Students' approach towards online learning during Covid-19 period: A public university perspective

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Article type
Research paper
Received
20 April 2024
Revised
08 July 2025
Accepted
15 October 2025

International Journal of Information and Knowledge Studies, 5(1), pp. 46-63
ISSN 2789-5920
E-ISSN 2790-3265
https://doi.org/10.54857/kpmd4152

Published by Bangladesh Institute for Information Literacy and Sustainable Development

Abstract

Purpose: To identify how students at the public universities used to conduct online learning during covid-19 pandemic and the effectiveness of the platforms where they took their learnings from.

Methodology: The study was conducted targeting the students at the University of Dhaka and the sample size was 147. The data were collected through Google form. Data analysis was done with SPSS and Microsoft Excel.

Findings: It had been revealed from the study that more than two thirds of the participants were used to pursue online learning and among them the significant portion, which is around 75%, preferred Coursera, Udemy and Udacity as online learning platforms. Less than half of those enrolled in different courses on these platforms had managed to successfully complete the courses and rest could not. 54% of respondents suggested that video quality and teaching systems of the online learning platforms are to be improved to attract more students towards virtual education.

Originality and Practical Implications: This one was the first attempt to observe the tendency of public University students regarding online learning during the outbreak of covid-19. The online learning platforms mentioned in the questionnaire, along with the respective educational institutions, will get useful insight from the study to enhance their level of services to the prospective aspirants.

Limitations: The study was confined within the University of Dhaka. As the period of the study was in covid-19, it was quite difficult to reach out to the students other than those who are easily reachable by the researchers.

Keywords: Online learning, Covid-19, students, public university, Bangladesh, online learning platforms.

1. Introduction

Human civilization is continuously developing with the ongoing changes of human urges and demand. In order to meet the needs of people around history, the scholars and notable individuals of respective periods discovered many different things. Teaching and learning systems are the two indispensable parts which are continuously playing important roles in shaping human history. For a significant period of time, people lived in such societies that used to practice Small-Hunter gathered culture (Eskelson, 2020).

In prehistoric times, learning occurred primarily through physical gestures and body movements since spoken language had not yet developed. The earliest evidence of organized education dates back to Egypt's Middle Kingdom, where formal instruction was provided under the supervision of Kheti, the treasurer of Mentuhotep II (2061–2010 BC) (Parsons, n.d.). Until around 1779, education continued in a face-to-face format. However, as the need to access knowledge from distant instructors became more evident, a new system known as Distance Learning began to emerge.

Distance Education (DE) is defined as a mode of learning where teachers and students remain physically separated but are connected through various technological tools (Berg & Simonson, 2023). Its development can be traced back to the 18th and 19th centuries, when it was seen as a more egalitarian means of accessing education (Casey, 2008). Broadly, the history of distance education can be categorized into three stages: Correspondence Education, Visual-Auditory Education, and Computer-Based Education at the macro level, and five technological generations at the micro level (Bozkurt, 2019). Each stage was shaped by the dominant communication technologies of its time.

Initially, correspondence educators aimed to reach learners who could only study remotely through written communication (Nasseh, 1997). Most of these learners were adults balancing education with social, professional, and family responsibilities (Smaldino et al., 2000). The second stage began in the early 1920s, marked by the introduction of audio technologies like radio and later, audiovisual tools such as television (Bozkurt, 2019; Smaldino et al., 2000). The next major leap occurred in the late 1980s and early 1990s, with the emergence of fiber-optic technology that enabled high-quality, two-way audio and video interactions—paving the way for modern education systems. Since the mid-1980s, both credit and non-credit courses have been offered through online networks (Smaldino et al., 2000), leading to today's advanced form of Online Education.

Online learning—also referred to as e-learning, digital learning, or computer-based instruction—is a form of education where content and interaction occur via digital platforms designed to enhance the learning experience (Clark & Mayer, 2016). This method has gained significant attention due to its convenience compared to traditional

classroom settings. Engaging features such as narrated animations, instructional videos, hypertexts, educational games, and simulations have made it a popular choice for learners (Clark & Mayer, 2016; Mayer, in press).

Online education has become a key component of higher education (Kim & Bonk, 2006; Al-Adwan & Smedley, 2012), education of the adults (Cercone, 2008; Olesen-Tracey, 2010), and even school-level instruction (Cavanaugh, Barbour, & Clark, 2009; Nicholas & Ng, 2009). According to Liang and Thang (2012), the fundamental characteristics of online learning include accessibility, flexibility, interactivity, and collaboration. Despite its growing popularity, the quality of online courses varies significantly across different providers (Liang & Thang, 2012). While learners often appreciate the comfort and reduced pressure of online environments, they also face challenges such as higher failure rates (Babayigit et al., 2020).

The COVID-19 pandemic, beginning in early 2020, dramatically accelerated the adoption of online learning and transformed educational environments globally (Xiong et al., 2021). As physical campuses closed, institutions urgently turned to virtual platforms to sustain teaching and learning (Dhawan, 2020). Alongside formal classes, many individuals started acquiring new skills through Massive Open Online Courses (MOOCs). During the height of the pandemic, interest in online education surged, as reflected in the large number of enrollments in free online courses (Shah, 2020).

In Bangladesh, several universities partnered with MOOC platforms to provide students with free access to diverse online learning opportunities. However, the proliferation of new learning platforms offering varied course types and features highlighted the need to better understand students' perceptions of these platforms. Consequently, this study seeks to explore university students' attitudes toward the quality and characteristics of different online learning platforms.

2. Literature review

The widespread use of computers, mobile devices, the internet, social media, and various online platforms have often been criticized for diminishing young learners' intellectual capacities and critical thinking skills. Bauerlein (2008) argues that extensive interaction with digital technologies increases screen time without enhancing real knowledge or creativity. Instead, it may hinder the generation of original ideas and encourage impulsive social behaviors. However, this argument contrasts with the belief that the World Wide Web (WWW) can play a positive role in promoting learning and skill development. According to Appana (2008), computers and the internet have become essential tools in online learning—a form of education that relies on the WWW for communication between learners and instructors. This system supports the development of lifelong learning opportunities and helps students stay updated with the evolving knowledge-based society.

Keengwe & Kidd (2010) investigated the historical progression of online education, identifying the challenges educators face, the changing roles of faculty members, and effective strategies for transitioning from traditional classroom instruction to online platforms. Similarly, Sun & Chen (2016) examined the evolution of online learning and the impact of technology on online courses. Their study emphasized the importance of cognitive presence, teaching presence, instructional design, interactivity, collaboration, and learning communities. They concluded that the success of online learning depends on several factors: high-quality course design, active communication between instructors and learners, a supportive learning community, and technological advancement. Alexander (2013) compared the usability of printed materials and online video tutorials in completing computer-based tasks. The study, conducted with 28 undergraduate students randomly selected from a private university, revealed that learners retained information more effectively after watching video-based instructions than after reading print materials. The analysis of usability factors—such as convenience, ease of learning, usefulness, and personal satisfaction—showed that students preferred video-based learning for its clarity and engagement. Ozan & Ozarslan (2016) explored learner behavior while watching online video lectures to understand viewing preferences. Using one-way ANOVA, chi-square, and descriptive statistics, their findings indicated that students who watched entire interview-style lectures performed better on final exams. The results confirmed a strong correlation between full engagement with instructional videos and higher academic achievement. Bailey & Card (2009) conducted interviews to identify essential practices for effective online teaching. Their findings highlighted the importance of fostering relationships, maintaining engagement, ensuring prompt communication, using technology effectively, setting high expectations, and offering flexibility. Zheng et al. (2015) investigated student motivation and learning patterns in Massive Open Online Courses (MOOCs). Their study revealed that learners enrolled in MOOCs for diverse reasons, including filling knowledge gaps, career preparation, professional growth, curiosity, and college readiness. Many participants viewed MOOCs as opportunities to study subjects not easily accessible through traditional education, enabling them to achieve personal and academic goals. Yang & Cornelius (2004) used a qualitative approach to explore students' perceptions of online education quality at two universities. Positive experiences included ease of access, flexibility, affordable costs, and well-designed course interfaces. Conversely, delayed instructor feedback, insufficient technical support, and lack of self-motivation emerged as key drawbacks. Fedynich et al. (2015) assessed graduate students' perceptions of online education through a study involving 249 participants from master's and doctoral programs. Results showed that 60% of students had completed multiple online courses, 24% had completed at least one, and overall satisfaction levels were high.

Despite the growing global research on online learning, there remains a lack of empirical studies in Bangladesh focusing on students' attitudes and experiences with this educational mode. The sudden transition to online learning during the COVID-19 pandemic exposed several challenges unique to Bangladeshi students, such as poor internet connectivity, limited digital literacy, accessibility barriers, and socio-economic constraints.

Therefore, further localized and contemporary research is needed to evaluate the effectiveness of online learning in Bangladesh. Addressing these gaps will help identify how online learning systems can be optimized to meet the needs of Bangladeshi learners and promote equitable access to high-quality education in an increasingly digital age.

3. Research objectives

As the study was conducted during the period of covid-19 on online learning, the main objectives were how those students felt their online learning experience. Besides following purposes had been considered as well:

- The platforms are mostly used for watching videos
- The portion of the students who are interested in online learning and the reasons for not being interested in online learning
- Things which are mostly learnt from online learning platforms
- Positive experiences from online learning
- The barriers those the students experienced during learning and the recommendations for online learning platforms.

4. Methodology

An online survey was conducted targeting the students of all the three faculties (Arts faculty, Business faculty and Science Faculty) of the University of Dhaka. This was the best option to reach students of all faculties during pandemic time.

4.1 Questionnaire development

A structured questionnaire was developed using Google Forms to collect data from students. The questionnaire was pilot tested before mass distribution to students. All of the questions were developed by investigators. There were four sections in the questionnaire- Academic information (2 questions), Biographic information (2 questions), video watching behavior (4 questions), online learning behavior (14 questions)

4.2 Study population

The target population were the students of the University. The University has approximately 37 thousand students. The questionnaire was distributed using Facebook, Messenger, WhatsApp, Instagram and Gmail.

4.3 Data collection

The data collection procedure took more than seven weeks, from the first week of December 2020 to the third week of January 2021. The link of this questionnaire was posted in different online students' groups of Dhaka University. Some students, who were the social media friends of the data collectors, were asked to participate in the survey with given link on messengers. More than 500 students were reached but only 153 students participated in the survey. Out of 153 participants 147 were found usable.

4.4 Data analysis

Data obtained from this questionnaire was analyzed using SPSS and MS Excel. Random sampling technique was followed in data collection. At first, the data were collected through online Google form. Then the textual data were codified with numeric digit in order to make it usable in SPSS. Then finally, the numeric tables were developed using this software tool. The remaining graphical representation of the output was made using Microsoft Excel.

5. Findings of the study

5.1 Demographic information

It is evident from table-1 that the biggest portion of the participants was from 23-25 age group (65.3%) then the age group of 20-22 holds the second in this regard while only (1.36%) participants' age was 19. Most of the respondents, which is 118 in this study were male and the rest 29 were female (Table-2).

Table-1: Frequency of ages

Age range	Frequency	Percent
19	2	1.36
20-22	41	27.9
23-25	96	65.3
26-28	8	5.44
Total	147	100.0

Table 2: Gender of the participants

Gender	Frequency	%
Male	118	80.3
Female	29	19.7
Total	147	100.0

5.2 Academic information

Students from the faculty of arts were the highest in number, 46.26% whereas the students from the different institutes were the least (Table-3)

More than half of the students were from masters that is 55.1% among the total respondents, 17.1% from 4th year, 12.9% from 2nd year, 8.2% from 3rd year and only 6.1% were from 1st year (Table-4).

Table-3: Faculty-based distribution

Faculty	Frequency	%
Arts	68	46.26
Social Science	17	11.56
Business Studies	23	15.65
Science	16	10.88
Engineering and Technology	9	6.122
Biological Science	9	6.122
Institute	5	3.401
Total	147	

Table-4: Year-based distribution

Academic Year	Frequency	%
1st year	9	6.1
2nd year	19	12.9
3rd year	12	8.2
4th year	26	17.7
Master	81	55.1
Total	147	100.0

5.3 Platforms used for streaming video

About 91% of the participants of this survey say that they use YouTube for watching video while Facebook holds second position securing and other social media like Instagram, Vimeo, and Daily Motion and others are less useful for them in regard to fulfilling video related interest (Figure-1).

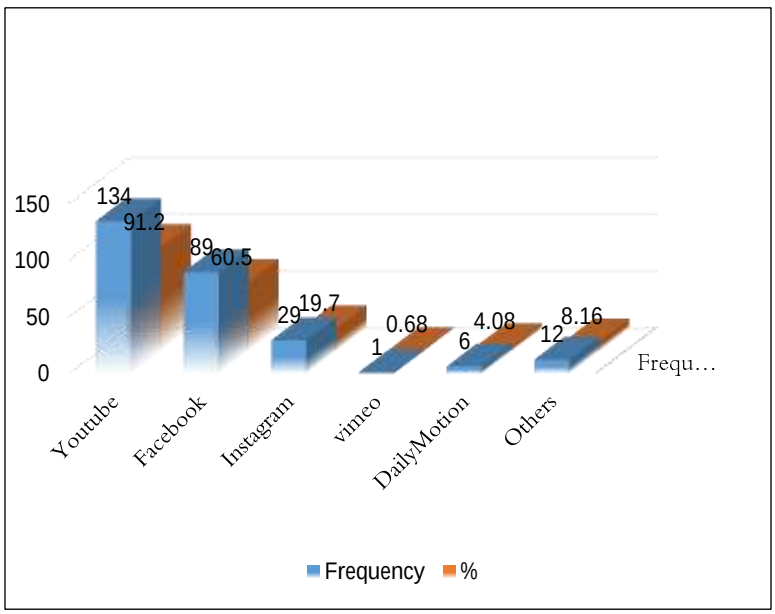


Figure-1: Platforms used for streaming video

5.4 Mostly used platforms

It is seen from table that the biggest portion of the participants, 62%, spend most of their social media time behind You tube browsing, followed by the Facebook nearly 29%, It is also evident from the study that students do not show much interest in using other form of social media (Table-6).

Table-6: Platforms which are mostly used for watching videos

Social media platforms	Frequency	Percent
YouTube	92	62.6
Facebook	32	21.8
Instagram	1	.7
Vimeo	1	.7
Dailymotion	1	.7
Others	3	2.0
Total	130	88.4

5.5 Proportion of getting used to online learning

It is clear from the table that most of the students were used to interacting online ways learning. It depicts that 115 (78%) were anyhow connected with online learning and rest of them were not used to that form of learning (Table-7).

Table-7: proportion of students who are used to online learning

Online Learning Habit	Frequency	%
Yes	115	78.2313
No	32	21.7687

5.6 Reasons behind not being used to online learning

Though all the participants in the study say that they use different video platforms which can't be done without getting into online, significant portions still lag behind online learning. 22% of the total participants were not used to online learning (Table-8).

Table-8: Reasons for not getting used to online learning

Reasons	Frequency	%
Having no interest	15	10.2
Not having devices	5	3.4
Poor network	20	13.6
Didn't think about	14	9.5
Too much price in the Learning platform	10	6.8
Total	64	43.5

5.7 Preferred medium

Among 147 participants, 71 (43%) students prefer text-based blog as form of online learning, 63 (48%) prefer video and rest prefer audio based online learning (Figure-2).

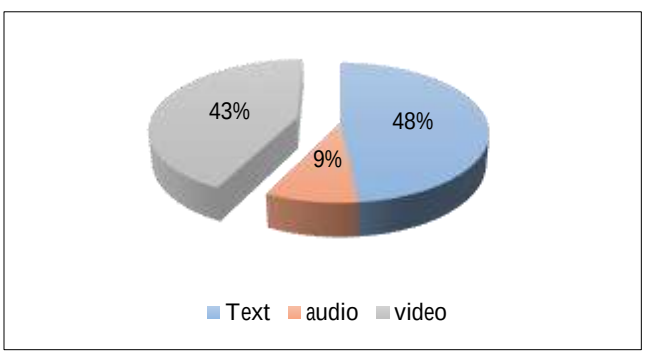


Figure-2: The medium through which students perform their online learning

5.8 Preferred online learning platforms

It is seen from the table Course era is the mostly used platform for online learning, 42% of students use it where Khan Academy, which is used by almost 14%, is second in this regard, Udemy is used by 15 students, and others use other online learning platforms. Others include 10-minute school, Onnorokom Pathshala, both are Bangladeshi platforms (Figure-3).

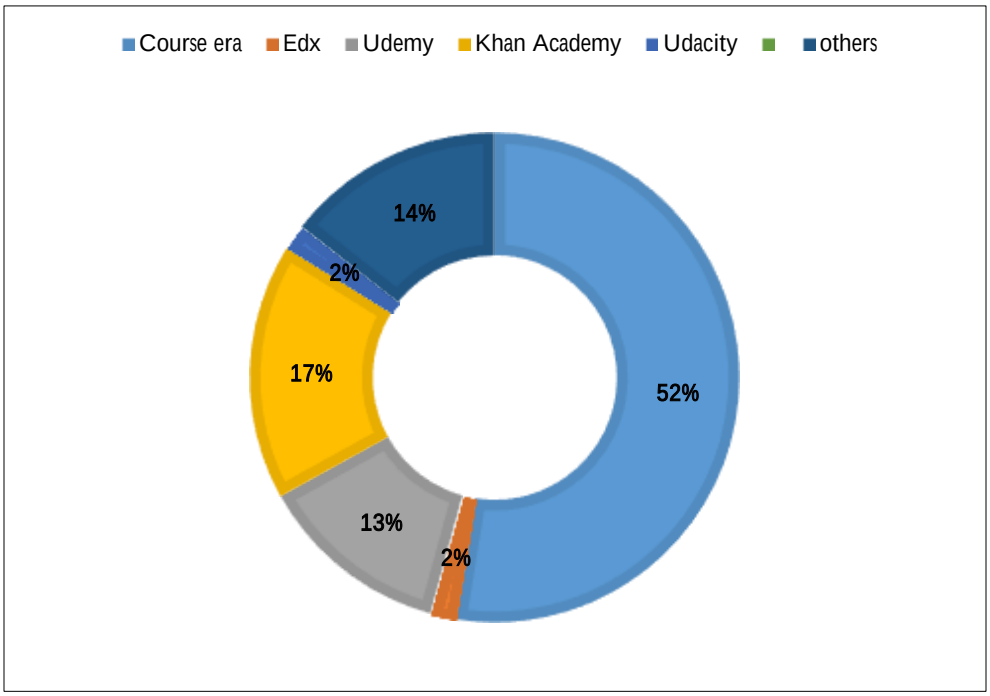


Figure-3: Proportion of using different platforms for online learning

5.9 Number of enrolled courses

The table clearly indicates that almost 50% of the respondents had enrolled in the 0-5 courses while the number of enrolled on courses of 10% was 6-10, one student got 15 courses and surprisingly there was a student among the respondents who had enrolled in 15 courses (Table-9).

Table-9: Number of enrolled online courses

Number of courses	Frequency	%
0-5	26	17.7
1-5	67	44.9
6-10	13	9.9
10-15	4	1.4
More than 15	1	.7

5.10 Position in online learning

It is a common phenomenon that most of the enrolled courses remain unaccomplished in many cases. Same scenario has been revealed in the study. It can be observed that 39.5% of students had enrolled on the courses but did not complete even a single course. Only 24.5% of students who enrolled in different courses have certified and neither enrolled nor showed interest (Table-10).

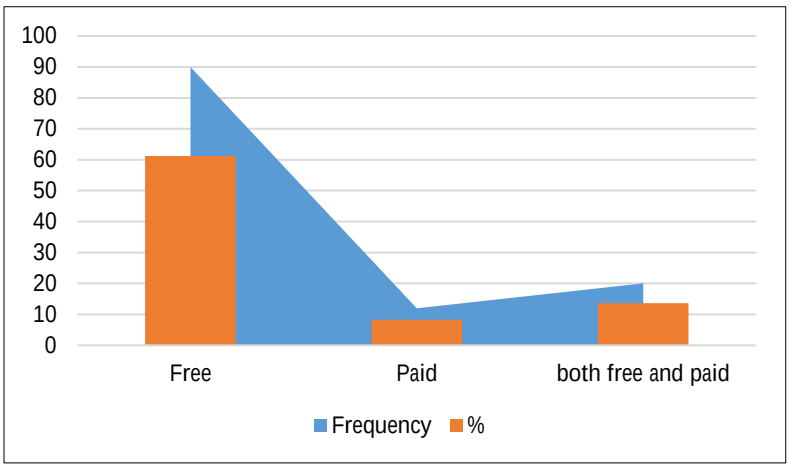
Table-10: Students' different positions in online learning

Status	Frequency	%
Enrolled but not completed yet	58	39.5
Not enrolled yet	19	12.9
Enrolled, completed but not certified	16	10.9
Enrolled, completed and got certification	20	13.6
No interest	18	12.2
Total	131	89.1

5.11 Enrolment type

The table reflects the tendency of students' interest towards online learning. It can be seen from this study that the highest portion, which is also the maximum, of students have taken only free courses, 13.6% got both free and paid courses and rest 8.2% did paid course only (Figure-4).

Figure-4: Which form of courses did the students get enrolled in?



5.12 Things to be improved by the online learning platforms

It is seen from the table that more than 40% think the teaching system should be upgraded while 12.9% think Video quality should better than present situation. 13.6

showed objections against Exam system and only 8% think certification should be convenient to the users (Table-11).

Table-11: Things to be rectified

Weaknesses of platforms	Frequency	%
Video Quality	19	12.9
Teaching System	60	40.8
Exam System	20	13.6
Easing Enrollment Process	24	16.3
Certification	12	8.2
Total	135	91.8

5.13 Frequency online learning for different purposes

It is evident from figure-5 that department related things are mostly learnt through online learning whereas Science related things are the least learnt through online platforms (Figure-5).

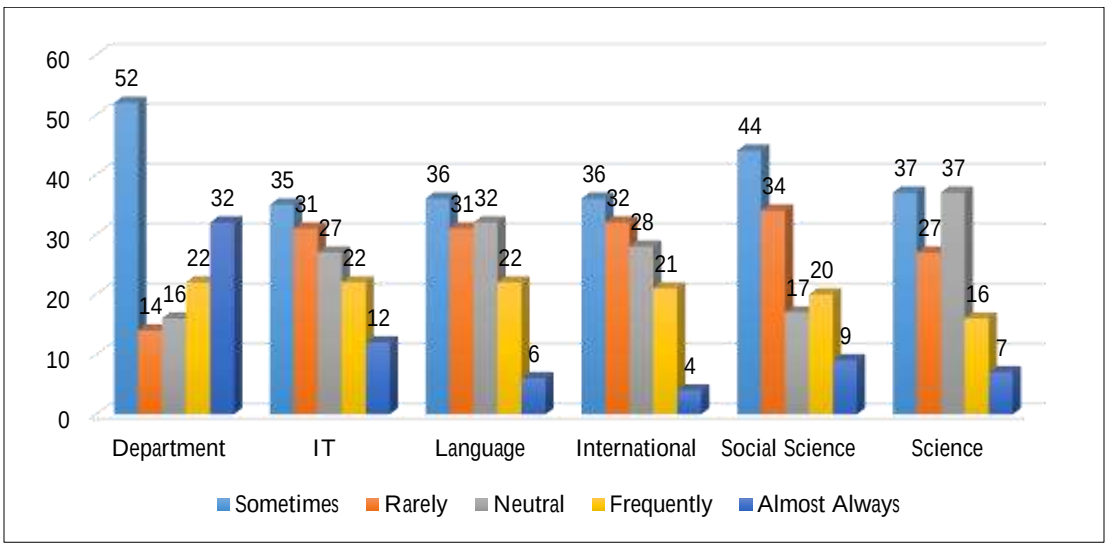


Figure-5: The areas which are mostly learnt through online platforms

5.14 Stimulating factors for online learning

The following table reflects the most stimulating factors that create students' interest in online learning. It has been illustrated in the table that Time saving, and the opportunity of learning are the two most considerable factors for online learning.

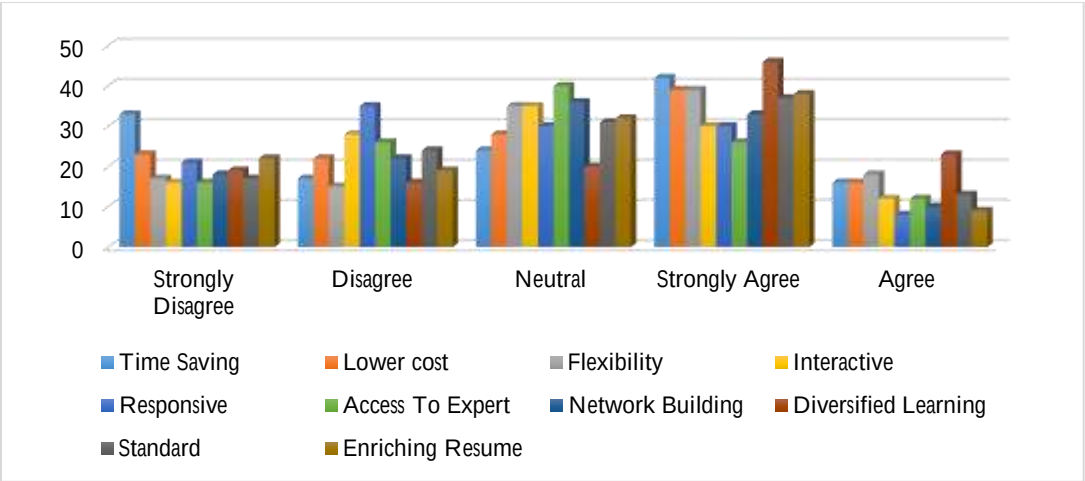


Figure-5: The factors for which students head toward online learning

5.15 Barriers for online learning

It can be observed from the following figure that, Networking and Language issues are the two most common barriers for online learning. 51 and 39 students extremely encounter the issue of networking and language while trying to study with online platform.

Table-12: Things which negatively affect online learning

Barriers	Language	Technical	Network	Device	Cost	Paying Money	Previous experience
Extremely	39	26	51	30	30	30	33
Moderately	30	36	33	39	35	34	37
Neutral	27	27	22	24	30	29	26
Somewhat	22	28	15	16	14	12	12
Not at all	14	12	11	17	17	20	18
Total	132	129	132	126	126	125	126

5.16 chi square test

The chi square value $x^2 = 1.261$ and the p value based on gender-based comparison is .780 which means there is significance relation between male and female respondents on the basis of position of online learning.

Table-13: The significance relationship between male and female's position in online learning

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.761[a]	4	.780
Likelihood Ratio	1.618	4	.806
Linear-by-Linear Association	.980	1	.322
N of Valid Cases	130		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 3.23.

6. Discussion

This study aimed at identifying the key factors which influence online education among students, focusing on platform usage, barriers to adoption, and the types of skills enhanced through online learning. The study revealed that YouTube is the most commonly used platform for watching educational videos, with over 90% of respondents indicating its use. Learners prefer interview-style video lectures and that full engagement with such videos significantly impacts exam performance (Ozan & Ozarslan, 2016). Regarding the second objective, the study found that approximately 80% of participants engaged with online learning to some extent. However, poor network connectivity and a lack of interest in e-learning were identified as significant barriers. This is consistent with the findings of (Yang & Cornelius, 2004), who reported that poor internet connections, delayed feedback, and a lack of technical support negatively impacted students' online learning experiences. Besides, language barriers were noted as a challenge in this study. Students highlighted that understanding course content often depended on the clarity of language and instruction (Fedynich et al., 2015). The study showed that 39% of students used online platforms to enhance departmental skills, while 22% used them for language learning. In contrast, science-related subjects were found to be the least effectively learned online. Well-designed content and interactive learning communities are essential for effective online education (Sun & Chen, 2016). Social science topics were identified as particularly engaging for online learners in this study. This aligns with Alexander's (2013) studies. He found that video-based instruction led to the enhancement of short-term retention for tasks that involved conceptual and theoretical content. It is understood from the outcome that subjects relying on discussion, theory, and conceptual understanding may be better suited for online delivery. The time-saving nature and the ability to learn anything were identified as the most appealing aspects of online learning. The same finding was shown in the study of Appanna (2008), who noted that online learning provides flexible, lifelong learning opportunities that allow students to keep pace with a knowledge-based society. On top of that, the

convenience and accessibility highlighted by this study align with Keengwe & Kidd (2010), who emphasized that efficient strategies for online teaching must leverage these advantages. The study found that students believe the teaching system should be improved to enhance online learning services. Bailey & Card (2009) emphasized effective online teaching. It relies on factors such as timely communication, engagement, and organization. To address this, educational platforms should focus on providing structured content, responsive feedback, and interactive learning environments.

7. Implications of the study

This study highlights several implications for future research:

- Localized research on online learning
  Given the lack of studies focusing on Bangladesh, future research should investigate how factors like internet infrastructure, socio-economic conditions, and language barriers specifically impact Bangladeshi students' online learning experiences.
- Comparative studies
  Comparative studies between urban and rural regions within Bangladesh can shed light on disparities in access to and engaging with online learning platforms.
- Effectiveness of subject-specific online learning
  Research should explore why certain subjects (e.g., science and mathematics) are less effectively learned online and identify strategies to address these challenges, such as incorporating more interactive or simulation-based tools.
- Impact of multilingual content
  Investigation on the impact of offering multilingual instructional content could provide insights into overcoming language barriers and improving comprehension for non-native English speakers.
- Longitudinal studies on learning outcomes
  Long-term studies through assessing the effectiveness of online learning on academic performance and skill development can help measure the sustained impact of online education.

By addressing these areas, future research can contribute to a more comprehensive understanding of the challenges and opportunities in online learning, particularly in the context of developing countries like Bangladesh.

8. Conclusion

As technological innovations are booming rapidly at a greater rate, new sorts of learning areas, related to the ongoing newly emerged technologies, are evolving around the world. Such scenario has unveiled the necessity of gaining knowledge to keep pace with the world in order to regulate regular life regarding activities and to be

fit for the career world. Top class universities around the world are making their classes available online to make people eligible all around the world to gain experience of those dreamed environments along with the way of learning their expected areas of interest regardless of academic background, profession and location. Many individuals are also approaching online platforms such as YouTube, Facebook etc. to make the people know what they are competent on. But the learners tend to get known to those courses which provide them with the best quality with minimum amount of time, where they can learn desired things spending minimum amount of time.

So, the course providers need to understand the people's demands and provide the best things to be available to the tech world. The course made in the western world are more standard than those of Indian sub-continent. In Bangladesh, the courses provided at individual level along with universities are not that much. Even not a single University of Bangladesh can be found that released its courses on online which lags the people of this country behind. On the other hand, there is not much attempt can be observed from the respective authority, government, for example, that can steer up the universities to make quality contents for the layman level people of this country. So, there is utmost necessity to make the university classes available online which will make teachers obliged to conduct better classes for students. This will eventually lead to overall development of education system of the country.

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