.0
Gadget used for attending online learning?	Laptop/computer	12	3.1
	Mobile	314	81.1
	Mobile/laptop/computer	59	15.3
	Tablet	2	0.5
Internet facility at own home	No	76	19.6
	Yes	311	80.4
Type of internet connection available during online class	Cellular data	81	20.9
	Combination of cellular data and Wi-Fi	78	20.2
	Wi-Fi	228	58.9
How was the Internet connection?	Average	2	0.6
	Disturbed	67	17.3
	Excellent	63	16.3
	Good	172	44.4
	Satisfactory	83	21.4
Was sound audible during online learning?	No	65	16.8
	Yes	322	83.2
	Average	135	34.9

Electricity facility available in the home	Good	235	60.7
	Poor	17	4.4
Apps used for online learning,	Google meet	35	9.0
	Ms. Teams	122	31.5
	Zoom	230	59.5
Satisfied after using the above Apps	Yes	353	91.2
	No	34	8.8

(Source: Field survey, 2022)

The findings of the research (Table 2) provide insight into the experiences of online learning during the COVID-19 pandemic. Before COVID-19, none of them ever received online learning (100%). The students attended online classes mainly by mobile phones (81.1%), followed by those who used laptops/computer devices (3.1%), both (15.3%), and tablets (0.5%). Internet access from home was available to the participants in 80.4%, mainly through WIFI (58.9%), cellular data (20.9%), or both sources (20.2%). The internet quality in most was rated as good (44.4%) or satisfactory (21.4%), though for some, it was disturbed (17.3%). In 83.2%, the sound was audible. Electricity availability at home was rated as good by 60.7%, average by 34.9%, and poor by 4.4%. A majority used Zoom (59.5%), followed by Microsoft Teams (31.5%), and Google Meet (9.0%); expressed satisfaction with the apps: 91.2%.

Nepal Telecommunications Authority estimates the mobile phone purchaser base at 6.5 million users, which is increasing day by day (Arhan et al., 2010), and by early 2022 in Nepal, it had reached 40.58 million mobile connections. National data published by Ookla's data showed that the median mobile internet connection speed via cellular networks is 18.42 Mbps, and the median fixed internet connection speed is 28.32 Mbps (Digital 2022; Nepal, 2022). However, several students who were in their hometowns or villages where the internet was not static faced internet problems so, Tribhuvan University along with other universities and its affiliated campuses and colleges have decided to enable different highly subsidized data pack offers catered by telecommunications service providers NTC and N-cell, to aid the internet problem faced by several teachers and students.

Table 3

Respondents' Perception of Method and Media Used by Teacher (n=387)

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Obtain and find out the teaching materials/learning materials delivered by the teacher when studying online.	10 (2.5)	24 (6.2)	84 (21.7)	233 (60.2)	36 (9.3)
Understand the material presented by the teacher when studying online	3 (0.7)	25 (6.4)	100 (25.8)	221 (57.1)	38 (9.8)
Teacher organized class to engage students fully/ Two-way discussion/interaction was enough between student and teacher.	4 (1.0)	43 (11.1)	89 (24.0)	196 (50.6)	55 (14.2)
Teacher responded timely to the questions of subject matter that raised in discussion forums/during class	9 (2.3)	23 (5.9)	42 (10.9)	239 (61.8)	74 (19.1)
Teacher used different methods and media during class to make class understandable and interesting	8 (2.1)	40 (10.3)	74 (19.1)	206 (53.2)	59 (15.2)

Source: Field survey, 2022

Table 3 presents respondents' perceptions of the method and media used by teachers and the availability of internet facilities and devices. Sixty percent of the respondents agreed with the statements obtained and found out the teaching materials/learning materials delivered by the teacher when studying online. More than half of the respondents agreed with the statements related to the method and media used by teachers during online learning (faculty capacity) however about one-third were neutral to strongly disagree, which signifies that the method and media used by teachers was not completely effective.

A teacher's competency in communication as well as his technical skills to use devices, availability of teaching devices, and handling multimedia content for effective presentation are very important. The results of the study highlight that the lack of teachers' competencies could be a major determinant for successful online learning. So, university and college management should manage the appropriate devices for teachers as well as train them to effectively use them for managing online classes (Muthuprasad et al., 2021).

Table 4

Respondents' Perception Regarding the Availability of Devices, Internet, and Apps During Online Learning (n =387)

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Online learning software(apps) was easy to understand and use	8 (2.1)	50 (12.9)	75 (19.4)	209 (54.0)	45 (11.6)
I felt the disturbance in class due to an internet problem	17 (4.4)	27 (7.0)	85 (22.0)	176 (45.5)	82 (21.2)
My device was appropriate for online classes.	5 (1.3)	48 (12.4)	78 (20.2)	199 (51.4)	57 (14.7)

(Source: Field survey, 2022)

Table 4. shows device, internet, and app availability during online learning. Few respondents completely disagree with statements about device, internet, and app availability during online learning However, about half fully agreed.

The results show that 81% used mobile phones to participate in online classes, and about 17% had interrupted internet service. This is in line with research conducted in Sri Lanka and India, where the majority of online learning is accessed via smartphones. Smartphones are inexpensive devices that spread knowledge anytime, anywhere. This may be the reason for the increased accessibility to online learning activities via smartphones.

However, the nursing curriculum places a strong emphasis on clinically-based education. Smartphones have several features that are useful for hands-on training. It is

important to note here that many undergraduates do not have equal access to the latest technology and facilities due to different economic circumstances. As a result, it can become a serious problem affecting the efficiency and usefulness of online learning (Chandrasiri et al., 2022; Muthuprasad et al., 2021).

Table 5

Perception of Students' Convenience in Online Learning (n =387)

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Communicated smoothly with the teacher during online learning	8 (2.1)	43 (11.1)	88 (22.7)	196 (50.6)	52 (13.4)
Asked directly to the teacher/lecturer when I didn't understand the subject matter during online learning	5 (1.3)	21 (5.4)	77 (19.9)	219 (56.6)	65 (16.8)
Always get a good response from the teacher/lecturer during online learning.	7 (1.8)	37 (9.6)	71 (18.3)	200 (51.7)	72 (18.6)
Enjoyed doing assignments given by the teacher/lecturer on online learning	7 (1.8)	40 (10.3)	71 (18.3)	221 (57.1)	48 (12.4)
Felt comfortable because the teacher/lecturer always understands the obstacles experienced when learning online (for example network barriers and data packets)	19 (4.9)	44 (11.4)	78 (20.2)	201 (51.9)	45 (11.6)
I was active after class discussion forums created by the teacher/lecturer during online learning	7 (1.8)	28 (7.2)	78 (20.2)	225 (58.1)	49 (12.7)

(Source: Field survey, 2022)

Table 5 presents that; half of the respondents agreed with the statements mentioned in students' convenience in the online learning domain which is similar to the study conducted by Muthuprasad et. al.,(2021) that flexible schedule and convenience were ranked as the major benefits of online learning. Similarly, half of the respondents agreed with the statements mentioned in students' convenience in the online learning domain which is similar to the study conducted by Muthuprasad et al. (2021) that flexible schedule and convenience were ranked as the major benefits of online learning.

Table 6

Respondent's Perception of Learning Motivation (n =387)

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was always on camera during online learning	7 (1.8)	48 (12.4)	123 (31.8)	158 (40.8)	51(13.3)
Paid attention when teacher/lecturer provides learning explanations during online learning	3 (0.8)	19 (4.9)	60 (15.5)	236 (61.0)	69(17.8)
Participated in discussion group for study assignments formed by the teacher/lecturer	5 (1.3)	14 (3.6)	56 (14.5)	250 (64.6)	62 (16)
Submitted assignments given by the teacher/lecturer on time.	5 (1.3)	14 (3.6)	33 (8.5)	232 (59.9)	103 (26.6)
School/Campus provided guideline for online learning	5 (1.3)	30 (7.8)	64 (16.5)	213 (55.0)	75 (19.4)
Sit calmly during online learning in front of the laptop/cell phone until the time set by the school/teacher/lecturer finishes.	8 (2.1)	25 (6.5)	66 (17.1)	212 (54.8)	76 (19.6)
Felt online learning diverse and Innovative with updated subject content	8 (2.1)	32 (8.3)	124 (32.0)	188 (48.6)	35 (9.0)

Felt online learning easier in terms of saving cost and time	25 (6.5)	92 (23.8)	105 (27.1)	129 (33.3)	36 (9.3)
Felt difficult to maintain self-discipline during online class.	11 (2.8)	84 (21.7)	104 (26.9)	152 (39.3)	36 (9.3)

Source: Field survey, 2022

Table 6 presents the perception of learning motivation in online learning. More than half of the respondents agreed with the statements about learning motivation in the online learning domain but few strongly disagreed.

Forty-five percent of the respondents disagreed with the statement I felt online learning is effective rather than face-to-face learning. This finding is supported by another study conducted in Asian countries, which showed that around 60% of respondents agree with the statement that online classes are less effective when it comes to communication with the instructor as compared to face-to-face classes. (Muthuprasad et al., 2021)

Table 7

Perception of Students Regarding the Effectiveness of Online Learning (n=387)

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I felt online learning is effective rather than face-to-face learning.	72 (18.6)	174 (45.0)	67 (17.3)	52 (13.4)	22 (5.7)
The interaction of online teaching and learning is better than face-to-face learning	72 (18.6)	160 (41.3)	69 (17.8)	59 (15.2)	27 (7.0)
Online learning facilities are always supported, (Electricity, Network, Mobile/laptop) for online learning.	39 (10.1)	108 (27.9)	107 (27.6)	103 (26.6)	30 (7.8)
I felt the home environment was not favorable for effective online learning.	10 (2.6)	53 (13.7)	190 (49.1)	102 (26.4)	32 (8.3)
Online learning is not effective in basic nursing education (PCL &	12 (3.1)	26 (6.7)	50 (12.9)	152 (39.3)	147 (38.0)

BSc Nursing) because student felt difficulty to do practice in clinical setting after online class.					
Online learning was enjoyable during the COVID-19 pandemic period.	15 (3.9)	73 (18.9)	125 (32.3)	140 (36.2)	34 (8.8)
In future, I recommend University/Campus to run online education system in Nursing.	91 (23.5)	139 (35.9)	69 (17.8)	69 (17.8)	19 (4.9)

(Source: Field survey, 2022)

Table 7 shows that the majority (more than 80%) responded that online learning is not effective in basic nursing education (PCL & BSc Nursing) because students felt difficulty to do practice in clinical setting after online classes. Online learning lacks real practice in a variety of clinical situations but the nursing education system places a lot of emphasis on imparting practical skills to the learners.

More than one-third of the respondents disagreed with the statements, in the future, I recommend university/campus run an online education system in Nursing education. The reason behind this is that nursing science degree programs are designed to provide graduates with the competency required to deliver high-quality health care with caring attitudes. However, this pandemic has disrupted their usual practice-based learning environment and placed them in difficulty acquiring and completing the clinical knowledge and skills from the real clinical environment (Chandrasiri et al., 2022).

Table 8

Respondent's Level of Perception Regarding Online Learning (n=387)

Perception Level	Frequency	Percent
Negative	52	13.4
Positive	335	86.6
Total	387	100.0

(Source: Field survey, 2022)

Table 8 presents respondent's level of perception of online learning. Eighty-six percent had a positive perception of online learning however 13.4% had a negative perception. The other two studies conducted in Nepal also found positive perceptions toward online learning (Koirala et al., 2020; Rana et al., 2021).

According to research, online classes are comparable to traditional classroom settings when they have the right connectivity, recorded videos, appropriate use of devices with good technical skills, proper interaction between teacher and students, and follow-up. Therefore, to adopt online learning its requirements should be fulfilled by institutions and learners.

Discussion

This study provides important insights into nursing students' perceptions of online learning, particularly its relevance to technical education. The findings emphasize three key messages:

Relevance of Online Learning in Technical Education

This paper emphasizes the need to assess the effectiveness of online teaching and learning strategies within technical disciplines, particularly nursing. While students have acknowledged advantages such as increased flexibility and improved accessibility, they have also raised concerns regarding the efficacy of online education in fostering critical clinical skills. Research conducted by Dhawan (2020) suggests that while online learning is proficient in conveying theoretical knowledge, it encounters considerable obstacles when it comes to skill-oriented education. Likewise, Sun et al. (2008) highlight the crucial role of practical experience in preserving the standards of technical education. This study advocates for a well-structured incorporation of hands-on clinical training in conjunction with theoretical online coursework.

Differentiation of Online Learning Modes

The study examined the distinctions between synchronous and asynchronous modalities of online instruction, highlighting their varying impacts on student engagement and learning outcomes. Synchronous formats, such as live virtual classes, proved more engaging but necessitated reliable internet access and technical support. Conversely, asynchronous approaches, including pre-recorded lectures and online discussion forums, offered greater flexibility but often lacked interactive elements.

According to Martin et al. (2020), an optimal learning experience can be achieved by blending both synchronous and asynchronous modes, supplemented by innovative digital tools like virtual simulations.

Challenges Due to Lack of Preparation

The study found that a lack of adequate preparation for online learning among both students and faculty was a recurring challenge. This aligns with previous research by Koirala et al. (2020), which identified inadequate infrastructure, limited device access, and insufficient educator training as significant barriers to effective online education. Nursing students in the current study similarly emphasized the need for institutions to invest in robust technological infrastructure and comprehensive faculty training programs.

Why This Paper Offers Insights

This study offers valuable insights into the growing discourse on the role of online learning in technical education, particularly within the nursing field, which heavily relies on practical, hands-on experience. Online learning, initially conceived as a supplement to traditional education, gained widespread adoption during the COVID-19 pandemic, as educational institutions globally leveraged digital platforms to ensure learning continuity (Dhawan, 2020). In developed countries, online nursing education has been effectively implemented through advanced tools such as virtual simulations, telehealth practices, and digital case studies, enabling a balanced integration of theory and clinical practice (Regmi & Jones, 2020). However, the adoption of online learning in low-resource settings has faced significant challenges, including inadequate infrastructure, limited access to digital devices, and insufficient faculty training (Koirala et al., 2020).

This paper provides critical insights into these challenges, particularly in countries where nursing education programs are still transitioning from traditional to hybrid or fully online models. It highlights the gaps in readiness and resources, offering a nuanced understanding of students' perceptions and the practical limitations of online learning in technical education. Such insights are instrumental for policymakers and educational institutions in developing effective strategies to integrate online learning without compromising the quality of practical education in nursing.

Despite the study's strengths, certain limitations should be noted. Additionally, self-reported data may introduce response bias. Future research could address these limitations by employing a randomized sampling approach and incorporating qualitative methods to gain deeper insights.

Conclusion and Policy Implications

This study explored nursing students' perceptions of online learning and its implications for nursing education. While many respondents viewed online learning positively, concerns were raised about its limitations in skill-based technical education like nursing. Students highlighted difficulties in translating theoretical knowledge into practical skills during clinical practice, a vital aspect of nursing training. Notably, over one-third of respondents did not recommend continuing online classes for programs such as PCL and BSc Nursing.

The findings suggest that online learning holds potential as a supplemental tool when paired with appropriate technological and pedagogical strategies. However, its limitations in fostering practical skills emphasize the need for integrating hands-on clinical training. Recommendations include improving infrastructure and technical support, enhancing online teaching methods through training and digital tools, ensuring practical exposure through structured clinical sessions, and developing policies that balance theoretical and practical learning components. Collaborative efforts by institutions and policymakers are essential to address these challenges and leverage online education effectively without compromising the development of competent nursing professionals.

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