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Research Article

Students' Voices on Online Classes during COVID-19 Pandemic

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Abstract

This descriptive research involved a survey of undergraduate and graduate students in one of the medical colleges. Due to the COVID-19 pandemic, the researchers adopted a convenience sampling technique to select research participants. Data were collected using an online questionnaire that had Cronbach's alpha value of .895. Descriptive analyses were performed to analyze the data using SPSS software. The findings revealed that despite the majority of students possessing their own laptops and mobile phones, there were some who did not have their own laptops and mobile phones. On the amount of time spent by the students, students spending time on computers and mobile phones for other purposes outweigh the time they spend for academic purposes. Similarly, from many applications and approaches adopted by the teachers, the majority of the students rated zoom, followed by VLE, as a highly effective mode of online lesson delivery. Further, students perceived that online teaching promotes content-related learning, encourages equal participation among students, ensures maximum interaction between tutor and students, allows assorted assessment techniques, and receives quick responses to students' queries from the tutors. On the contrary, the findings also revealed students' low level of satisfaction with the timing of the online sessions, teachers' use of online teaching skills and strategies, their discomfort in communicating with the tutor and classmates electronically, time management problems associated with online classes, and

tutors delay in correcting and returning students' works. All in all, students perceive online learning as being less academically rigorous than face-to-face education.

Introduction

Upon confirming the first Coronavirus (COVID-19) case in Bhutan on March 6, 2020, precautionary measures were put in place by the government. The entry of foreign tourists was restricted instantaneously and schools in three districts (Thimphu, Paro, and Punakha) were closed to prevent local transmission in these areas where the first Covid patient has traveled to ("First Confirmed Coronavirus case in Bhutan", 2020) [1]. Further, with the surge of confirmed COVID-19 cases in the country, stay-at-home order was passed and implemented to conduct contact tracing, testing, and to maintain social distancing as a preventive measure from catching or spreading the virus [2]. Moreover, face-to-face classes in all the schools and colleges were suspended in the country from March 19, 2020 (Ministry of Education [MoE], 2020) [3]. As a result, schools and colleges were compelled to make concerted efforts to maintain learning continuity by adopting online teaching.

The COVID-19 pandemic has uncovered both opportunities and shortfalls in our education system. It has tested the system on various grounds-from access to the internet, computers, and applications required for online education, environments needed to focus on learning, tutors' knowledge and skills in online teaching, students' knowledge, and readiness, up to instructional designs and resources crucial for online classes [4]. Therefore, this study attempted to evaluate students' perceptions of online learning facilities, teaching, communication, learning opportunities, and assessment. It was also intended to examine students' overall impressions of online learning.

Problem Statement

With the stay-at-home orders in place due to the ongoing COVID-19 pandemic, schools and colleges in Bhutan have sought to offer online classes to students as a substitute for the conventional face-to-face classrooms [3]. To provide education to the school students amidst the pandemic, the Ministry of Education (MoE) in collaboration with the Royal Education Council (REC), and the Bhutan Council for School Examination and Assessment (BCSEA) has proposed many curriculum implementation modalities [3]. For curriculum delivery modalities, different stakeholders such as Bhutan Broadcasting Service (BBS), Bhutan Telecom (BT), Department of Information Technology and Telecom (DITT), and Volunteer Teachers of Bhutan (VToB) have joined the Ministry in developing curriculum delivery modalities. This 'Education in Emergency' programme helped schools in building resilience and continue providing education to all the school students [3].

Similarly, the Office of the Vice-Chancellor, Royal University of Bhutan (RUB), has brought together significant stakeholders from different colleges to design appropriate curriculum and delivery modalities and implement them for college students. As a pandemic preparedness and response plan, institutional arrangements, as well as both short and long-term response strategies were developed and put into practice [4]. However, as the pandemic caught school and college education systems, not in their best of preparation,

limited or a lack of experiences on health emergencies and time required in visualizing and developing new instructional designs and delivery in short time undermines the smooth transition from face-to-face classes to online classes (Parks, 2020).

Moreover, as students have to rely on their resources to continue learning remotely through the internet or other designs, parents prioritize learning for some children in the family over others by ensuring accessibility as well as arranging pertinent amenities for online classes [4]. As a result, the disproportionate distributions of educational opportunities often impede the growth and development of underprivileged learners (Parks, 2020) [6].

Further, teachers also have to adapt to new pedagogical designs and modes of delivery, the effectiveness of online classes remains at stake as they have to conduct online classes, for which they might not have been trained adequately [7,8]. Moreover, as students' satisfaction depends on tutors and their quality of online instructional design and delivery [9]; it is imperative to review students' perceptions on these areas. Therefore, this study was intended to explore XYZ College students' perception of online classes during the Coronavirus pandemic lockdown. Perceptions were sought on six different areas of online classes:

- Online Learning Facilities
- Online Teaching
- Online Communication in teaching
- Online Learning Opportunities
- Online Assessment
- Impression on Online Learning

Following research questions were formulated based on the areas identified for evaluation:

1. Which virtual platform or application is most appropriate for online teaching and learning?
2. Do the current facilities for online teaching-learning ensure optimal student learning?
3. What is the perception of the students of XYZ College on online teaching?
4. Does online teaching provide adequate time and space for the students to communicate?
5. Does online teaching provide learning opportunities to the students?
6. What is the perception of the students of XYZ College on an online assessment?
7. What is the overall impression of the students of XYZ College on online teaching?

Method

A descriptive survey research design was adopted to assess XYZ Business College students' perceptions of online classes. Descriptive research can be either quantitative or qualitative. Based on Glass and Hopkins'

(1984) [10] statement on descriptive research, data were gathered to describe events by organizing, tabulating, depicting, and describing and analyzing the data.

Population and Sampling

This study involved a survey of undergraduate and graduate students in one of the medical colleges (named here as XYZ college). Due to the COVID-19 pandemic and the risks associated with Coronavirus, the researchers adopted a convenience sampling technique to select research participants. Convenience sampling as a type of non-probability sampling method helped the researchers' expedite the data collection processes.

The questionnaire was administered to collect data. It was responded to by 264 participants (131 female and 133 male students). These participants were from different grades, reflected here as a year. The majority of the participants were from Second Year (n=88), followed by the first year (n=86), final year (55), and MB students (34). Figure 1 shows the total number of student participants who were attending the online classes at the time of data collection.

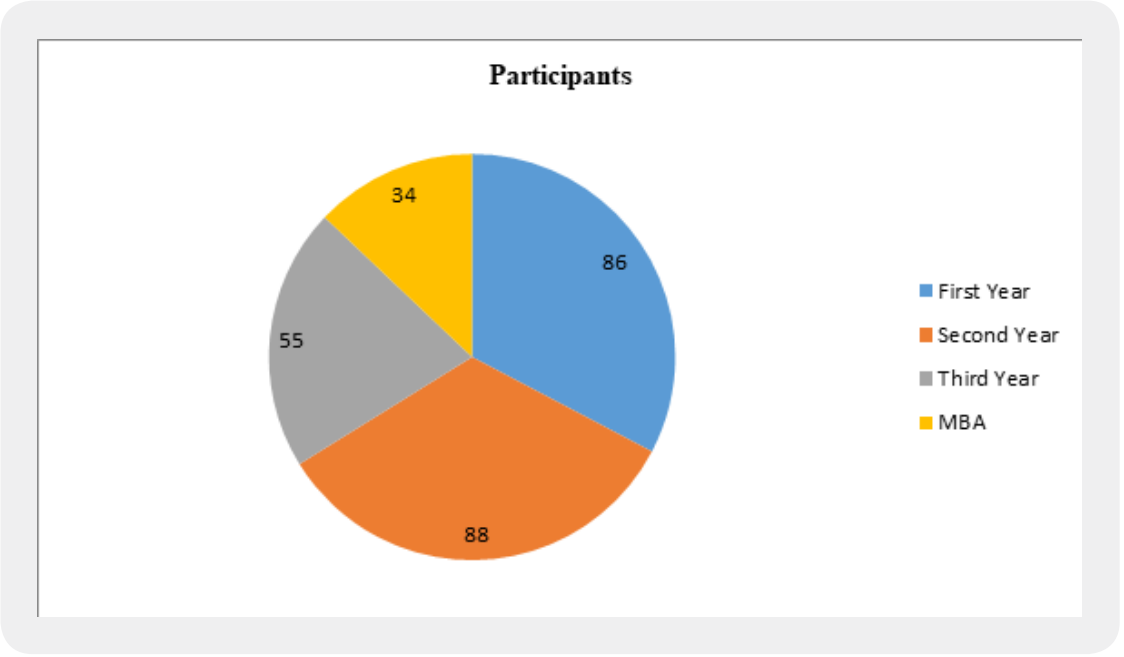

Figure 1: *Demographic Information of the Respondents*

As presented in figure 1, from the total of 263 respondents, the majority (33.5%) of the respondents were from the Second-year followed by First-year students (32.3%).

Data Collection Tool

An online survey questionnaire was sent to all the students of the medical college identified for this study as a research setting. This questionnaire was created based on the themes generated from the literature

reviews. The questionnaire has two parts: Part A with demographic information (gender, year, and estimated time spent going online) and Part B which requires them to rate their perceptions on the items on the Five-point Likert scale.

Reliability of the Data

Four experienced researchers were consulted to validate the questionnaire. Upon receiving the feedback on language, content, and context relevancy, the researcher made some changes as directed and a reliability test was performed to check the reliability of the questionnaire. The questionnaire was then administered as all the items appeared reliable. The overall reliability of all the variables together reported Cronbach's alpha value of .895. The reliability score for each variable is presented in Table 1.

Table 1: *Reliability Analysis*

Variables	Items	Cronbach's alpha
Online Learning Facilities	6	.835
Online Teaching	6	.804
Online Communication in teaching	6	.736
Online Learning Opportunities	6	.738
Online Assessment	6	.774
Impression on Online Learning	6	.724

Among the six variables, "Online Learning Facilities" reported the highest alpha value followed by the Online Teaching variable. However, Impression on Online Learning reported the lowest alpha value of 0. .724 compared to other variables. Since all the variables reported acceptable alpha values, further analysis of the data was performed based on the reliability analysis.

Data Analysis

Descriptive analyses were performed to analyze the data using SPSS software. Descriptive statistical tools–Mean and Standard deviation were computed.

Computers, mobile phones, and network connectivity remain a basic requirement for online teaching and learning processes. At the outset, this study attempted to assess whether the students have their own laptops and mobile phones, which are necessary for online classes. As per the analysis, the majority of the students have their own laptops and mobile phones (n=213; n=249). However, there were some students who did not have their own laptops or mobile phones (n=51; n=15).

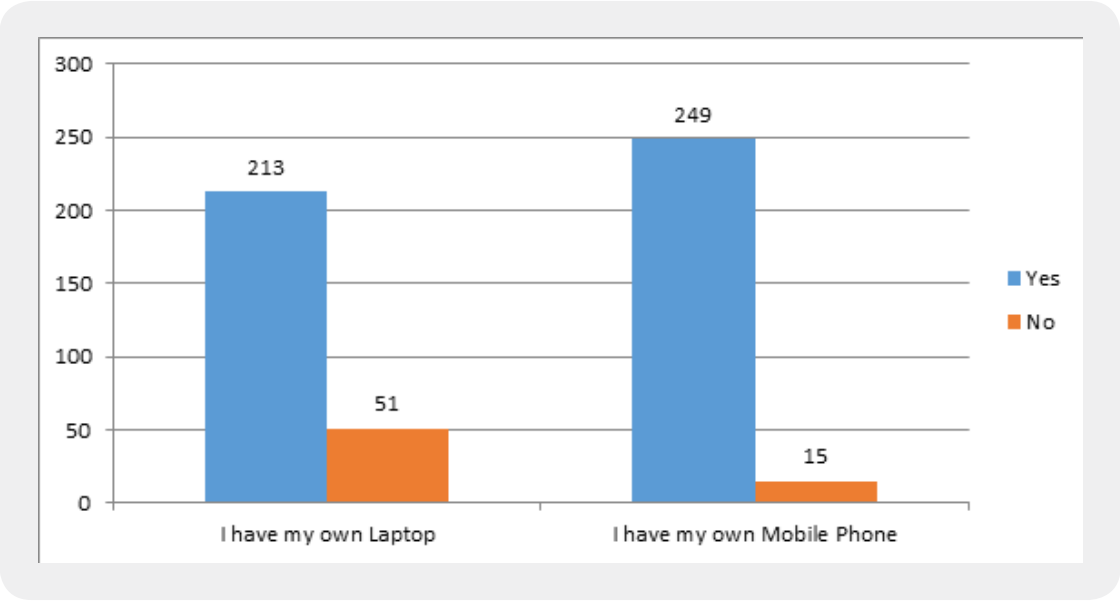

Figure 2: *Availability of Laptops and Mobile Phones*

To understand the amount of time spent by the students using these gadgets for curricular as well as co-curricular purposes, participants were asked to state the amount of time they spend per week. Most of the students spent around 10-15 hours a week using their computers and mobile phones for academic purposes. There were around 12 students who used computers for academic purposes beyond 20 hours a week while 10 students reported having used their mobile phones above 20 hours a week for other purposes as presented in the figure below (Figure 3).

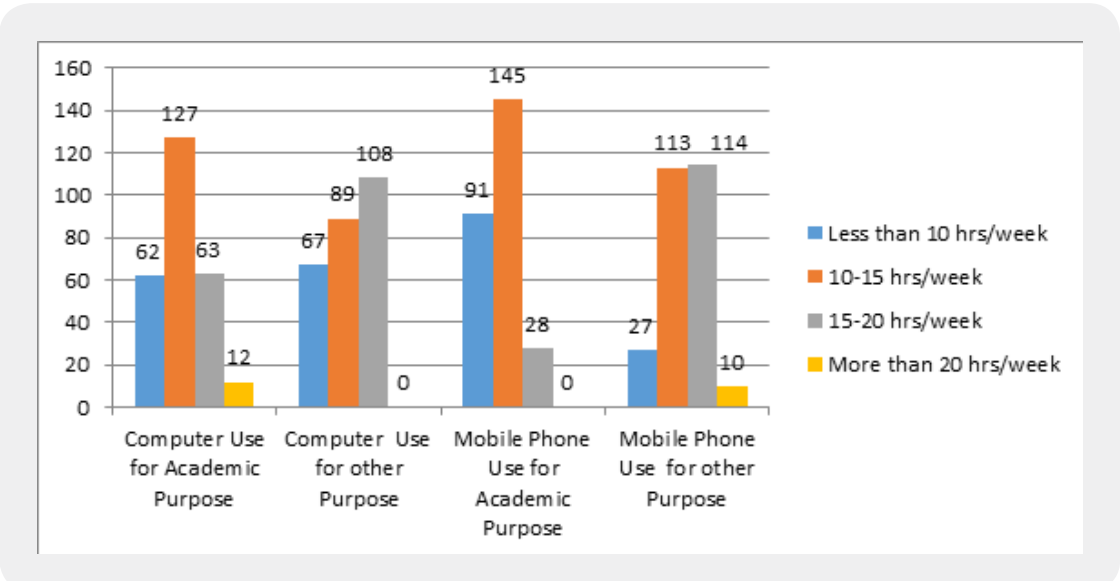

Figure 3: *Computers and Mobile Phone Use for Academic and other Purposes*

In addition to the assessment on the availability of mobile phones and computers supporting online teaching and learning, students' perception of the appropriateness of virtual platforms or applications for online teaching and learning was sought and analyzed using descriptive statistics (frequency and percentage) as presented below in Table 2.

Table 2: *Descriptive Statistics on Online Teaching Applications and Approaches*

Online Teaching APP/Approaches		Frequency	Percent
Valid	Audio Recording	1	.4
	Camtasia	3	1.1
	Google Meet	20	7.6
	YouTube	25	9.5
	WhatsApp	3	1.1
	Zoom	151	57.2
	VLE	61	23.1
	BigBlueButton	0	0
	WeChat	0	0
	Total	264	100.0

On the effectiveness of the mode of delivery of online lessons, out of many applications and approaches adopted by the teachers, the most prominent ones are mentioned here. Of the nine delivery approaches, teachings conducted through zoom are rated the highest (151 participants, 57.3%) followed by Virtual Learning Environment (VLE, 61 participants, 23.1%). None of the participants rated BigBlueButton and WeChat (0 participants, 0%) as an effective online mode of delivery.

Descriptive Analysis

Descriptive statistics (Mean and Standard Deviation) were computed using the Statistical Package for the Social Sciences (SPSS) version 22. The 5-point rating scale of the questionnaire has a Likert range of 1= strongly disagree to 5= strongly agree. As the figures generated from the descriptive statistics computation remain just a number without the level of interpretation scale, Gözde and Emel's (2016) [11] interpretation scale was adopted to interpret and generate information from the descriptive statistics computed on the respondents' ratings. Table 3 shows the interpretation scale of descriptive scores (means).

Table 3: *Interpretation Scale*

Score Interval (Mean)	Evaluation criteria
1.00-1.79	Very Low Level
1.80-2.59	Low Level
2.60-3.39	Medium Level

3.40-4.19	High Level
4.20-5.00	Very High Level

Ratings for strongly disagree fall in the range between 1.00-1.79, showing the lowest level of effectiveness of online classes. The ratings for disagree fall in the range between 1.80-2.59, showing a low level of effectiveness of online classes. Ratings for the neutral or medium level of effectiveness of online classes fall in the range between 2.60-3.39. Ratings for the agree to fall in the range between 3.40-4.19, indicating a high level of effectiveness of online classes while the highest level of effectiveness of online classes falls in the range between 4.20-5.00.

Results

This section presents the analysis of the data gathered through a survey questionnaire and their interpretations. As the study intends to explore XYZ medical college students' perception towards online classes during the Coronavirus pandemic lockdown, perceptions were sought on six different areas of online classes: Online Learning Facilities; Online Teaching; Online Communication in teaching; Online Learning Opportunities; Online Assessment, and; Impression on Online Learning.

Descriptive Statistics on all the Variables

Among the six variables (presented in Table 4), Online Learning Facilities reported the highest mean value (M: 3.39; SD: 1.029) followed by Online Teaching (M: 3.32; SD: 1.065). Impression on Online Learning reported the lowest mean value (M: 2.78; SD: 1.081) compared to other variables.

Table 4: *Descriptive Statistics on all the Variables*

	Mean	Std. Deviation
Online Learning Facilities	3.39	1.029
Online Teaching	3.32	1.065
Online Communication in teaching	3.04	.908
Online Learning Opportunities	2.99	1.087
Online Assessment`	3.08	1.045
Impression on Online Learning	2.78	1.081

Students' Perception of Online Learning Facilities

Of the six items identified for students' perception of online learning facilities (Table 5), 'I can access the Internet when needed for my studies' has the highest mean score of 3.73 with the standard deviation of 1.005, followed by 'My mobile phone supports relevant applications required for online lessons and activities with the mean score of 3.68 (SD: 1.037). It indicates that the students have a high level of internet coverage and connectivity, and relevant mobile phones to access the online teaching-learning processes. The support

and encouragement (M: 3.54; SD: 896), and the availability of relevant learning materials (M: 3.53; SD: .901) are also evident from the findings, signifying a high level of support and arrangement for online classes provided by the college. However, the mean score (M: 3.23; SD: 1.201) for "My laptop supports the online learning activities" at a medium level indicates the problems faced by the students in the online class. Among all the items, "Internet charges are reasonable and affordable" has the lowest mean score (M: 2.26; SD: 1.139), indicating high internet charges.

Table 5: *Descriptive Statistics on Students Perception of Online Learning Facilities*

Descriptive Statistics	N	Mean	Std. Deviation
I am able to access the Internet when needed for my studies.	264	3.73	1.005
My mobile phone supports relevant Applications required for online lessons and activities.	264	3.68	1.037
The college encourages online teaching and learning by providing necessary support.	264	3.54	.896
Relevant learning materials are available online.	264	3.53	.901
My laptop supports online learning activities.	264	3.23	1.201
Internet charges are reasonable and affordable.	264	2.26	1.139
Valid N (listwise)	264		

Students' Perception of Online Teaching

Students' perception of online teaching is evaluated using six items. From the perception of online teaching, the item 'equal participation is ensured in online teaching' is rated the highest (M: 3.74; SD: .978), followed by 'contents are not compromised in online teaching' (M: 3.73; SD: .992) and 'relevant platforms are used for online teaching' (M: 3.56; SD: 1.044). The scores indicate the assurance of equal participation, delivery of appropriate content, and the use of relevant online platforms for online classes. However, the scores also indicate students' low level of satisfaction with the timing of the online sessions (M: 2.99; SD: .1.111), teachers' use of online teaching skills and strategies (M: 2.95; SD: 1.131), and the achievement of lesson objectives (M: 2.95; SD: 1.136). The descriptive statistics on students' perceptions of online teaching are presented in Table 6.

Table 6: *Descriptive Statistics on Students Perception of Online Teaching*

Descriptive Statistics	N	Mean	Std. Deviation
Equal participation is ensured in online teaching	264	3.74	.978
Contents are not compromised in online teaching	264	3.73	.992
Relevant platforms are used for online teaching	264	3.56	1.044
Sessions start and end on time.	264	2.99	1.111
Appropriate teaching skills and strategies are adopted.	264	2.95	1.131

Lesson objectives are fulfilled.	264	2.95	1.136
Valid N (listwise)	264		

Students' Perception on Online Communication in Teaching

From Table 7, Online Communication in Teaching, the item 'Through online learning, I get enough time to interact with my lecturers and classmates' and 'I receive quick responses to my queries from my lecturers in online classes' has the highest mean scores (M: 3.20, SD: 1.097; and M: 3.20, SD: 1.096). The scores indicate that students are getting enough time to interact with the tutors and classmates and also receive quick responses to queries from the tutors in online classes. However, the items 'I am comfortable communicating electronically' and 'I can discuss with other students during online classes' are rated the lowest (M: 2.95, SD: 1.136; M: 2.52, SD: 1.031), indicating a medium level of comfort and engagement in electronic communication and class discussion.

Table 7: *Descriptive Statistics on Students Perception of Online Communication in Teaching*

Descriptive Statistics	N	Mean	Std. Deviation
Through online learning, I get enough time to interact with my lecturers and classmates.	264	3.20	1.097
I receive quick responses to my queries from my lecturers in online classes.	264	3.20	1.096
I can ask my lecturers questions and doubts at any time.	264	3.19	1.091
I actively communicate with my classmates and lecturers electronically.	264	3.18	1.086
I am comfortable communicating electronically.	264	2.95	1.136
I can discuss with other students during online classes.	264	2.52	1.031
Valid N (listwise)	264		

Students' Perception on Online Communication in Teaching

Descriptive statistics were computed to assess students' perceptions of online learning opportunities (Table 8). As presented in table 8, item 'I am able to complete assignments on time' is rated the highest (M: 3.59; SD: 954), whereas item 'I am able to manage my study time effectively' has the lowest mean value of (M: 2.51; SD: 1.031). With regard to the item rated the highest, it is indicative that most of the students are completing their assignments on time. However, the item that has the lowest mean score under online learning opportunities reveals students' study time management problems during the COVID-19 pandemic.

Table 8: *Descriptive Statistics on Students Perception on Online Learning Opportunities*

Descriptive Statistics	N	Mean	Std. Deviation
I am able to complete assignments on time.	264	3.59	.954
I possess sufficient computer keyboarding skills for doing online work.	264	3.28	.967
Online classes provide independent learning opportunities.	264	3.24	1.144
Online learning provides equal platforms for students to participate.	264	2.75	1.145
Online learning has fewer distractions than real-time teaching and learning in the classroom.	264	2.60	1.312
I am able to manage my study time effectively.	264	2.51	1.031
Valid N (listwise)	264		

Students' Perception on Online Assessment

To assess students' perception of online assessments, descriptive statistics were computed on six items as presented in Table 9.

Table 9: *Descriptive Statistics on Stu`dents Perception on Online Assessment*

Descriptive Statistics	N	Mean	Std. Deviation
Different online assessment techniques are adopted by my lecturers.	264	3.59	.954
Marks are awarded appropriately.	264	3.47	.889
Tests and quizzes are conducted regularly to check our understanding.	264	3.24	1.144
Appropriate assignments and exercises are provided for online learning.	264	3.02	1.067
Feedbacks and comments are provided on time.	264	2.95	1.136
Assignments and exercises are corrected and returned on time.	264	2.26	1.139
Valid N (listwise)	264		

From the various items under online assessment, 'Different online assessment techniques are adopted by my lecturers' has the highest mean score (M: 3.59; SD: .954). Although teachers are providing assignments and assessing them using different assessment techniques, they may not be returning the corrected works along with feedback and comments to students on time. It is evident from the scores received on these items. Correction and returning of assignments and exercises to students were rated the lowest (M: 2.26; SD: 1.139). Similarly, the item 'Feedbacks and comments are provided on time' has the second-lowest rating (M: 2.95; SD: 1.139).

Students' Impression on Online Learning

Table 10 illustrates the descriptive statistics of students' impressions of online learning. There are six items under this variable.

Table 10: *Descriptive Statistics on Students' Impression on Online Learning*

Descriptive Statistics	N	Mean	Std. Deviation
I feel that face-to-face contact with my lecturers is necessary to learn.	264	4.09	1.072
We have adequate online learning facilities	264	3.08	1.082
Lecturers have the skills and knowledge required to conduct online classes.	264	2.51	1.031
Learning is the same in class and at home on the Internet.	264	2.49	1.143
Online learning is an effective mode of education for college students.	264	2.47	1.140
Online classes are more motivating than regular courses.	264	2.07	1.020
Valid N (listwise)	264		

Of all the items under online learning, as well as the other five variables, the item 'I feel that face-to-face contact with my lecturers is necessary to learn' has the highest mean score (M: 4.09; SD:1.072). Under online learning, item 'We have adequate online learning facilities' is rated the second highest with a mean of 3.08 and a standard deviation of 1.082. Apart from these two items, all other items have mean scores ranging from 2.07 (lowest) to 2.51, indicating a low level of positive impression on tutors' online teaching skills and knowledge. In addition, it also indicates that face-to-face classes are more motivating, effective, and better than online learning [12].

Discussions and Conclusion

A descriptive survey research design was adopted in this study to evaluate undergraduate and graduate students' perceptions of online classes in XYZ College. The researchers adopted a convenience sampling technique to select research participants and a questionnaire was administered to collect data.

As computers, mobile phones, and network connectivity remain a basic requirement for online teaching and learning processes, the results revealed that the majority of the students had their own laptops and mobile phones. However, there were some students who did not have their own laptops or mobile phones. Possessing gadgets and having access to an internet connection may not help in achieving the objectives of online classes if students do not use them properly. To understand the amount of time spent by the students using these gadgets for curricular as well as co-curricular purposes, participants were asked to state the amount of time they spend per week. On average, time spent using computers and mobile phones for other purposes outweighs the time spent for academic purposes.

From many applications and approaches adopted by the teachers, the majority of the students rated zoom, followed by VLE, as highly effective for online classes. None of the participants rated BigBlueButton and WeChat as effective online modes of delivery. Despite the presence of relevant gadgets, internet coverage and connectivity, and support and encouragement from the college for online classes, the results indicate that students find the charges on the internet to be overpriced.

The results on students' perception of online teaching revealed that online teaching encourages equal participation among students, ensures maximum interaction between teacher and students, and guarantees quick responses to students' queries from the lecturers. Moreover, the results also indicate that online teaching is not compromising the content of the lesson. On the contrary, the scores also indicate students' low level of satisfaction with the timing of the online sessions, teachers' use of online teaching skills and strategies, and the achievement of lesson objectives. Further, the results revealed that students do not feel comfortable communicating with their tutors and mates electronically. The results on online learning opportunities revealed that most of the students are able to complete assignments on time. However, the item that has the lowest mean score under online learning opportunities reveals students' study time management problems during the COVID-19 pandemic.

On assessment, results show that students are assessed using different assessment techniques. Conversely, the results also indicate that the tutors may not be returning the corrected works along with feedback and comments to students on time. Despite having adequate online learning facilities, almost all the students rated face-to-face contact classes as more motivating, effective, and better than online classes. In short, students perceive online learning as being less academically rigorous than their experiences in the face–to–face education.

Recommendations

Given the above findings, the researchers propose the following recommendations to the government, policymakers, institutional authorities, educators, and students:

- The government must assess, plan and prepare to provide additional funding to schools and colleges to support them during a similar pandemic in the future.
- To ensure continuity in teaching and learning processes during future health emergencies, there is a need for a proper and uniform academic plan for the universities and colleges.
- A college/university must come up with a comprehensive student database so that future contingency plans can be prepared immediately.
- College/University must survey to understand whether students have the access to the internet or other learning avenues and facilities. Based on these findings, the college may arrange digital devices for less well-off students or look for the relocation of the students who do not have access to the internet.
- Staff (both academic and non-academic) must be provided with training on methodologies and techniques for online classes.

- The infrastructural facilities must be upgraded to support and regulate digital learning processes during future health emergencies.
- Importantly, students must be provided with media literacy classes to help them become wise consumers of media.

Finally, the findings of this study were gathered only from one Business College using a descriptive survey research design. It is advisable to use other suitable research designs and involve more colleges to acquire more authentic and generalizable findings.

Bibliography

1. First confirmed Coronavirus case in Bhutan (March 6, 2020). Kuensel.

2. COVID-19 pandemic in Bhutan. (2020, November).

3. Ministry of Education. (2020, June). Annual education report 2019-2020. Policy and Planning Division, Royal Government of Bhutan.

4. Schleicher, A. (2020). The impact of COVID-19 on education insights from education at a glance 21. 2020. OECD.

5. Royal University of Bhutan (2020). RUB Response Plan for COVID-19.

6. Webster, J. & Hackley, P. (1997). Teaching effectiveness in technology-mediated distance learning. *Academic Management Journal, 40*(6), 1282-1309.

7. Bartolic-Zlomislic, S. & Bates, A. (1999). Investing in on-line learning: Potential benefits and limitations. *Canadian Journal of Communication, 24*(3), 349-366.

8. Iyer, P., Aziz, K. & Ojcius, D. M. (2020). Impact of COVID-19 on dental education in the United States. *Journal of Dental Education, 84*(6), 718-722.

9. Thurmond, V. (2003). Examination of interaction variables as predictors of students' satisfaction and willingness to enroll in future web-based courses while controlling for student characteristics. In C. Crawford, D.A.Willis, R. Carlsen, I. Gibson, K.McFerrin, Jerry Price, *et al*. (Eds.), Proceedings of Society for Information Technology and Teacher Education International Conference 2003 (pp. 528-531), Albuquerque, NM. Chesapeake, VA: Association for the Advancement of Computing in Education.

10. Glass, G. V & Hopkins, K.D. (1984). *Statistical Methods in Education and Psychology*, 2nd 7. Edition. Englewood Cliffs, NJ: Prentice-Hall.

11. Gözde, T. Ç., & Emel, L.O. (2016). Big five and organizational commitment - the case of Turkish construction professionals. *Human Resource Management Research, 6*(1), 6-14.

12. Ministry of Health (2020). Clarification: Extended period for home and facility quarantine.