

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

Education 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 [1]. 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

43 speed. As per the last update of the World Health Organization on 20 April 2020 (06:00 GMT+6), there are
44 2314621 confirmed cases, 157847 confirmed deaths and 213 countries, areas, or territories are with COVID-19.
45 Every institutional function, excluding emergency services and limited hour bank services, has been closed for
46 an uncertain time. There is no perfect assumption when to get on the daily activities [1] We have started with
47 the Introduction part in Section I. In the next sections, we have discussed the online classroom and its benefits,
48 limitations, and future. Section III represents the insights of mobile and internet in Bangladesh. Section VI
49 introduces our online educational activities in Bangladesh. In Section VIII, we have made a comparison of
50 various online classroom platforms in detail. Section IX concludes the paper.

51 2 II.

52 3 The Online Classroom

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

57 ? Video conferencing capability, so lecturers and learners can see each other. ? Audio conferencing ability to
58 hear each other.

59 ? Real-time text chats, for messaging each other.

60 ? Interactive online whiteboard to interact much more col-laboratively and not just rely on video or audio.
61 ? Library of learning materials so that teachers can provide more relevant, rich, and structured lessons to the
62 students. ? Teacher tools and controls just like in a physical class-room to monitor the class and are much more
63 feasible online.

64 4 III. Benefits of Online Classroom

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

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

70 5 IV. Limitations of Online Classroom

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

74 ? Higher Internet Cost: Strong internet availability is the foremost thing to be in the online classroom. But
75 it is a matter of sorrow that it is not possible to provide a reliable connection all the time and everywhere. But
76 it cost much to get this kind of connection.

77 ? Additional Digital Training: Additional digital training is another limitation of the online classroom.

78 Perceiving online learning completely is essential for the online classroom. Some of the tutors and students do
79 not maintain proper lessons of using the given e-Learning gadgets. So, they face difficulties to interact and attain
80 these gadgets. ? Infrastructure Challenges: There is a requirement of using advanced technology and proper
81 network infrastructure for establishing an online classroom.

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

84 V.

85 6 Future of Online Classroom

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

7 VI.

100 8 Internet and Mobile Insight of Bangladesh

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

111 9 percent

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

115 10 VII. Online Classroom Activities in Bangladesh

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

132 Quality teaching and ethical formation have been conferring and rendering to youngsters by the Holy Cross
 133 Congregation in Bangladesh. Most of them have attained competency in various occupations. They have also
 134 stood out as committed citizens to serve Bangladesh with inscription. 'Notre Dame' is a brand that symbolizes
 135 excellence in the education sector of Bangladesh. At the crisis moment like COVID-19, they are continuing their
 136 educational activities on online platforms. So that the students don't face any kind of study-related problem in
 137 their career.

138 VIII.

139 11 An Overview of Online Classroom Platforms

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

145 [5]
 146 ()

147 12 H

148 Year 2021

149 13 ProfiConf

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

152 Free plan for meetings with up to 2 participants, Pro plan is priced at USD12 per month, and the Premium
 153 plan costs USD25 per month.

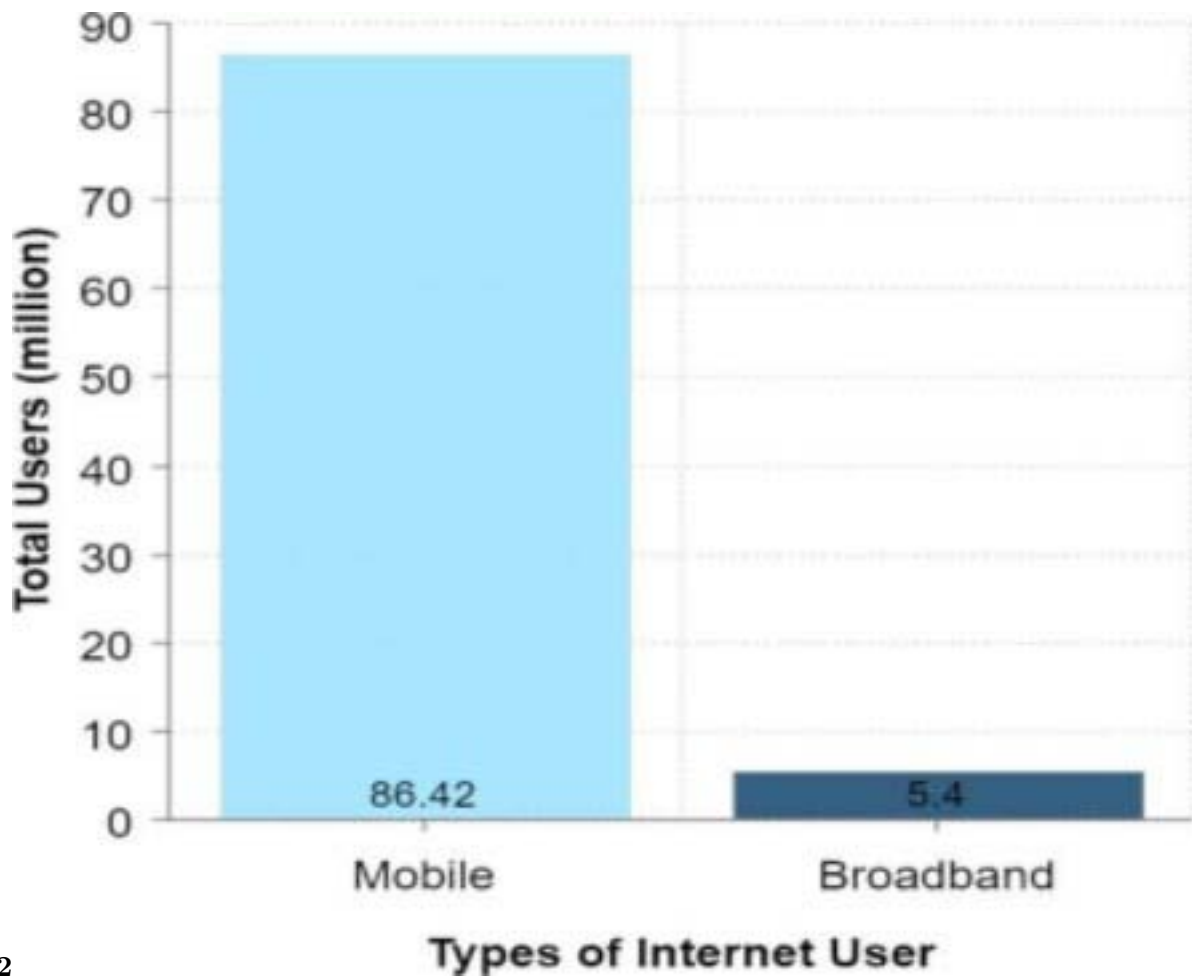
15 CONCLUSION

154 [7] ezTalks HD Video-Audio calling, file screen sharing, instant messaging, interactive whiteboard.
155 The Standard, Pro and Business plans (for 100, 200 and 300 attendees) cost USD13, USD39, and USD65 [11]
156 Web Room Document and File sharing, screenapplication sharing, interactive whiteboard.
157 per month Free [28] BlueJeans Real-time Intelligence, unparalleled interoperability, seamless integration.
158 Standard license for USD12.49 per month, limited to 50 participants per meeting. Pro license for USD17.49
159 per month, limited to 75 participants per meeting.
160 [9]
161 UberConference Share screen, voice intelligence, HD video meetings.
162 Up to 10 participants Uber Conference is free, but requires a PIN for each user. For 11-100 attendees, a
163 subscription costs USD15 per month.
164 [24]
165 Mikogo Screen sharing feature, multi-user whiteboard and annotation tool.
166 USD14 per month, to be used only for 1:1 meetings. For meetings with up to 25 people, payment is USD16
167 monthly.
168 [19]
169 Vast Conference Conference Calling, worldwide Coverage, exceptional audio quality.
170 The Essentials, Standard, and Professional plans (for 10, 100, and 250 attendees) cost USD11.99, USD15.99,
171 and USD31.99 per month.
172 [26] join.me Claim your own personalized URL, customize meeting back-ground, better audio, screen Sharing
173 join.me's LITE, PRO, and BUSINESS plans are priced at USD10, USD20, and USD30 per month respectively.
174 [17] Intermedia Unite
175 Audio and video conferencing, file and screen sharing, and document management Contact with the sales team
176 [16] Being in a developing country so we have to think about the lowest cost with most facilities. Though it entirely
177 depends on one's own choice but based on the Tables, we can say that Skype, Google Meet, UberConference,
178 WebRoom, GoToMeeting, BrainCert are much suitable in the perspective of Bangladesh as well as all over the
179 world.

180 14 IX.

181 15 Conclusion

182 In the activities of the online classroom, we can be benefited in many ways. It has broadened many fields of
183 technology in online classrooms. It will save both our time and money. And the remaining can be invested in
184 other mediums. It can also prepare us for the upcoming era of digitalization. It can help us to be familiar with
185 technologies. Online classroom trends are forming like never before. These advanced classrooms are going to
186 stay for a long time. It may happen that the traditional classrooms will be replaced by online ones. Technology
187 is giving us so many things that cannot be counted. For instance, we are getting a new interactive education
188 world for it as it is passing the physical and traditional boundaries. We should never stop learning. There is no
189 limit to that also. Also, it is opening the new education door to the working people who work in the daytime.
190 They can learn new things and enrich their knowledge through online classes. So we should be more familiar
191 in Bangladesh to continue our education regularly whatever crisis like COVID-19 we face at any time. Through
192 this paper, anyone can select their online learning platform as per their requirement. We have tried our best to
193 put all the main features and costing details in a short format.



12

Figure 1: Fig. 1 :Fig. 2 :

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 :

2

Description	Number
Total number of active internet users	91.82million
Internet Users as a percent of total population	55percent
Total number of active mobile internet users	86.42million
Mobile Internet Users as a percent of total population	52 percent

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 of Mobile Connection	94 percent
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	167.2million
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 :

7

Name	Features	Pricing	Source
GoToMeeting	Screen sharing, mobile conferencing, meeting recording and transcription, video and voice conferencing	Professional-pack USD12 per participants. month for 150 participants, Business-pack costs USD16 per month for 250	Costs [6]
EasyMeeting	Free meeting room in the cloud, access to Easy meeting directory, available on Android and iOS.		

Figure 8: Table 7 :

8

Name	Features	Pricing	Source
ReadyToMeet	Host audio and video meetings with up to 25 attendees through desktops or mobile devices, customize participant profiles and assign roles for efficient meeting management.	Standard and Premium Subscription cost USD12 and USD24 per month.	[20]
SpeedCollab	Share screen, remote control desktop, interactive whiteboard, recording and archiving.	Prices USD199 per year for 20 persons and USD499 per year for 100 persons.	[23]
Vedantu	Online whiteboard, video conference, screen sharing, recording.	Unlimited video sessions for 25 month participants are priced at USD25 per	[27]
GOMINTNOW	Share-view desktop, collaborate in real time, record and playback, generate attendance reports	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	[13]

Figure 9: Table 8 :

9

Name	Features	Pricing	Source
	Ability to save and share meeting files, Fuzeup to 1GB of cloud storage for all its plans	It offers three plans: Free, Pro and Enterprise. The free allows a 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	[12]
	Supports HD audio and video calls, content sharing with up to 1000 meeting participants, synced end to end with your calendar via Outlook, iCal, and Gmail	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	[30]
	Video Audio Conferencing Services, Megamotion hosting and web conferencing, screen and file sharing, recording	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	[18]
	Google Schedule meetings on the fly, Meet lightweight app version runs smoothly on iOS and Android devices, integrated window access all of Google's apps from one with Google Calendar and Google Doc, Audio and HD video calling, smart	G Suite pricing starts as low as USD6 per user per month for Basic, USD12 Enterprise USD25 per user per month for Business, and Skype for Business is a free tool that can facilitate meetings with up to 250	[14]
	Skype messaging, screen sharing, live subtitles, call recording, private conversations	participants. It is integrated with MS Office apps and accessible via iPhone, Android, and PC/Mac devices	[22]

Figure 10: Table 9 :

10

Name	Features	Pricing	Source
Zoho Meet	No download, screen sharing, audio-video, recording, secure session	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 in-stance it costs USD 19. USD 29, USD 39, USD 79 per	[29]
ELESTA	Rich markup and annotation tools, Screen sharing and remote control, power points files and images, text-chat, session notes	USD15, USD23, USD31, USD63 per month on annual payment on the basis of participants number 25, 50, 100, 150 It has three packages named Easy, Pro, Professional that cost USD29.90, USD39.90, USD69.90 per month with 1, 1, 3 teacher rooms	[15]

Figure 11: Table 10 :

194 [Easymeeting (2020)] , Easymeeting . <https://www.easymeeting.net> 14 April 2020.

195 [Gotomeeting (2020)] , Gotomeeting . <https://www.gotomeeting.com/en-in> April 2020.

196 [Proficonf (2020)] , Proficonf . <https://www.proficonf.com> April 2020.

197 [Adobe connect, Accessed (2020)] , <https://buyconnect.adobe.com> *Adobe connect, Accessed* April 2020.

198 15.

199 [Bluejeans (2020)] , Bluejeans . <https://www.bluejeans.com> April 2020.

200 [Eztalks (2020)] , Eztalks . <https://www.eztalks.com> April 2020.

201 [Intermedia (2020)] , Intermedia . <https://www.intermedia.net> April 2020.

202 [Megameeting (2020)] , Megameeting . <https://www.megameeting.com> April 2020.

203 [Pgi (2020)] , Pgi . <https://www.pgi.com> April 2020.

204 [Skype (2020)] , Skype . <https://www.skype.com/en> April 2020.

205 [Uberconference (2020)] , Uberconference . <https://www.uberconference.com> April 2020.

206 [Webroom (2020)] , Webroom . <https://webroom.net> April 2020.

207 [5 reasons why a virtual classroom better than a real one. dexway (2019)] *5 reasons why a*
 208 *virtual classroom better than a real one. dexway,* [https://www.dexway.com/](https://www.dexway.com/5-reasons-why-a-virtual-classroom-better-than-a-real-one)
 209 *5-reasons-why-a-virtual-classroom-better-than-a-real-one* February 28, 2019.

210 [Braincert (2020)] *Accessed 15,* Braincert . <https://www.braincert.com/elearning-platfor> April 2020.

211 [Fuze (2020)] *Accessed 15,* Fuze . <https://www.fuze.com> April 2020.

212 [Gomeetnow (2020)] *Accessed 15,* Gomeetnow . <http://www.gomeetnow.com/web-conferencing/index.html>
 213 *html* April 2020.

214 [Cloud (2020)] *Accessed 15,* Google Cloud . <https://gsuite.google.com/products/meet> April 2020.

215 [Accessed 15 (2020)] *Accessed 15,* <https://www.e-lecta.com> April 2020.

216 [Mikogo (2020)] *Accessed 15,* Mikogo . <https://www.mikogo.com> April 2020.

217 [Ringcentral (2020)] *Accessed 15,* Ringcentral . <https://www.ringcentral.com> April 2020.

218 [Zoho (2020)] *Accessed 15,* Zoho . <https://www.zoho.com> April 2020.

219 [Characteristics of a virtual classroom (2020)] *Characteristics of a virtual classroom,* <https://www.learndash.com/characteristics-of-a-virtual-classroom>
 220 *learndash.com/characteristics-of-a-virtual-classroom* January 2020. (Learn-Dash)

221 [Coronavirus disease (covid-19) -world health organization] *Coronavirus disease (covid-19) -world health organi-*
 222 *zation,* <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

223 [Asher] *Definition -what is a virtual classroom? Learn Cube, Alex Asher .* [https://www.learncube.com/](https://www.learncube.com/what-is-a-virtual-classroom.html)
 224 *what-is-a-virtual-classroom.html*

225 [Digital in bangladesh 2019 report. Hype (2019)] <https://hypedhaka.com/digital-data-bangladesh-2019/>
 226 *Digital in bangladesh 2019 report. Hype,* August 2019.

227 [Join me, Accessed 15 (2020)] *Join me, Accessed 15,* <https://www.join.me> April 2020.

228 [What is a virtual classroom?-online learning solutions by raccoon gang] *What is a virtual classroom?-online*
 229 *learning solutions by raccoon gang,* <https://raccoongang.com/blog/what-virtual-classroom/>