Online Classroom Platforms: A Comprehensive Study in the Perspective of Bangladesh

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Abstract

Education is the backbone of a nation. So every nation emphasizes it with their highest value as development is mostly dependent on education. In the modern era, online classroom conditions naturalized through specialized video conferencing applications. There may be students and instructors to take the class as a traditional classroom. There is at least one current tutor present, and the lesson is completed in real-time at a fixed time, with the students being present. Here, students and teachers can genuinely engage in class. However, a class does not always need a live teacher to inspect students; they can also proceed to their desired place. Sometimes there may be no teacher at all. This type of online classroom is an unsupervised online classroom. It is distinguished by ready-made lessons that the students can receive without the help of an instructor. Examinations can also be automated in this system. So, in any situation and place, an online class can be taken. At the time of COVID-19, all over the world, people are in crisis and are locked down in their houses. The traditional educational system is facing more trouble to continue its activities. In the traditional system, some teachers used to teach various subjects in front of their students in an educational institution.

Index terms — education, online, classroom, COVID-19.

1 Introduction

ducation has changed a lot in the last couple of decades. Technology has completely changed our learning experience and has made it more fruitful. Education must originate with these new learning styles. For instance, a popular way of Accommodating these new learning styles is through virtual classrooms or online classrooms. An online classroom is an educational ambiance where users can interlude, convey aspects, and concern with educational resources at the time of performing in a virtual place. The medium is mostly through a video-conferencing application. It allows many participants through the internet to be connected at the same time from anywhere in the world. An online classroom is also called a virtual learning environment (VLE). With the online environment, concepts and collaborators are never far away. Mobile accessibility also grants participants greater flexibility. Students are working with each other more than ever because of virtual classrooms. One of the identifying features of separating online learning conditions from typical classrooms is the flexibility of the way lessons are offered. In traditional learning, students sit in a classroom, listening to a teacher, and taking notes. On the contrary, virtual classrooms give learners greater liberty to engage with the components creatively and react based on their inputs. Traditional learning tends to be synchronous, where virtual learning seems to be asynchronous. Online classrooms deliver new modes for tutors to give radiating, amusing, and efficient learning resources. So, innovation is the hallmark of online learning-for, both learners and lecturers. Some interactive online classrooms are Gamified lessons, flipped classrooms, and scenario learning. And there are also a lot of virtual classroom options available with both free and cost. Today all over the world people are facing much trouble for the pandemic COVID-19. People are locked down in their homes. And the virus is spreading at high
speed. As per the last update of the World Health Organization on 20 April 2020 (06:00 GMT+6), there are 2314621 confirmed cases, 157847 confirmed deaths and 213 countries, areas, or territories are with COVID-19. Every institutional function, excluding emergency services and limited hour bank services, has been closed for an uncertain time. There is no perfect assumption when to get on the daily activities [1] We have started with the Introduction part in Section I. In the next sections, we have discussed the online classroom and its benefits, limitations, and future. Section III represents the insights of mobile and internet in Bangladesh. Section VI introduces our online educational activities in Bangladesh. In Section VIII, we have made a comparison of various online classroom platforms in detail. Section IX concludes the paper.

2 II. The Online Classroom

3 The Online Classroom

An online classroom is an internet-based, flexible, affordable, and non-restricting learning environment that sanctions teachers and students to cohere, interlude, assist and illustrate conjectures. It has tumbled most of the usual obstructions to synchronous learning: cost, distance, and timing. An online classroom should have some features [35][3]. Such as:

- Video conferencing capability, so lecturers and learners can see each other.
- Audio conferencing ability to hear each other.
- Real-time text chats, for messaging each other.
- Interactive online whiteboard to interact much more collaboratively and not just rely on video or audio.
- Library of learning materials so that teachers can provide more relevant, rich, and structured lessons to the students.
- Teacher tools and controls just like in a physical classroom to monitor the class and are much more feasible online.

4 III. Benefits of Online Classroom

There is much coherence between a traditional education system and an online classroom. Learning through an online classroom gives many advantages that the campus-based system doesn’t provide. A few have made a list of top benefits [3] [33] [34] [32]. For instance:

- Access to Class from Anywhere: In any situation, classes can be taken online at any place. All one needs is a laptop or other digital device.

5 IV. Limitations of Online Classroom

Online education has many profits to deliver, still unluckily; there are some losses also. Demerits are not much as the merits without doubt, but there are indeed some views of the online classroom that some sharers might take as inadvertence. Few main limitations have made a list [4]. Such as,

- Higher Internet Cost: Strong internet availability is the foremost thing to be in the online classroom. But it is a matter of sorrow that it is not possible to provide a reliable connection all the time and everywhere. But it cost much to get this kind of connection.
- Additional Digital Training: Additional digital training is another limitation of the online classroom.
- Perceiving online learning completely is essential for the online classroom. Some of the tutors and students do not maintain proper lessons of using the given e-Learning gadgets. So, they face difficulties to interact and attain these gadgets.
- Infrastructure Challenges: There is a requirement of using advanced technology and proper network infrastructure for establishing an online classroom.

We have many affordable and feasible resolutions for the ascending necessity and adaptability of online classes. But some of the organizations might not propose to offer it for its high-cost installation.

6 Future of Online Classroom

In the upcoming time, we hope for the online classroom to spread more AI and VR. As the virtual classroom is enduring to spread, we expect to have more innovation in emerging technologies. At the forefront are Artificial Intelligence and Virtual Reality. While these are still searching their footing, they are on their way and will have numerous applications across learning platforms in the coming years. There has been much enhancement in the improvement of electronic media from the beginning of the last century. We have surpassed the obstacles of costly and speedy internet. So, many neoteric organizations have manifested to fully incorporate e-Learning through an online classroom. So that they can simplify learning and development for both employees and learners. Now we can have field visits just by sitting in a classroom. Nevertheless, tech organizations such as Google have now made it true with their virtual reality system. Technological advancements are now switching educational stages. It is also making them free from time and physical location. Today, online classrooms have already stepped into the learning world. A lot of innovations are on their way of coming to the education sector with these. There will be a classroom scenario treating an e-Learning framework with absolute exactness. It will anticipate the learners to forget about their actual presence and the long distance between them and the instructor in the future.
8 Internet and Mobile Insight of Bangladesh

Bangladesh is a south-east Asian country with a small area. But it has a large population where its literacy rate is rising day by day. And it is a land of opportunities where digitalization is making its way into the deep. Traditional and online activities are both active in the field of education here. Anyone with a desktop or laptop or mobile can be connected to the virtual world with an internet connection. In Table ?? Without having a strong internet connection it is not possible to get into Online Classroom. Though it is costly to get a better one here a good one can be got within a reasonable rate here. From the perspective of Bangladesh, we can see the internet speeds in Table 3. Most of the people in our country use mobile phones heavily in their daily activities. As technological kinds of stuff cost more in this country, people are satisfied with their computer alike mobile phones. And it is possible to get a smartphone at a reasonable price as we have many mobile manufacturers here. Here in Table 4. we see the mobile connection types in our country.

9 percent

Previously we have described mobile manufacturers in Bangladesh. Mobile is like a small computer with a lot of advantages. So, with the statistics, we can say that it is feasible to maintain online classroom activities in a developing country named Bangladesh. And it will be able to contribute to building a Digital Bangladesh.

10 VII. Online Classroom Activities in Bangladesh

Bangladesh is a developing country. It is emerging day by day with its resources. Though traditional systems are more happening here now a day’s new techno-logical system is also preferable with the traditional one. So, online classroom activities have also been started with a limited portion in Bangladesh. Bangladesh has a huge education society containing many institutions and its teachers and students. We can observe the quantity from Table 1. Like other people in the world, the people of Bangladesh are also facing a crisis at the time of COVID-19. It is so dangerous that life has been stuck in homes for days long as per the Government’s Rule and Safety. All the institutions excluding emergency services and banking are closed in most of the countries. So, all educational institutions are also closed. But they are facing many problems to continue one of the noblest things in the world, and that is Educating. So they are shifting their classes to an online setting. Going through Fig. ??, we can see there are a huge number of students studying at different educational institutions in Bangladesh. They can surely be benefited from the online classroom platforms. At this crisis moment like COVID-19, teachers of different educational institutions are instructed to take their classes online. Like other private universities in Bangladesh, Notre Dame University Bangladesh is also taking its classes in online classrooms. Faculties and students are also taking their classes regularly at their routine time. So that they can get enough time to do their other work. And mainly to be at home, which is the main thing to be safe in the COVID-19 situation. All the people are playing their roles in tackling this tough situation.

11 An Overview of Online Classroom Platforms

Online classroom and learning activities are being incorporated by numerous organizations. They are now working with the advancement of online classroom software and tools. But it is difficult to ensure learner’s inclination with both innovating educational stages and advancement in technology. Here we have discussed various online classroom platforms with their features, prices and sources in Table 7 to 10: Single license for USD19 a month, Team license for USD239 a month (includes 10 virtual meeting rooms).

12 H

Year 2021

13 ProfiConf

Cutting-edge security to keep data safe, web-based solution without the need to download anything, share screens, ability to record the conference.

Free plan for meetings with up to 2 participants, Pro plan is priced at USD12 per month, and the Premium plan costs USD25 per month.
In the activities of the online classroom, we can be benefited in many ways. It has broadened many fields of technology in online classrooms. It will save both our time and money. And the remaining can be invested in other mediums. It can also prepare us for the upcoming era of digitalization. It can help us to be familiar with technologies. Online classroom trends are forming like never before. These advanced classrooms are going to stay for a long time. It may happen that the traditional classrooms will be replaced by online ones. Technology is giving us so many things that cannot be counted. For instance, we are getting a new interactive education world for it as it is passing the physical and traditional boundaries. We should never stop learning. There is no limit to that also. Also, it is opening the new education door to the working people who work in the daytime. They can learn new things and enrich their knowledge through online classes. So we should be more familiar in Bangladesh to continue our education regularly whatever crisis like COVID-19 we face at any time. Through this paper, anyone can select their online learning platform as per their requirement. We have tried our best to put all the main features and costing details in a short format.
Figure 1: Total Population: 167.2 million
Internet Users: 91.2 million
Active Social Media Users: 34 million
Mobile Connections: 157.2 million
Active Mobile Social Users: 32.2 million

Figure 2: Table 1:

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of active internet users</td>
<td>91.82 million</td>
</tr>
<tr>
<td>Internet Users as a percent of total population</td>
<td>55 percent</td>
</tr>
<tr>
<td>Total number of active mobile internet users</td>
<td>86.42 million</td>
</tr>
<tr>
<td>Mobile Internet Users as a percent of total population</td>
<td>52 percent</td>
</tr>
</tbody>
</table>

Figure 3: Table 2:
3

Description Number
Average Speed of Broadband Internet Connection 9.06 MBPS
Internet Users as a percent of total population 18.70 MBPS

Figure 4: Table 3:

4

Description Number
Total Number of Mobile Connection 157.2 million
Mobile Connection as a percentage 94 percent
of Mobile Connection
Percentage of Prepaid Mobile Connection 97 percent
Percentage of Postpaid Mobile Connection 3 percent
Percentage of Broadband Mobile Connection

Figure 5: Table 4:

5

Total Population 167.2 million
Female Population percentage on whole 49.6 percent
Male Population percentage on whole 50.4 percent
Annual Change in Population Size +1 percent
Median Age 27.5 years
Urban Population 37 percent
GDP per Capita 3869 dollar
Total Literacy Age(15+) 73 percent
Female Literacy Age(15+) 70 percent
Male Literacy Age(15+) 76 percent

Figure 6: Table 5:

6

Figure 7: TABLE 6:
<table>
<thead>
<tr>
<th>Name</th>
<th>Features</th>
<th>Pricing</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>GoToMeeting</td>
<td>Screen sharing, mobile conferencing, meeting recording and transcription, video and voice conferencing</td>
<td>Professional-pack Costs USD12 per participants, month for 150 participants, Business-pack costs USD16 per month for 250</td>
<td>[6]</td>
</tr>
<tr>
<td></td>
<td>Free meeting room in the cloud, Easymeeting access to Easy meeting directory, available on Android and iOS.</td>
<td></td>
<td></td>
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</tbody>
</table>

Figure 8: Table 7:

<table>
<thead>
<tr>
<th>Name</th>
<th>Features</th>
<th>Pricing</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReadyTalk</td>
<td>Host audio and video meetings with up to 125 attendees through desktops or mobile devices, customize participant profiles and assign roles for efficient meeting management. Share screen, remote control desktop, spreadsheets, interactive whiteboard, recording and archiving.</td>
<td>Standard and Premium Subscription cost USD12 and USD24 per month. Prices USD199 per year for 20 persons and USD499 per year for 100 persons. Unlimited video sessions for 25 month participants are priced at USD25 per Basic costs Free for 2-100 participants and the time is only for 40 minutes. But the Pro version costs USD12.95 per month for 2-100 participants with unlimited sessions</td>
<td>[20] [23] [27]</td>
</tr>
<tr>
<td>Spreed</td>
<td>Online whiteboard, video conference, screen sharing, recording.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vedamo</td>
<td>Share-view desktop, collaborate in real time, record and playback, generate attendance reports</td>
<td></td>
<td></td>
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</tbody>
</table>

Figure 9: Table 8:
### Table 9: Pricing and Features of Selected Video Conferencing Tools

<table>
<thead>
<tr>
<th>Name</th>
<th>Features</th>
<th>Pricing</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuze</td>
<td>Ability to save and share meeting files, up to 1GB of cloud storage for all its plans</td>
<td>Free: maximum of 25 participants while the Pro costs between USD8-USD14 and hosts a maximum of 125 participants. The Enterprise comes with a monthly rate of over USD20 and the maximum number of people can be discussed with the company</td>
<td>[12]</td>
</tr>
<tr>
<td>Zoom</td>
<td>Meeting participants, synced end to end with your calendar via Outlook, iCal, and Gmail</td>
<td>Basic plan is free for holding meetings with up to 100 people but it is limited to 40 minutes. Its pro plan costs USD14.99 per host and has to be paid monthly. Starter edition costs USD19 per month if pay annually, and USD29 if pay monthly. Pro edition costs USD29 per month if pay annually, and USD39 if pay monthly. Enterprise edition costs USD79 per month if pay annually, and USD99 if pay monthly.</td>
<td>[30]</td>
</tr>
<tr>
<td>MegaMeeting</td>
<td>Video Audio Conferencing Services, hosting and web conferencing, screen and file sharing, recording</td>
<td>G Suite pricing starts as low as USD6 per user per month for Basic, USD12 Enterprise USD25 per user per month for per user per month for Business, and Skype for Business is a free tool that can facilitate meetings with up to 250 participants. It is integrated with MS Office apps and accessible via iPhone, Android, and PC/Mac devices</td>
<td>[14]</td>
</tr>
</tbody>
</table>

Figure 10: Table 9:
<table>
<thead>
<tr>
<th>Name</th>
<th>Features</th>
<th>Pricing</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoho</td>
<td>No download, screen sharing, audio-video, recording, secure session</td>
<td>Costing for meeting and webinar differs. For meeting is prices USD10 per month for monthly and USD8 per month for yearly payment both for 100 participants. But in webinar it depends month on monthly payment and on persons. For instance it costs USD19, USD 29, USD 39, USD 79 per month. USD15, USD23, USD31, USD63 per month on annual payment on the basis of participants number 25, 50, 100, 150</td>
<td>[29]</td>
</tr>
<tr>
<td>ELECT A</td>
<td>Rich markup and annotation tools, remote control, power points files and images, text-chat, session notes</td>
<td>It has three packages named Easy, Pro, Professional that cost USD29.90, USD39.90, USD69.90 per month with 1, 1, 3 teacher rooms</td>
<td>[15]</td>
</tr>
</tbody>
</table>

Figure 11: Table 10