PROCEEDINGS OF DIGITAL TALK

ON

SELECTION OF LMS AND VIDEO COLLABORATION APPLICATIONS

Prepared by:

Project Team

Facilitating Distance Learning using Digital Conferencing Facility

[fDLuDCf]

Date: 10 December, 2020

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INTRODUCTION

A Digital Talk show titled "Selection of LMS and Video Collaboration Applications" was organized by facilitating Distance Learning using Digital Conferencing facility (fDLuDCf) project under BdREN on December 10, 2020 at 10:00am-12:00pm virtually over Zoom Platform. The program was organized in order to guide the audience about the issues they need to consider while going for selection of LMS Applications and Video Collaboration Applications. The program started right on time at 10:00am [GMT+6] and with the permission of the chair CEO, BdREN who is the Principal Investigator of the project and who acted as the moderator of the show welcomed all the audiences from different countries namely Bangladesh, Bhutan, India, Nepal, South Korea and USA. The moderator then gave a brief introduction of the presenter and the panelists. He also illuminated the audience about the activities of the project, its financing, its beneficiaries and partners. Finally CEO, BdREN narrated the purpose of organizing the seminar.
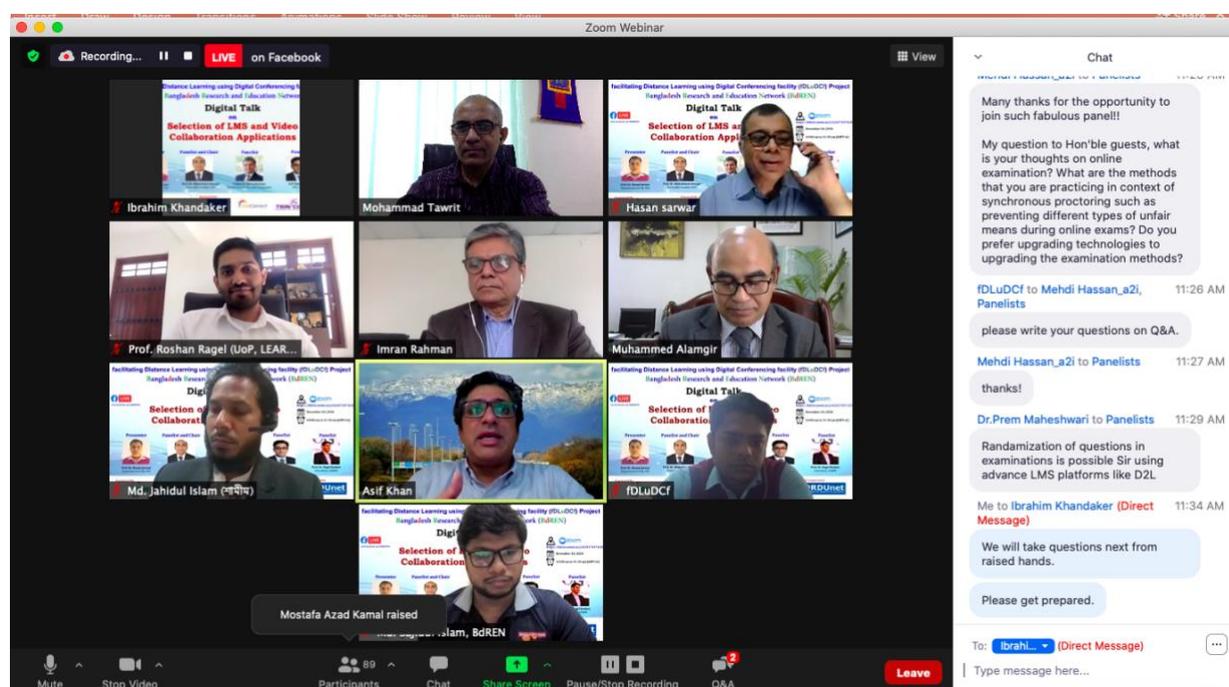
After the welcome address, Prof. Dr. Hasan Sarwar delivered his eye-catching and thought-provoking presentations with a few questions thrown to the floor for getting answered. CEO, BdREN then asked each of the panelists relevant questions in order to delve into the details of the features and issues to be considered while choosing the said applications. Also, the regulatory issues were discussed with regard to implementation of online educations in Bangladesh, online exams, issues related with plagiarism, effectivity of synchronous education and other similar subjects. Also, questions were collected from the audience using live audio/video and through Q&A terminals using texts. All the questions were duly answered by the erudite panelists. A brief report is prepared here containing the following topics to update the readers about the detail proceedings:

- List of Participants
- DigiTalk Presenters and Panelists
- Program Chronology

- Findings
- Discussion on Chat Box
- Live Questions and Answers
- Questions and Answers using Q&A/Chat Box
- Take Home

Details of the show is available at https://dle.asiaconnect.bdren.net.bd.

LIST OF PARTICIPANTS

▪ In total 178 participants attended the show. Country wise distribution of the participants were as follows:

Sl. No.	Name of the Country	Number of Participants
1	Bangladesh	138
2	Bhutan	4
3	India	4
4	Republic of Korea	1
5	Nepal	24
6	Pakistan	1
7	Singapore	1
8	Sri Lanka	2
9	Thailand	1
10	United States of America	2

Detail List is given in Annexure-A.

PRESENTER, PANELISTS AND MODERATOR

Role	Name and Affiliation of the Resource Persons	Photographs	Country
Presenter	**Prof. Dr. Hasan Sarwar** Department of CSE, UIU		Bangladesh
Panelist and Chair	**Prof. Dr. Muhammed Alamgir** Honorable Member, UGC		Bangladesh

Role	Name and Affiliation of the Resource Persons	Photographs	Country
Panelist	**Professor Imran Rahman** University of Liberal Arts Bangladesh		Bangladesh
Panelist	**Asif Shahid Khan** HEC, PERN		Pakistan
Panelist	**Prof. Dr. Ragel Roshan** Consultant, LEARN		Sri Lanka
Moderator	**Mohammad Tawrit** CEO, BdREN Principle Investigator, fDLuDCf Project		Bangladesh

PROGRAM CHRONOLOGY

- Welcome Address: 10:00-10:15am [GMT+6] => Mohammad Tawrit
- Presentation: Duration 10:15-10:55am [GMT+6] => Prof. Dr. Hasan Sarwar
- Questions from the moderator to the Panelists:10:55-11:30am [GMT+6]
- Questions from the audience: 11:30-11:55am [GMT+6]
- Closing: 11:55am-12:00pm [GMT+6] => Honorable Chair Prof. Dr. Muhammed Alamgir

FINDINGS

- Each country is having its own choice in selecting Learning Management Software. Some of the revelations were as follows:
  - Sri Lanka:
    - Mostly "Moodle" is used.
    - No centralized solution is being provided from LEARN. Each university is using its own LMS instances.
  - Pakistan:
    - Mostly "Moodle" is used.

- PERN is providing centralized solution. Any institute wants to use "Moodle" as LMS needs to send a request to PERN. PERN can configure the LMS instance within an hour.
  - o Bangladesh:
    - No specific statistics about usage of LMS has been spelled out by the presenter. However, ULAB started with "Moodle" at the initial period but later on they shifted to "Google Classroom" due to its overwhelming success. Although they are now evaluating other more professional applications like "Blackboard", "Canvas" and "Desire-to-Learn".
    - BdREN is using customized "Moodle" for conducting online courses & training purpose under fDLuDCf project.
    - BdREN is yet to provide any centralized solution for LMS to the universities

- In brief Two types of LMS Applications are available in the market:

  - o **Licensed:** Mostly per year per user basis

  - o **Unlicensed/Free:** Subscription is Free of Cost but Cost needs to be incurred in the form of both one time (Installation and Customization) and recurrent (Operation and Maintenance) cost.

- The ranking of LMS was portrayed by the presenter as follows:

LMS Software	Rating	Deployment Type	Number of Customers	Licensing Type	Approximate Users
Mindflash	5/5	Cloud Hosted	--	Licensed	--
SkyPrep	4.5/5	Cloud hosted & open API	500+	Licensed	--
Knowmax	4.5/5	Cloud, On-premise, Hybrid & Open APIs	--	Licensed	--
TalentLMS	4/5	Cloud hosted, open API	4,100	Licensed	2,504,500
Moodle	4.5/5	On Premise	100,000	Unlicensed/Free	125,555,200
Canvas	--	Cloud hosted	3,000	Licensed	--
Edmodo	4.8/5	Cloud hosted	350,000	Licensed	55,123,002
Blackboard	4.5/5	Cloud hosted	16,000	Licensed	24,345,120
Schoology	4.3/5	Cloud hosted, Open API	2,000	Licensed	19,000,123
Brightspace	--	On Premise, Open API	2,000	Licensed	--

Source: https://www.softwaretestinghelp.com/learning-management-system/

- Two types of Video Collaboration Applications were presented:

  - o **Unlicensed:** BigBlueButton, Jitsy Meet
  - o **Licensed:** Zoom, Google Meet, Microsoft Team and Cisco WebEx. Although they have free version but those free versions have limitations with respect to maximum meeting duration and number of users.
- The unlicensed Video Collaboration Applications are still not befitting for being used in "Production" Mode.

- The Licensed Video Collaboration Applications have their own pros and cons. The presentation as well as statements from the panelists unfolded the following advantages of each individual software:

- o **Zoom:** Breakout Room [pointed out by Presenter], Webinar Facility [pointed out by Asif] and On-prem Usage leading to saving of internet bandwidth and flexibility in tariff model [pointed out by Roshan and also by Asif], most efficient in terms of utilization of bandwidth [pointed out by Presenter]. Being widely used in Sri Lanka, Nepal, Bhutan and Bangladesh mainly facilitated by the NRENs of the respective countries where the required licenses have been sponsored by fDLuDCf project.

- o **Microsoft Team:** Available as an extension of Microsoft Office 365 package. Being widely used in Pakistan facilitated by PERN.

- o **Cisco WebEx:** Not that much in use in the education sector in those Asian countries wherefrom the panelists as well as the audiences participated in the Digital Talk show

- o **Google Meet:** Is available as an extension of G-Suite package. "Jam Board" in Meet is useful as pointed out by presenter. One of the panelists pointed out that it is very user friendly and it has added feature of its integration with G-Suite Applications like Google Docs and Google Sheets. Presenter also focused on its advantage in sending mail to all participants, or sending notices to all participants through mail. Few of the Institutions in Bangladesh including ULAB are using this application. At the moment it is available "Free of cost".

- The presenter's comment as Video Collaboration **"first experience is always the best experience"** was unanimously accepted by all the panelists.

- Conducting online examination is a challenge and the examination types need to be reframed incorporating change in the type of questions, converting the types of exam from close book to open book and with associated changes so that controversy of any malicious practices can be eliminated.

- For Bangladesh to continue "Online education" during "New Normal" needs an "Online Education Policy" to be framed. UGC should take immediate steps for framing the policy.

- Universities should be allowed to move away from fixation on Final Exams to assess students. Assessment should be based on Group Works, Discussions, Presentations and Submission of Papers.

- Synchronous Mode of education is no more an effective tool for imparting education. The issue should be seriously taken care of and its replacement with an effective mechanism of delivery should be figured out.

- A follow-up discussion may be arranged on managing "Plagiarism" software at a lower cost.

DISCUSSION ON CHAT BOX

- Details have been provided in Annexure-B.

QUESTIONS FROM MODERATOR AND ANSWERS

Question: I know you are a strong proponent of Zoom Application and Sri Lankan Universities are making full use of the Application. Is it only because of the reason that you received 7500 free licenses under this project or faculty members are really impressed with the features Zoom is offering. If Zoom is really your preferred application even with payment of License Fees, I will appreciate if you could highlight the technical aspects where Zoom excel others.

Roshan Ragel: This project started back years ago as Tawrit has already mentioned and we were gifted with free licenses of Zoom Application. Before that we from LEARN did install Jitsy Meet but not in production environment. We arranged many different programs using Zoom Application once the project got onboard and at the beginning probably because we got it free of cost and there were lots of trainings and workshops, we had been using it within ourselves. But, once the pandemic broke out we started using it mainly because of the fact of its "On-prem" version feature. Definitely, Jitsy and BigBlueButton both have "On-prem" version available and both are "Free". But, operation and maintenance of "Free" software has its own challenges and from usability perspective they are not that user friendly. How we have utilized the "On-prem" feature? In Sri Lanka we have negotiated with all the ISPs as well as mobile operators to make all these packets/data charge-free while they will be destined to our servers where Zoom meeting was running. We have around 150,000 students which are pretty small compared to that of Bangladesh and students as well as teachers who are connected to our servers for such classes are not getting charged. That's why we are still sticking with "Zoom", promoting "Zoom" and also planning to continue with "Zoom" even after expiry of the project. Let me take the opportunity to show our utilization and here it goes:
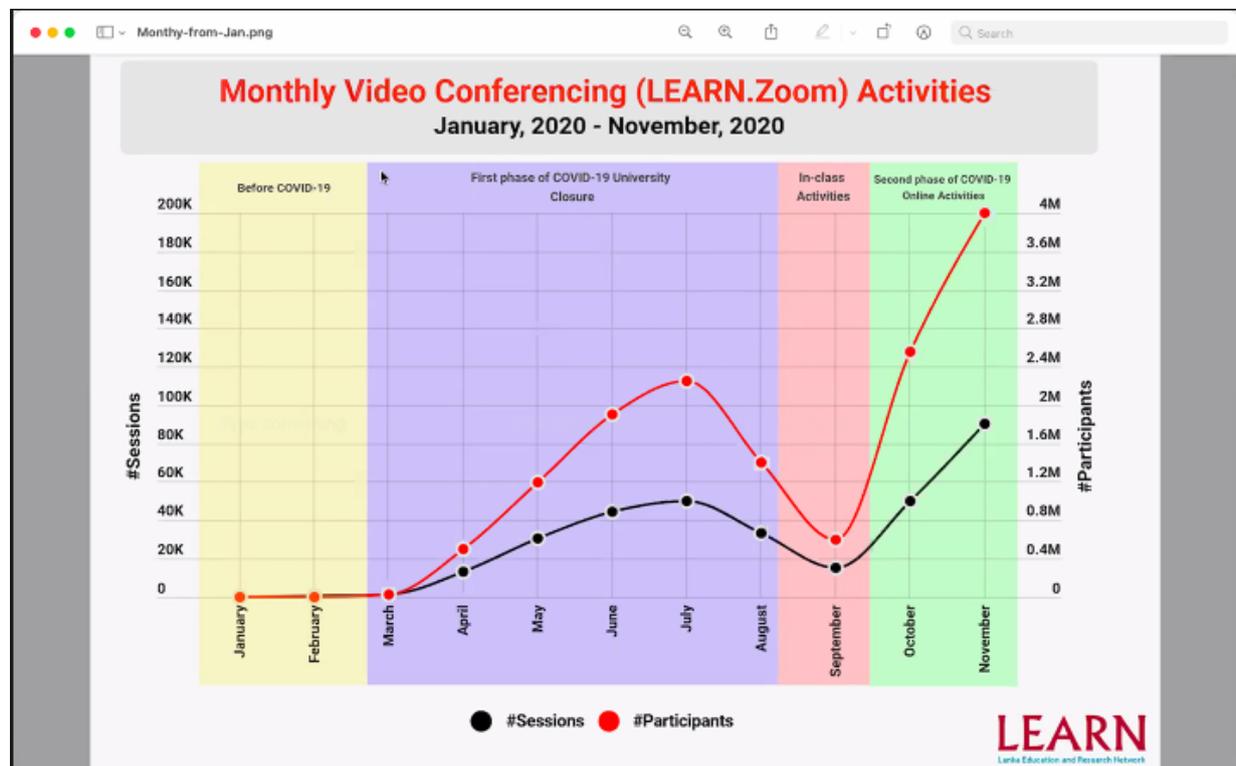
You can see the surge in usage in the month of November. Around 4m participants joined the classes against a number of meetings which stands at around 90,000. Also it is seen in the diagram that the adaptation is better during the second attack (expressed in light Green with peak occurring in the month of November) than what it was during the first attack (expressed in light Gray with peak occurring in the month of July).

However, to answer to Tawrit's question about the reason why we are using and promoting zoom is due to its two fold advantage:

1. Capability of Supporting "On-prem" feature which allowed us to make the services "Free of Cost" for students and faculty members and
2. It's added advantage in managing and operating over other "Free" software which has "On-prem" version.

Question: I know you have dealt with many different Video Collaboration Applications and eventually ended up with Microsoft Team. Could you please explain what prompted you to take such decision. I will appreciate if you could highlight both the technical and financial issues.

Asif Shahid Khan: When the pandemic hit globally back in March everyone started looking for Video Collaboration Application solutions, I think Zoom was by far the leader. Zoom had all the facilities like "Raise your hand", "Presenter only" mode, "Mute All", "Breakout Room" and many others. At that point Zoom was definitely the best Video Conferencing Software available. At the same time if you take a look on "Microsoft Team" and "Google Meet" they were quite there, but in the last 6(six) months they have done a really wonderful job. They have added a good number of features that weren't there before. In Pakistan's case it was a bit different as we had already an agreement with Microsoft for using Office 365. We already had the infrastructure up and running. We didn't have the contract with Zoom at such a big scale like Sri Lanka or Bangladesh had. For us it was a simple decision. We already had Microsoft Team running. Yes, it didn't have all those features which Zoom had. We had been working very closely with Microsoft here. They told us that they would be realizing lot of new features over the next few months. If you want me to make a decision right now it would be little different. Team is like more than a Video Conferencing Tool, it's more a Video Collaboration Tool. You can setup classroom like Google, create Assignment and submit Assignment. The entire suite Team offers is a collaboration tool, on the other hand Zoom is only a Video Conferencing Tool. And if you just look at the list price, I am not talking about the discounted price, An A3 License for Microsoft is 2.50 USD per month per user, the economics alone if you look at the list prices, the value you get for the product you are getting, now they are adding all the new features, I still think that Microsoft Team is a better option in terms of the price they are offering. What Microsoft Team doesn't have, which Roshan pointed out well, is the ability to run "On-prem". The only factor which will incentivize us to switch is the "On-prem" facility and when we talk about NREN the "On-prem" feature is very important as you will be able to keep all these traffic within the country. That leads to better Video-conferencing experience in terms of quality with far less cost as you don't need to pay for expensive Internet bandwidth, which allows you to sign with Mobile Operators for discounted packages. The scenario will be lot more interesting when the cost of rolling out of Zoom versus cost of Microsoft Team when you add "On-prem" option to it how much it changes the dynamics. Overall, if I need to go for one of them, I would still go with Microsoft Team because lot of rich features, the Video Conferencing facilities have improved tremendously, lot of things which were missing they have added

them and also the pricing point even if you go with 90 USD per year per host Zoom License that is 3 times more what Microsoft Team costs. For a country like Pakistan we don't have extra funds and it becomes very hard for us to justify why we need both products at the same scale. Having said that we still have a bunch of Zoom Licenses. Features like WebiNars, and lot of useful features which are great in Video Conferencing but when you are going for online classrooms, I am not sure whether you are going to end up paying all those features of Zoom.

Question: As a user you have dealt with various Video Collaboration applications, I know that. Could you please share your experience?

Prof. Imran Rahman: We had been using Google Meet until you told me the free Zoom Licenses that BdREN was offering. As you know I was the first one to jump on it. We have been using Google Meet, because ULAB had been Google Partner for last 10 or may be 15 years. We get lot of things as a part of Google Suite, the G-Suite, which has a market value of close to 100 thousand dollar per year to subscriber fees, I believe, we get it free as a part of education package. So, most of the students and most of the teachers are using Google Meet. As far as LMS is concerned, we had been using Moodle which is an open source LMS since 2014. Reasons behind we had been using it are, you know, in Bangladesh we have hartals and strikes. We were kind of thinking how we can continue the education even when students cannot come to the classes. With that in mind, we were using Moodle as LMS in parallel to our real time face to face classes. And the reason being that when we had to switch fully online last April, the switching was reasonably smooth. We had hiccups, but our students and faculties were used to using Learning Management System. But, my personal experience is I have been using Zoom because the additional features it has. And Google Meet since April has been adding all the features that Zoom has. Still it is kind of "Patch Work". If we look at the performance, Zoom is far ahead. And as long as it is free I will at least use it. I really couldn't help my faculties to adapt to Zoom. May be it's little bit complicated to operate. "Google Meet" is very simple. It has less features, less bells and whistles. Once you initially learn the additional features Zoom is offering, you are going to appreciate "Zoom".

Question: As a policy maker, sitting at the helm of building policies for Higher Education, what is your plan? Once the COVID-19 will be over, at least when the situation is expected to be a little better, What is your plan? Will it be again fully "On Site", will it be still "Online" or it will be something in "Blended" format?

Prof. Dr. Muhammed Alamgir: Definitely we are going to overcome this COVID-19, it might take 6 months, 1 year or even 2 years but today or tomorrow we are going to win over it. Certainly, online classes gives us the flexibility in terms of time. We can organize classes at any point of time. But, it has got other challenges. It impedes our normal life. We are regulatory body. Our duty is to frame the guidelines and regulations. Till now we have no policy for online education. All the education system is in the control of the academic council of a particular university. What will be the methodology of delivering lectures? In the academic ordinance, nothing is specified exclusively – whether it will be "face-to-face" or it will be "online" – because at that time there was nothing called "online". It was by default that all the lectures will be "face-to-face". I believe, in future it will all depend on the capability of the particular university, on the attitude of the stakeholders, the teachers and the students. One particular teacher might not feel comfortable taking classes online. Hence, we want to keep it open. It should be open to the students, open to the faculties and open to the academic council of a particular university.

In market there are a number of LMS software available. Even then, we are facing challenges to select an LMS software having the facility of conducting "hands-on" labs and "examinations". At the moment in public university everything is stuck. The faculty members have finished their courses using Zoom Application but they don't have the tools to take online examinations. It will take time to manage such software from the market or to build software with such facilities. The other important thing is the attitude of the students which needs to be changed. The students should come forward with a positive attitude shunning all the malicious practices which might even help them get a better grade. UGC is not going to advocate any software to be used by any university. Choosing the right LMS software will depend completely on the university itself. As regulatory body we will just show them the right path but the choice will be theirs.

Question: I think you are using Moodle as your LMS software. Is there any limitation you found in using Moodle software?

Prof. Imran Rahman: Let me clarify. We started with Moodle way back in 2014. But since then the overwhelmingly popular software we have been using is Google Classroom. Moodle is a full-fledged LMS system. It's open source, it's bit clunky. Not as good as "Blackboard" or "Canvas". But it's pretty good. Students can download an App version in their mobile phone. It's a bit more heavy on the server requirements. But, Google Classroom although it doesn't have all the features of a full-fledged LMS but it has the ones which are important for us. So, it's working well for us. Other thing is Google Classroom can be integrated with other applications in G-Suite such as Google Docs, Google Sheets, Google Slides. More importantly they are authenticated, they are not pirated. So, it is also helping us to move to Licensed Software. We found Google Classroom extremely useful. The features they don't have, we are planning to move to other commercial and more professional LMS Application which has online delivery of education built-in. Such as: Canvas or Blackboard or Desire2Learn. Discussions are ongoing, Ultimately the load will fall on students because they got to pay for it. This is not the right time to do that. So, most of the faculties are using Google Classroom with Google Meet. Few of us are using Google Classroom with Zoom. And it's working quite smoothly even though these are not under one application.

Question: How you are managing Exams at this point of time in ULAB?

Prof. Imran Rahman: We are managing exams, well, with difficulty. Because it forces us to the question of holding the final exam. UGC can't get away from the problem of whole final exam that have been kept pending. If the student is not sitting in front of me, if he wants to cheat, he will find a way to cheat. No matter what I do, no matter what invigilation software I use, no matter if I say keep your videos on. It's not going to work. The best way to design the question in such a way that they will not be able to copy from somewhere. If they copy from each other then Google Docs has an internal plagiarism checker and it will catch them. The other things what we are doing it for each exam we are preparing multiple sets of questions. Some teachers are randomly giving each student a different set. That's the extreme way of doing, but that works. I think we should get away from the fixation on the final exam. If you look at the rest of the world, if you look at any good university in any other country which is ahead of us, you will find the assessment system varies. A lot of emphasis is given on active

learning. Assessment is broken down into Group Works, Discussions, Presentations and Papers. We have to get away from the fixation of the final exam. And UGC needs to play a major role on it.

Prof. Dr. Muhammed Alamgir: For Public University everything is clearly defined. The percentage of marks in Quiz, Term Exam and Final Exam is entirely in the hands of Academic Council, Deans Committees and other associate committees. But, for Private Universities why UGC has put so many restrictions, is only due to the reasons of the academic environment – which is not so healthy – in some of the private universities. Moreover, Private University Act 2010 gives UGC the authority to intervene on the academic affairs. If the Act can be changed, more freedom can be given to private universities as well.

Question: You are facing the same challenges on taking online exams, remote proctoring and use of LMS. Do you know how such challenges are being overcome?

Asif Shahid Khan: Most of the universities in Pakistan are using Moodle. As Prof. Imran has rightly identified Google Class and Microsoft Team are not full blown LMSs. I will call them as Lightweight LMSs. When you take a holistic view, they don't take all the boxes of a full-blown LMS Application. As I have mentioned most of the universities in Pakistan are using Moodle. What PERN is providing is hosted Moodle solution. If a university approaches PERN, it has automated to a point that it can made the Moodle instance for that university up and running within an hour. A bunch of technical scripts we run, we got the environment created. We will take care of file backup, database backup, security infrastructure, load balancing we do it on behalf of the university and also, we do provide the hardware. The main thing about LMS is, the technology part we can easily handle, there is no rocket science in it. Where we found challenges is the adoption of technology. How the faculties and administrators will set up their courses? The challenges of training them up. Huge amount of works needs to be done for training up the faculties to let them educate about the best way to teach online. Synchronous mode of education no more works. I found it difficult keeping the same attention in a two-hour long meeting. Students have many distractions on their mobile phone. It's very difficult to keep them engaged. We need to figure out how can we enter into an Asynchronous mode or Hybrid mode of lecture where teaching will be effective. It is not picking the platform, if your faculty doesn't know how to pick that platform, it doesn't offer more than a stop gap solution. In terms of Assessment in Pakistan, our policy does allow not to base everything on final exam. There are papers students can submit, there are presentations students can be graded on. The issue with online proctoring in Pakistan, I am sure in any other country in this region, is another thing we haven't talked about is digital divide. I don't have laptop, I don't have a mobile phone. Then how would I participate. I was on a call and the presenter dropped off because he didn't have electricity. If we can solve the infrastructure problem even at the far corners of the country we can move forward. Online proctoring tools out there, universities are conducting some of the exams online whether it is multiple choice questions or turn your camera on and we are going to monitor you and you write, I think Dr. Imran has rightly pointed out, we are also dealing it with lot of difficulties. That's an area that everyone is struggling. The final thing I would say that we are also working on an "Open Distance Learning Policy" in Pakistan. We are looking at some of the MOOCs provider like Coursera and Edx, the courses they have and how can we leverage that and offer them credit, some of the great courses that are available internationally. I think that's the model we are going to have to start moving towards. How do we take MOOCs and great online courses that are available and incentivize students for taking them. The only way we can do that is offering some credit for those courses.

QUESTIONS FROM AUDIENCE AND ANSWERS

- **Question-1:** Plagiarism Checker in Benglai, how to take care of the issue?

  Questioner: Prof. Mostafa Azad Kamal.

  Prof. Dr. Muhammed Alamgir: Plagiarism checker is only important in case of thesis or papers not for exams and assignments. Thesis and Papers are mostly in English, so we don't need to be that much worried. However, in course of time we hope that our researchers and software developers will come up with their own plagiarism checker same as Turnitin and such being the case using those software we shall have Bengali Plagiarism checking also.

- **Question-2:** I have come to know from a former colleague that PERN is providing its subscribers some useful tools including Turnitin & MS Office 365. It would be really nice if BDREN can do the same for its subscribers. Would you please share your experience regarding how you obtained these tools?"

  Questioner: Professor Mazharul Islam, Director, IQAC of AUST, Bangladesh

  Asif Shahid Khan: We worked very closely with Microsoft on a nation-wide agreement. Consider it as a Buyers Club Model where every university in Pakistan going to Microsoft, it actually doesn't work. When a particular university is going to procure 1000 Licenses, we loop all the universities demand, and we have 200 universities in Pakistan, and in aggregate we are buying 80,000 to 100,000 licenses. That allows company like Microsoft to offer volume-based discounts. And we end up passing those savings to our subscribers. It's also important to highlight that PERN does subsidize licenses. The discounts what we get from Microsoft or Turnitin we also subsidize on them and end up giving the benefits to the universities. Where we are evolving as NREN is connectivity as step one. You have to have the connectivity and to have a low latency network. We have done a very good job there. The next step becomes offering services so that we can ensure the utilization of the infrastructure we have already deployed. So, our focus for last couple of years is mostly on the services. With Turnitin we have got a nation-wide agreement. We are looking at alternatives. One of the follow-up discussion could be on plagiarism. That would have been very useful. Lots of alternatives out there and they are not cheap. We got to think how we can work together and start addressing some of these issues. We can put BdREN in touch with Microsoft if BdREN can aggregate the demands from the universities, I believe Microsoft can offer licenses at a much lower cost.

- **Question-3:** What is your thoughts on online examination? What are the methods that you are practicing in context of synchronous proctoring such as preventing different types of unfair means during online exams? Do you prefer upgrading technologies to upgrading the examination methods?

  Questioner: Mr. Mehdi Hassan from a2i project, Bangladesh

  Prof. Imran Rahman: By default, online exams are open book. It is possible to take written online exams using Google Classroom (students submit via Google Docs), Moodle and other LMS. The chances of copying and plagiarism can be reduced significantly by setting the questions such that students will need to write answers using their own words and answers cannot be found and copy-pasted from

texts or through Google search. Random question sets help. Students can be required to keep videos on during the exam and the session can be recorded. In case a faculty, finds evidence of copying during script checking, a viva can be used to check, or

In case a faculty finds evidence of copying during script checking, faculty use one to one viva to check, and/or check the video recording of the exam to check for suspicious body movements, etc.

- **Subsequent Question:** Many thanks to Prof. Imran Rahman Sir for answering the question. The methods you mentioned seem quite promising for small number of students at a time and for continuous assessments. But as per the regulations, do you propose any ideas about structured/summative exams? What is our approach toward a reformation in policy?

  Prof. Imran Rahman: A National Online Policy, which has the inputs of key stakeholders, is urgently needed. My university will be glad to participate towards this effort

- **Question-4:** How copyright issue will be dealt with in case of online education?

  Questioner: Prof. Mostafa Azad Kamal

  Panelist: The copyright issue is a sensitive issue and will be dealt in the same way as that of documents distributed in onsite education.

- **Question-5:** How are teachers/administrators/regulators going to ensure 'outside time' for students? I have noticed that online learning gives freedom to schedule classes at late and early hours, which prevents 'down time' for students. Does the panel think this might have a long term impact on students?

  Questioner: Abhimanyu Pandey

  Prof. Dr. Ragel Roshan: Yes, it is a problem, but it is not anything different from the physical one if you consider blended learning as part of the physical one. The "downtime" has to be regulated if not already done so. In the Sri Lankan context, we are having a Quality Assurance Council under the UGC and it regulates the number of notional hours a student expect to spend for course credit. So, educating both the students and teachers of this will reduce this issue to some extent, in my opinion.

- **Question-6:** Can one of the REN panelists comment on how they see usage evolving from pure Video Conferencing solutions versus adoption of comprehensive LMS solutions with Video Conferencing solutions in Higher Education?

  Questioner: Mr. Mubasher Moin

  Panelists: There is no doubt that delivery of "online lectures" is not going to touch all the peripheries of "online education" and that's why a few of the faculty members are preferring "Google Class" or "Microsoft Team". Although Prof. Imran has mentioned in his statement that they are not full-blown solution and Mr. Asif has also branded them as "Lightweight LMS" Applications. A few of the faculty members are trying with "Moodle" to manage the classes. Although "Moodle" gives a better solution than that of "Google Class" and "Microsoft Team", yet it needs lot of customization from the users' perspective. But, considering it as a free solution, faculty members

are accepting it with all its cons. Prof. Imran's comments on "Google Classroom" is worth mentioning.

Quote:

We found Google Classroom extremely useful. The features they don't have, we are planning to move to other commercial and more professional LMS Application which has online delivery of education built-in. Such as: Canvas or Blackboard or Desire2Learn. Discussions are ongoing, Ultimately the load will fall on students because they got to pay for it. This is not the right time to do that. So, most of the faculties are using Google Classroom with Google Meet. Few of us are using Google Classroom with Zoom. And it's working quite smoothly even though these are not under one application.

Unquote

For PERN as well it is trying to accommodate the demand of the universities by providing "Moodle as a Service".

In Sri Lanka most of the faculty members are going with "Moodle" solution.

COLLECTED FEEDBACK

Feedback Form was distributed to all the participants. 23 out of total 178 participants came up with their feedback. Feedback was collected on different parameters grouped into 3(three) different areas on 1 to 4 rating with 1 being "Poor" and 4 being "Excellent". The brief evaluation is as follows:

- Session Facilities: 3.29
- Capability of the Presenter: 3.27
- Overall Facilities: 3.24

Parameter-wise details are as follows:

Capability of the Presenter

Overall Digital Talk (DigiTalk) Facilities
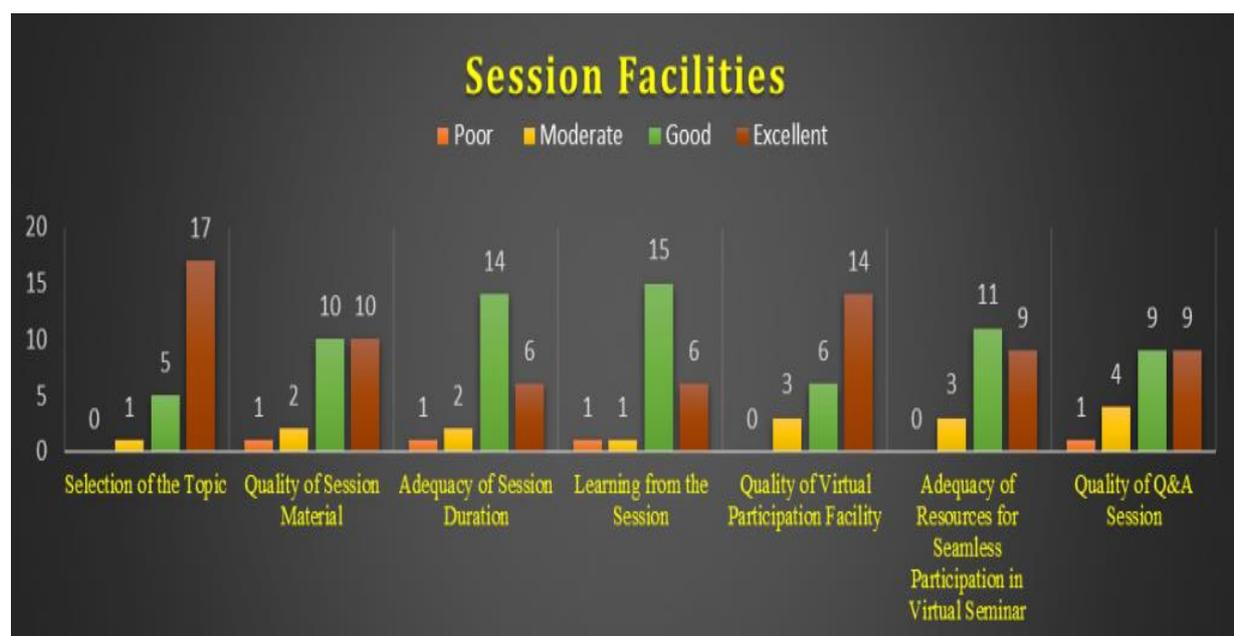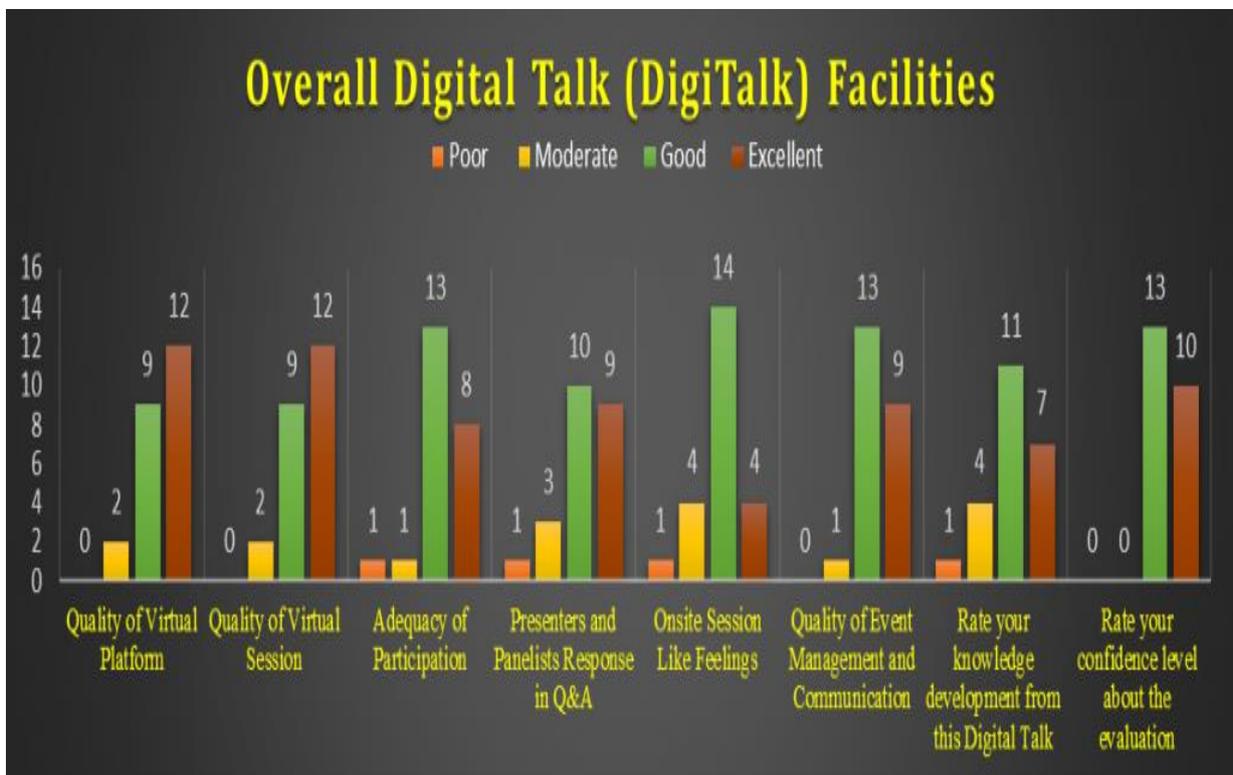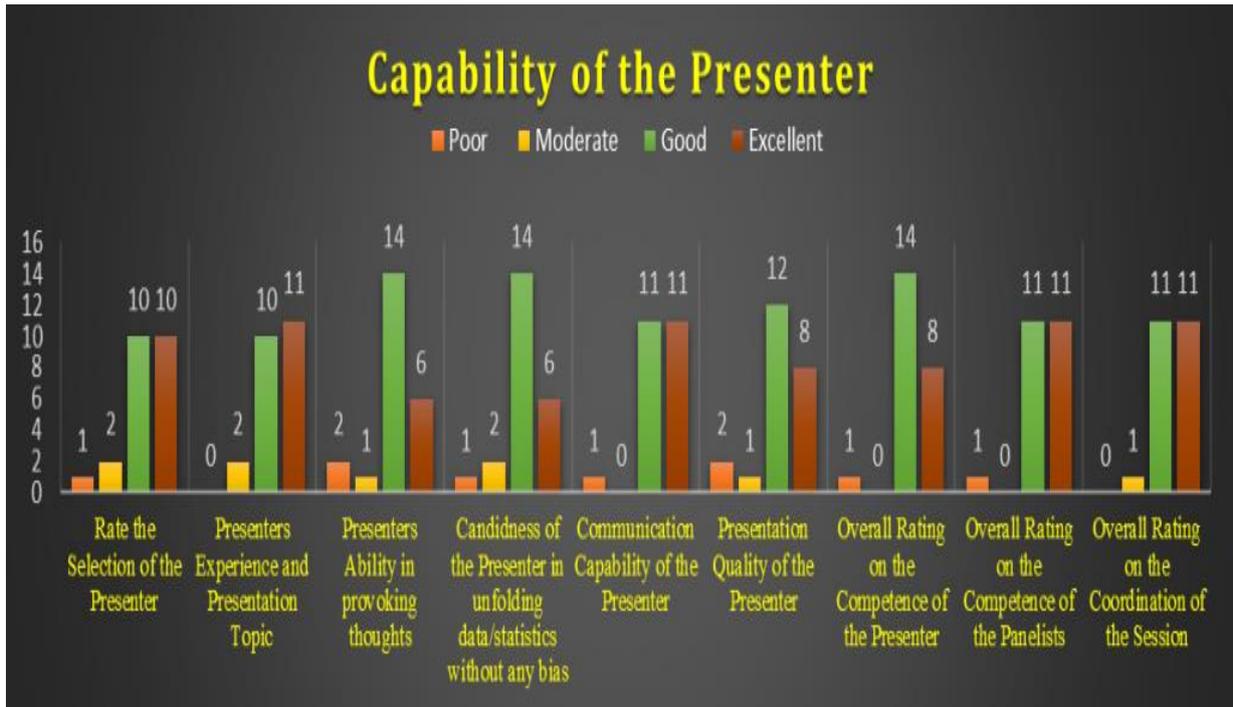
TAKE HOME

- Subject to affordability any renowned LMS Applications such as: Mindflash, SkyPrep, Knowmax, TalentLMS, Edmodo, Blackboard, Schoology, Brightspace, Canvas and others portrayed in https://www.softwaretestinghelp.com/learning-management-system/ can be used. Moodle or GSuite have been found as recommended among free applications although availability of GSuite as "Free of Cost" Application could not be confirmed. For "Moodle", customization is required which might involve technical expertise as well as costing. However, at the moment in Bangladesh, Pakistan and Sri Lanka "Google Class" and "Moodle" are mostly being used as LMS solution.

- National Research and Education Networks (NRENs) can come forward with centralized LMS Application following the footsteps of PERN.

- Zoom, Microsoft Team, Google Meet and Cisco Webex were found to be the recommended Video Collaboration Applications. Subscribers might evaluate them on the basis of cost and may go ahead with the cheapest solution only if they are not interested in any particular feature which is missing in the chosen software. Unlicensed Software was not recommended to be used in "Production Mode" as of now.

- NRENs should play a dominant role in offering the Video Collaboration Software considering this as one of the main strengths and services of NRENs. It is preferred to go with "On-prem" solution if NRENs want to get the flexibility in terms of saving internet bandwidth for obtaining more control on tariff which is very important in developing countries. NRENs can take the benefits of "Economy of scale" by purchasing bulk amount of licenses and then distributing the same to many different institutions.

- Ministry of Education, Bangladesh and University Grants Commission of Bangladesh should take necessary steps to formulate 'National Online Education Policy".

- To prevent malpractices in online exam, the modification in the whole exam system was suggested. And suggestions came from the panelists to get away from fixation on the final exam and make assessment on the basis of group works, discussions, presentations and submission of papers.

- "Synchronous" Mode of delivery of lectures no more works. The authority should come forward with how "Asynchronous" or "Blended" mode of delivery of lectures can replace the "Synchronous" mode and thereby making the teaching and learning more effective.

- The article written by Dr. Ragel Roshan available at https://medium.com/@ragelrg/essential-tools-for-online-teaching-and-learning-aac3ab7cb548 is worth-mentioning and is an eye-opening one.