

Problem Based Learning and Online Education in Developing Countries: Experiences of Indian B-School Graduates' Participation in Online Case Discussion: An Exploratory Study

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ABSTRACT

As the world has witnessed an unprecedented pandemic in the living memory, the year 2020 defied all human wisdom in every walk of life. As the scientific community scrambled to search for answers, in the meantime, the world came to a standstill. Physical activity stalled and virtual became the new reality. Education had to embrace virtual classes where all stakeholders were learning to get accustomed to the new normal. Some parts of classroom delivery seamlessly shifted to online methods, while other parts were forced to adopt. Problem based learning in general and case method, was top in the list of delivery methods that had to adopt online classes. This study aims at exploring the experiences of management graduate students regarding online case method. The focus group discussion technique was adopted to understand the experiences of management students from a top tier B-School in India. Findings suggest that the students had a disconnect with the online case discussions due to various reasons ranging from technical glitches and snags to case preparation and discussion, to peer-learning and faculty interactions.

Keywords: *Online Education; Case Method; Education during Pandemic; Problem Based Learning; Focus Group Discussion; Online Pedagogy*

INTRODUCTION

The COVID-19 pandemic challenged education across the globe, like all other walks of life. During the global lockdown, all teaching processes were continued online, wherein traditional pedagogical tools and techniques were being used online. Almost all the pedagogy had been developed for the offline classroom requirements, where teacher and student were physically present. Naturally, the discrepancies that arose due to physical distance and electronic gadgets between the teacher and student challenged the efficiency of the teaching and learning process. All pedagogical tools and techniques were affected; the difference was only the degree of impact. While some methods, such as the lecture method, had less impact, other methods which demanded greater teacher-student and student-student coordination were highly impacted.

Online education requires a host of aspects to fall in place to be effective. Problem based learning has been one such method that is highly impacted as it requires greater coordination to be effective. This research is aimed at understanding the extent of the impact of online education on problem-based learning. Further, this research also tries to understand which aspects of online education have been impacted and to what extent. For this purpose, this research employs the focus group discussion method, which has been widely used in the context of educational research that requires participation of students. Group discussion allows an in-depth enquiry into various dimensions of the research problem and brings forth the opinion of participants rather than testing the assumptions/conclusions of the researcher as usually is the case in administering structured

questionnaires. Further, as all the stakeholders are new to online education, the research depth and breadth necessary to construct a structured questionnaire is lacking at this juncture.

CASE AS A TEACHING METHODOLOGY AND PROBLEM BASED LEARNING

As teachers strive for optimal engagement, perhaps no other tool might prove as effective as the case method of teaching. Herreid (1988) opined humans are story-telling animals, and the teacher using the case method commands attention of students. This may be attributed to the habit of human beings tuning into stories during their formative years. Stories approximate the real world for the young minds enabling higher comprehension. Echoing this, Gillespie & Riddle (2004) noted that the case method attempts to bridge the gap between theory and practice by challenging the students to solve a real-world business problem. Students will have to use conceptual as well as analytical abilities, assuming the role of managerial decision-maker, to propose a feasible solution to the given problem after considering all the possible alternatives. The incentive of decision making instantly engages students. Case studies provide a wide array of delivery techniques, such as lecture, Socratic questioning, discussion, and group learning. Some cases are fact driven and deductive, whereas others are context driven (Herreid 1988). Stout (1996) observed that case analysis was popular among the student community, albeit being difficult compared to other activities in the class.

Savery (2015), Ten Cate (2007) and Thistlethwaite, et al. (2012) noted that case-based learning and problem-based learning are learner centric approaches. Further, they stated that collaboration, self-regulation, and promoting higher order thinking skills are the core principles of both the approaches and thus students' learning will be similar in both methods of teaching and learning. For this reason, Sistermans (2020) considered case-based and problem-based learning approach as alternatives to each other. Flynn & Klein (2001) observed that case-based learning is a variation of Problem Based Learning (PBL). Further, studies such as Finucane, et al., (1998); Neville (2009) have identified cases as a prominent method in adopting the PBL approach in medical education. PBL is "situated around authentic, ill-structured problems that require real world problem solving on the part of students" (Stepien & Stepien, 2006). PBL offers unique learning experience such as:

- 1) Learners use higher order skills to find solutions.
- 2) Learners think through situations and information given in the problem for better understanding (Gallagher, et al., 1992); (Hmelo-Silver, 2004).
- 3) Learners not only visualize solution to the problem but also predict short and long term consequences of the same (Hmelo-Silver, 2004) ; (Stepien & Stepien, 2006).
- 4) Learners reason like practitioners in PBL, which results in skill development (Hmelo-Silver, et al., 2007)

These characteristics make the case method more effective compared to the lecture method in realising the cognitive aims of the class (Böcker 1987). Further, other studies suggest that case studies are effective in bringing real situations into the class and thus cultivate problem solving skills (Kulkarni, Afshan, and Motwani 2018); (Farashahi & Tajeddin, 2018).

Hmelo-Silver, et al. (2007), opined that students learn content, strategies, and self-directed learning skills through collaboratively solving problems, reflecting on their experiences, and engaging self-directed inquiry. Solutions to these problems are embedded in the case studies in such a way that students are forced to cull out required information and data needed to solve a problem. The role of teachers alters dramatically in this process, as they do not hand out solutions (Hmelo-Silver, 2004). Teachers using the case method facilitate or at best guide the class in finding solutions. Therefore, case-based teaching results in better performance among students, compared to an instructive approach (Ross, et al., 2008). Case teaching, being learner determined and task specific pedagogy, the role of teacher is to coach (Coomes & Stephenson, 2001).

In the case-based method, the teacher acts as facilitator. Participatory and cooperative learning of the students takes the centre stage as the case describes an actual situation, commonly involving a decision, challenge, an opportunity, a problem, or an issue faced by a person (or persons) in an organization (Erskine, et al., 1998). Students need to use theoretical concepts and analysis to address the given problem and then discuss the case with peers in a classroom setting, with multiple students having multiple perspectives. This distinctive discussion component helps students to further interpret content and analyse information necessary to counter the arguments of fellow students and/or to defend their argument. Flynn & Klein (2001) asserted that cases make learning relevant and meaningful to the student through active participation in analysing, discussing, and solving real problems in a specific field of inquiry.

However, higher level learning can be achieved in a classroom setting when the students have fair and open discussion. In other words, fair and open discussion, are the pre-requisites of case based learning. These two pre-requisites are not often the characteristics of online case discussion. Further, these two were severely tested during the COVID-19 pandemic as physical classrooms were closed for a large part of 2020 and 2021. The students have had a difficulty in discussions owing to physical non-presence, lags typical to Internet connectivity issues and other related aspects (Raymond et al. 2016). This paper aims at understanding the students' perspective on the efficiency of online case teaching.

TEACHING CASES ONLINE IN MANAGEMENT EDUCATION

Prior to the complete lockdown during 2020, many studies tried to understand the efficacy of online case discussions. Smith and Bryant (2009) studied the efficiency of case discussions in an Introductory Business Statistics course and observed that students' reaction was mostly negative to online case discussion in an asynchronous mode, whereas, students on the campus offered positive feedback about face-to-face case discussions. Rollag (2010) explored effective and efficient ways to teach business cases online by using electronic discussion board.

Swart and Macleod (2016), observed that the asynchronous nature of online discussion does not reproduce the same efficiency as exchange of questions and answers, central to Socratic Inquiry, and within an online class is difficult. Further, Swart and Macleod (2016) found, that the combination of Socratic Inquiry and asynchronous teaching works quite well, if a "pure" model of either of the two is not rigidly adhered to.

It is important to note that few studies have investigated the efficiency of case based teaching in synchronous online mode. The 2020, pandemic has compelled instructors and institutions to teach cases in an online synchronous mode. This study would offer a new perspective to instructors around case based teaching in online but synchronous mode.

STUDENT PERSPECTIVE ABOUT THE ONLINE LEARNING ENVIRONMENT

In the e-learning environment, the instructor and the students are often not present at the same place or at the same time. This time and space separation is an impediment in laying out an effective learner-centered framework (Mccombs and Vakili 2005). To begin with, online learning is not the favoured learning method for some students due to IT issues (Raymond et al. 2016). Specific to the case study method, some studies found that learner collaboration is a huge challenge in online learning and without collaboration, figuring solutions to cases will not be possible (Hara, et al., 2000). Strengthening the argument, Cherney, et al., (2018) highlighted the need to evaluate student collaboration in the online environment. According to them case discussion online was time consuming. It is vital to understand the learners' concerns pertaining to pre discussion interaction with peers, as noted by Lim et al., 2020, the influence of peer learning on online learning satisfaction was fully mediated by Self-Regulated Learning.

Apart from these elements, it is vital to focus on student’s preparation before class participation, as has been discussed above, open discussion is a pre-requisite to case based teaching and the instructor is just a facilitator rather than a teacher (Gale & Kreshel, 2006). This discussion based learning emphasises a great deal of preparation before class such that students are ready to contribute to and learn from the discussion. Students often prepare a case individually, then in smaller groups and finally discuss in class (Orngreen, 2004). The preparation before class becomes crucial and challenging when students are in different locations and spending considerable time in front of computers. Sujatha. & Kavitha (2018) observed that lack of student-teacher bonding, feedback and peer-interaction were identified as inherent weaknesses that led to dropouts after enrolment in Massive Online Open courses (MOOCs).

It is against this background that McCombs & Vakili (2005), suggested to incorporate a technology that provides networking and collaboration opportunities for students in a learner-centric environment. Further, Missett et al., (2010) observed that in online case discussion, learning and engagement are functions of student-to-student interactions, with little instructor intervention. So, technology used in online case discussion needs to facilitate uninterrupted flow of multiple voices from various locations.

The following five pain points in online case discussions are emerging from the literature:

- Collaborative case preparation
- Difficulties in following the discussion
- Technical issues
- Coordination with instructor and peers
- Voicing opinions
- Focus during discussion

RESEARCH METHODOLOGY

This study has used the focus group discussion (FGD) method for gathering responses from the students. FGDs are defined as semi-structured interviews with a number of participants that aim to explore a specific set of issues (Edwards & Skinner, 2009). FGDs is used to capture qualitative data pertaining to attitudes, perceptions, motivations, concerns and opinions of participants (Krueger, 1994); (Gibson, 2007).

Use of FGDs in student related research is common as shown in Table 1. FGDs were used to document students’ experiences about learning (Dieden, Carlson & Gudmundsson 2019); (Hahn, Kinney & Heston 2020). FGD has been a popular method for capturing data from college students (Breen, 2006).

Table 1: Overview of studies where the FGD approach was used

Name of study	Phenomenon studied	Size of a Group	Number of groups
(Ansell 2002)	Gendered identities among rural girls	10-14	5
(Dieden, Carlson, and Gudmundsson 2019)	Investigate students’ experiences of learning echocardiography	4	2
(Meston and Galloway 2020)	Role of Student-centred talk in learning and engaging in the middle-grades classroom	5-6	14
(Blum et al. 2019)	Student perspectives on global health teaching	7	1

(Plummer and Busse 2006)	Language and Style in online learning	5-6	2
(Gilkison, Giddings, and Smythe 2016)	Experience of midwifery teachers and students who participated in a narrative-centred curriculum	14	1
(Keogh, Gowthorp, and McLean 2017)	Students' perceptions of blended learning in sports science education. The application and limitations of the same	5	5
(Recalde et al. 2020)	Educational impact of Industry 4.0 technologies	6	1
(Ashleigh et al. 2012)	Emphasis on transferable skills and the utilisation of e-learning environments as critical to the learning experiences of project management students	12	7
(Rich, Monaghan, and Bombak 2020)	Alternate frameworks about weight and health; and responses of such messages from girls. Utility of these perspectives as a possible approach to challenge weight-centric health education.	12	2
(Chung 2019)	To examine the students' perceptions of Problem based learning	5-6	14
(Phuong 2020)	Experience with online-based gamified activities and the perceived effectiveness of	4	3
(Sheehy and Bucknall 2008)	Views of young people regarding their views of 'how learning should be in the future'	6	4
(McGarry and Hinsliff-Smith 2021)	Impact of domestic violence and abuse on female survivors	6	1

For this research, the focus group discussion method will be ideal as it allows an in-depth and unambiguous understanding of students' opinions on the online case method. FGD permits the researchers to leverage group dynamics, allowing the students to be as open and as candid as possible, which might not be possible with the individual interview approach. Focus groups usually result in in-depth conversations while interacting with teachers compared to individual discussions which may provide inaccurate responses as the facilitator guides the conversation.

The FGDs were guided by the insights from studying the existing online-learning literature: as noted in the literature review, queries regarding technical barriers, communication issues, collaboration with instructors and other learners, participation in case discussion, focus during case discussion and pre-discussion preparations have been at the core of the studies.

Table 2: Unstructured question used during FGD

Sl. no.	Query	Importance of the questions (as identified by earlier studies)	Relevant work supporting importance
1	Technical and Network barriers	If the barriers relating to technology and/or network impact students' participation negatively and the learning therefore also will be impaired.	(Thompson & Copeland, 2020)
2	Communication during discussion	At the core of learning through case discussion is exchange of thoughts during the session, thus, clear	(Lee, et al., 2009)

		communication is paramount for learning.	
3	Collaboration with peers	Often case preparation, discussion, and post discussion analysis demand collaboration among peer group. When on campus this happens seamlessly; even without realising students indulge in discussions.	(Ching, 2014)
4	Participation in case discussion	Every student needs to get to voice thoughts, opinions, arguments, counter arguments, questions and seek and provide clarifications. The discussion often turns into a debate among the students and students learn two things through the process: a) subject matter related to concepts discussed and b) the nuances of discussions and debates.	(Sisternans, 2020)
5	Focus during case discussion	Distraction or not able to be attentive will lead to missing the either line of discussion/arguments or certain key points. Either way no students can participate and contribute meaningfully to the discussion.	(Espino, et al., 2021); (Humphrey & Wiles, 2021)
6	Pre-discussion preparations	It is a common practice among groups of students to exchange notes before attending discussion. This helps in expanding the thoughts of individual students and correct/strengthen their ideas. Ultimately these exchanges improve the quality of discussion.	(Tripathy, 2009)
7	Discussing with instructors before and after the discussion	The communication lines between instructor and student need to be working through the preparations, obviously during discussion and also post the session. Students, at least some of them, will be so passionate that they will have many questions at every juncture of learning from any case.	(Dennen, et al., 2007)

Participants' profile

The participants included those students exposed to both classroom based as well as online case discussion as part of their Masters in Business Administration program. The selected school was in Hyderabad, India both for logistical reasons and contextual coherence.

A sample was drawn from enrolled students on the following criteria:

- 1) Participant should have participated in classroom as well as online case discussion.
- 2) Students should be exposed to a minimum of 10 case discussions each in online as well as classroom settings

Students in the second year of the Master of Business Administration programme were chosen. The most important criteria to select the students was based on the participation in classroom case discussion during the 2019-20 academic cycle as well as participation in online case discussion synchronously in the first half of the 2020-21 academic cycle. This was done to ensure that all the students had experience of online as well as offline case participation so that they can compare case discussion in both settings. All eligible students (**n=68**) were communicated about the purpose of the study through a detailed e-mail. The email emphasised that participation was voluntary, and anyone can withdraw at any stage without any restriction.

Data collection

Once the students joined the FGD, the research aims, terminology, and definitions were reiterated. Further students were assured about confidentiality and anonymity of any data collected during the FGDs. To avoid dominance of one member and also to establish the scope of discussion, ground rules were announced at the outset (de Ruyter, 1996). The focus groups were conducted online during October and November 2021. Prior to that, facilitators had a discussion over conference call with each focus group once to explain the topic, nomenclature, and other related aspects. To alleviate concerns about terminology, facilitators used synonyms and examples. At the end of it, an online mechanism assigned a code to each student and the facilitators were not aware of the codes. Each student was asked to generate random number series in an excel sheet using the RANDBETWEEN function (between 100 and 999) and were asked to self-assign the fifth number in the series. To ensure no repetition of numbers, numbers were combined with alphabets. Students were asked to generate two character series from the same excel sheet using the CHAR(RANDBETWEEN(x, y)) function, where the difference between x and y is 26. Each student was asked to choose his or her own x and y. This process was repeated twice in two adjacent cells of the excel sheet, so that students had two alphabets, further reducing the chance of repetition. Each student was then asked to pick two adjacent alphabets from the fifth row in the series and prefix these two alphabets to the number from the first series. Hence, a student's code would be for example, AB231 and others will follow the same pattern.

The FGD was conducted online, through Zoom meeting, with two groups; one group comprised 10 members and the other had 12. To maintain anonymity students were asked to join the meet with their codes and without video. During the discussion, facilitators leaned on directed questions to prompting students to think on a specific aspect of case discussion and participate in FGDs. Both the discussions lasted over an hour each. An array of questions was used to facilitate the discussion (refer to Table 2 for the questions). The discussion was recorded and then transcribed verbatim. No student could be identified in the transcripts, as they joined the meeting with the code and not their names (Refer to Table 3 for codes). Every student's view was taken by nudging in case any student was not actively participating.

Table 3: Codes of participants

Sl. No.	Group 1	Group 2
1	XG534	EK427
2	RK723	OJ542
3	TD118	ZC879
4	MR596	GD458
5	AS637	JT906
6	SB746	NS303
7	VA394	DT193
8	DX695	SS926
9	CJ275	RA718

10	PN583	AG506
11		CM054
12		NV357

RESULTS AND DISCUSSIONS

The results are presented using the primary research questions as the reporting framework (Keogh, Gowthorp & McLean 2017). Students' perceptions on online case discussion were being discussed in the group using the following research questions pertaining to technical barriers, communication issues, collaboration with instructors and other learners, participation in case discussion, focus during case discussion and pre-discussion preparations. As this kind of research requires, a sample of chosen quotes were used to represent the opinions of the students.

Technical and Network Barriers

Technical glitches were the most often mentioned complaint by the participants. Technical glitches disconnected the class from a student or disconnected a teacher from all the students. Either way, students lose the track of what is happening and even when things get back to working well again, concentration will be difficult for some period - leading to further loss on the discussion. The participants observed:

SB746: When there are technical glitches, we have experienced in the recent case studies as well, even if you miss a single word that the faculty is highlighting, a lot of times I get lost and not able to concentrate then.

The glitch might result from many factors, such as electricity, device malfunction, Internet speed and an array other issue, and when the glitch occurs, students' grasp is severely impacted. In the opinion of the participants, these glitches have been so severe that they reduced the efficiency of case discussion.

NS303: Where do you see things going against? There would be no electricity or there would be, you know, Internet issues.

AG506: During the class, many times it so happened, due to poor network connectivity, we are not able to understand the words which the other person is speaking because of the lag and also the point that professors are trying to emphasize or make us understand. We are not having the complete impact of the case study as we go through the way we used to have in the classroom, where we could understand it to a much better and deeper level.

Communication during online discussion

In a classroom setting, when students can observe each other, and communication is enabled by body language and non-verbal cues even when words are not being exchanged. When words are exchanged, non-verbal cues help the listener to decipher the accurate meaning of the words and thus provide for better understanding of the listener. One student observed:

PN583: Nonverbal cues are just as important as your verbal cues, and I think on an online context, sometimes nonverbal cues are very not visible, especially facial expressions and gestures. In online every word that you speak is listened to with great care and everyone listen it properly due to the fear of being missed out on something. But in offline you do not need much concentration as you can go in a flow.

Due to the lack of non-verbal cues, coordinating is a difficult task. For instance, in the classroom, when the instructor expects a particular student to answer, just looking into the eyes will motivate the student start answering. In the online environment, the instructor needs to call out the name and if the voice is interrupted due to any glitch, students would not hear and thus will not answer. And this improper coordination adversely impacts communication and preparation as well as observed in the following responses:

AS637: Classroom learning is best in terms of understanding the content or peer to peer coordination and coordination with the professor on one to one basis. How much ever we try it, it's not going to be achieved on an online discussion. Also, my understanding is far better than what I realized in classroom environment.

GD458: I think in offline classes there is fear among the students due to the eye contact between a teacher and students. While during case discussion in the class, teacher might ask anyone any question, but that is missing in online classes. So, I think, students don't feel it's so important to read the case because it's not possible for teacher to ask all the students.

Lack of physical presence is also negatively affecting communication among the student community. In a physical setting, body language will indicate the emotions of individuals and gauging those emotions one accurately understands or at least attempts to understand the other person's state of mind as articulated below:

JT906: I think when two people are opposing any point of view or like there's flipping as an argument to one specific point, then that tone of the discussion might be misunderstood by other people. Because, if I'm opening discussion, I will be able to gauge emotions or expressions of my classmates, and according to that will be able to understand if they're normal or are they charged-up. But in online mode we are not able to gauge the tone of other students.

MR596: So physical classes are, according to me, far better because there's so much that you learn. If you are under confident, you learn that you should be confident you should be able to speak in front of the other people. The eye contact, how to behave with people, how to concentrate, how to present your points, how to counter, etc. can be learnt.

CJ275: We always talk about how your body language should be while presenting. People should be able to even understand from your body language itself. So, the body language also plays an important role in communication and therefore it's not feasible in the long run to be online for everything.

Collaboration with peers

The most important feature of Problem Based Learning is collaboration among the participants. The quality of peer collaboration defines the quality of learning through problems. Thus, it is imperative that any environment, either offline or online, must be conducive to encourage the best possible collaboration among the students. However, online case discussion seems to be lacking on this crucial aspect as indicated below:

DX695: When we were on the campus we used to meet, used to sit together, used to understand or used to exchange the thoughts. Now probably this kind of an exchange is also possible, but whether that exchange is being facilitated is the question. And there are some issues out there; there are some limitations or hurdles.

One of such hurdles is time availability for the entire group of students:

RK723: All the members of the group are willing for further discussion and analysing the case parts, but few times they are available for a discussion. They might be having network issues, or they might, or they might not be available because they're out of home on domestic work or any other reason like that. Moreover we can't even pressurize them. At home, it becomes difficult because everyone will be having their own ritualistic work. And since families are also at home, we can't totally devote time to discuss.

RA718: Just to add, the environment of college and we all been physically present. That is more conducive towards just getting together and discussing the case as opposed to when we are all at our homes and then arranging a zoom meeting or something like that. Seem very difficult. Moreover, schedules can be different and it could be difficult to align on those schedules.

DT193: Even if it happens, I don't think it's at the same level as a physical discussion, because there might be certain points wherein there's a disagreement between two members. And there even though you try your best to make the other person understand, there will be a disconnect. You can't completely, you know, get your point of view across where you would do in a physical setting.

Participation in case discussion

This is one area where the students seem to be having many issues. They have been quite vocal about the differences between online and offline case discussion. With the kind of liberties offered by the online environment, maintaining quality case discussion is very difficult for the student community as shown below:

OJ542: I haven't touched the case itself and I have the liberty to stay in quiet while the class, discussion is going on, I can simply mute my mic, mute my video, literally, skim through the case, and whenever a particular part is being discussed, I can just add that point there, and I can claim that I have participated in the class and I can go on.

Even when the students have prepared for the case discussion, other obstacles drag down the quality of discussion, such as:

SS926: When I'm trying to make a point and for example say a certain person is having some network issue and he or she is not able to hear it So without even listening to my point, he or she is continuing in between.

Not knowing when to start or stop, to be in tune with other participants is another hurdle that the students have raised as follows:

VA394: See when I am speaking and at the same time another person also starts, so both of us started speaking together. Then one of us has to back down and his/her point doesn't go through. If it happens twice or thrice then the person becomes demotivated to speak ever again. I observed the fact that the number of individuals who spoke in the offline case discussion was much higher than those people are speaking right now. Right now, it's only a same set of individuals are speaking again and again, if you noticed.

Another student agreed with the statement noting:

XG534: *Yeah, we can say that we are raising our hands here as well, but so it's kind of not possible to calculate when to raise. But in class, if I'm raising my hand, others can see that and if a speaker is speaking then I can put my hand down waiting for my chance.*

Due to these issues, the number of people participating in the discussion has reduced, negatively impacting the quality of discussion as illustrated below:

MR596: *What I'm seeing after this entire semester is that in every class, they're like five or six people who are actually participating. I'm not really sure if the remaining are participating or not participating. Yeah, they might think they are not really that comfortable. They may be really good students, but speaking out is something that they would need a nudge from the faculty or from the friends. But when it comes to online discussion it's more like you are on your own. You should be an extrovert to, grab our chance to speak against hurdles.*

EK427: *When we're in offline mode, there is a conducive environment for a discussion. We're in a class setting and you know the degree of expectations. Be it the way you are expected to dress or the way you are expected to speak or anything else in the class you are expected on a particular scale. So, when you're in class, you're much more formal and you have right mind-set to approach the case discussion. But when you're home in an online class, you have your own comfort. I can say this as there is an option for me to switch off the video. I can be on the bed, I can be doing something else, so sometimes I might not be able to give my 100% attention for the entire case discussion. I might be indulging something else at the same time. Discussion, you know, is an environmental aspect in that sense.*

OJ542: *I remember clearly in second semester, there was one case discussion going on where faculty asked, students who are going with a particular solution to sit in middle row and others who are against the solution, to sit in the right row. So that way we were having a healthy case discussion in the classroom environment where certain section of people was having certain point. Creating that kind of environment in the online environment is not possible. As a result, I can clearly say that during case discussions, including myself, there are only 10 people and their voices or only echoed for the whole class. So that way the class participation as a whole has gone down completely.*

GD458: *Because of all this, contrary opinions are not being made. If I am opining, you know another person would oppose me, on my facts, or on any other aspect say practicality not a feasible idea, or might say I am not making a lot sense. You know that kind of commenting is absent in an online model discussion. So even if we intend to contradict someone, because most of the time our mikes are mute, we are not able to.*

Some students mentioned that they are not so attentive in the online case discussion, as illustrated below:

TD118: *I think that in physical discussion when we are in a classroom, students are more attentive and teachers are able to pay more attention to individual students. Suppose there is some point that one student put forward a point, and there are a number of people who agree with that point, they'll raise their hand in agreement. Teacher will be able to see that.*

NV357: *Also, if a student is not speaking, teacher can identify and encourage he or she to participate. Now that's not quite possible in online discussions, because there are some constraints like the there's some limitations where a teacher can like pay attention to everybody.*

Two-way communication was also affected as noted below:

XG534: It often happens like not only in case studies, we might miss out a point during a lecture what the professor is saying on the other side. So, being in class we could ask for the point, or you know, collect it from the one sitting beside. But in online classes we will have to take the responsibility on your own, like you will have to be much more cautious or much more attentive because if you miss something, very difficult to get that point.

Focus during case discussion

Short attention span is an important factor that is obstructing the students from performing to their potential in online case discussions. Some views illustrate below:

VA394: The duration of lectures is 90 minutes, and personally what I've observed about myself roughly after 65 minutes or so, ability to focus and be on the same line with what the faculty is teaching tends to reduce. Zoning out is much easy, but I feel like in offline mode concentration is much easier.

CM054: I completely agree with less attention span, because what is happening nowadays is that focussing for one and half hours is impossible. I'm totally focused in the class earlier in offline. Maybe the level of concentration is very less because there are external elements at home. Like if you take my example, I have a pet at home and if there's a discussion going on so the pet distracts me.

ZC879: I agree, when you're at home you are at ease or like to relax or something, but you're in the class as well. So, you cannot put your full concentration on the discussion. Even though seating posture and environment also affects concentration. I think we become lazy or something when we are at home.

The home environment is not designed to provide the necessary space for students in general and for online discussions in particular. Many interventions render online discussions and participation almost impossible, as shared by the participants below:

JT906: I think there are many uncontrollable elements like violin played in the background. The plot next to me, there's a construction going on resulting in loud noise. So maybe I will not be able to concentrate much in the discussion or there will be so many comments from surrounding areas. And my second point is that for the entire discussion, student needs to like sit right in the class, like they can't even for one minute go away from the laptop, take a break lest they miss on discussion.

DX695: Your teacher might have asked some question and discussion is going on and there will be people screaming from behind like your mother or sister or brother or anyone and you are like completely distracted from that point and you cannot participate in that discussion. That is also one drawback.

Pre-discussion preparations

This is one area where students expressed some content over online method. For the students, the online method provided a bit of freedom, in case if they have not gone through the case before the discussion. Availability of Internet has changed the way they read and understand the case. As noted below:

NV357: *Advantage of online is you have a handful of resources at your hand, so even if you're not able to go across a 20 or 25-page case study, you get the summary online which can give you time or points, which you can put in the discussion and you will have at least three or four points or ways in which you can contribute to the discussion. Whereas in the offline mode, if you have not gone through the case at all, you will find it next to impossible to participate in the discussion.*

However, they were not at all happy that they are finding it difficult for discussions before the class. Students discuss the case in small groups before the class discussion to ensure that they do not miss finer points and also to get another perspective over the problem and solutions offered by the case. Some noted:

RK723: *When we were on the campus used to meet, used to sit together, used to understand or used to exchange thoughts. Now probably this kind of exchange may be possible, but that exchange is not being facilitated as there are some issues out there, there are some limitations or hurdles.*

AG506: *All the members are not available for discussion and analysing the case. Very few times we are all available for discussion. Students might be having network issues or might not be available because they're not at home or any other reason like that. And we can't even pressurize them. At home, it becomes difficult because everyone will be having their own ritualistic work. And since families are also at home, we can't totally devote time to discuss.*

AS637: *The environment of college and physically presence are conducive to get together and discussing the case. At our homes even arranging zoom meeting or something like that seems very difficult as all our schedules can be different and it could be difficult to align those schedules.*

Another important aspect that has been a source of grievance is the non-availability of physical copies of the case. As per the popular opinion of the participants, printed paper offered convenience to read and make notes at the margins. This made it easy during discussion to make the points and follow the discussion by quickly accessing the relevant content (under discussion at any given time) in the 20-page document. A few participants noted:

OJ542: *I've observed that earlier reading was easy. We were handed out physical copies of the case so, but right now unless we choose to print that PDF (electronic file of case), we are reading it either on a laptop or a tablet. Interacting with the physical copy of the case itself has a lot of learning. You can highlight something, you write on it, jot down points, make calculations, write arguments and other such activities as part of preparations. All these are not possible when you read from the screen.*

PN583: *Reading from screen is inflexible; you have to separately create a word doc or something like that for preparing. Also, reading from screen puts pressure on the eyes and I've also experienced that it is difficult to start reading the case on this screen.*

These difficulties, according to some students, are reducing concentration and thereby negatively impacting quality of discussion. One student noted:

SB746: *When we have a physical copy, we are able to concentrate more while we are studying, we're trying to understand the points, we can shuffle between the pages and thus, we can understand better. But while coming to online case study, we are more into completing the case study rather than understanding the core concept.*

Discussing with instructors before and after the discussion

As the students and instructors are separated by physical distance, getting in touch to resolve certain doubts or seek further clarifications has also proved to be almost impossible. One student noted:

NS303: (In online) *I think it is difficult to go back to the professor and discuss about something. On the campus, what happened was if we had some issue or some point and we would go to the professor and talk. This can happen in the corridor or even in the canteen or any other place not necessary that we have to barge into the professor's cabin. We can every time get back to it and talk to them personally as well or in class or somewhere. But now (in online) it is difficult.*

The Verdict

Overall, students were of the opinion that online case discussion was not effective. In fact, the very purpose of case discussion and its objectives are not being met due to various issues that cannot be resolved. They noted:

ZC879: *It's like you know, we're experimenting with something. That's happening all over the world. But given if an option of taking online versus offline, offline would be far better and far transparent also. So if you us ask which one you will prefer online or offline. Offline unanimous unanimous!!!*

VA394: *If they want online and offline. I think most of them will prefer offline itself. because even in private discussions this point is coming across again and again. One person has gone to the extent of saying I don't feel like I am studying at all. Sorry, maybe we have been conditioned that way. Maybe that is a factor, or maybe we are not able to grapple with the challenges being thrown by the computer.*

AS637: *Or just that our technology has not improved to the extent where interactions become seamless. That is, an important factor. What I'm trying to say is if I talk for 10 minutes and for two moments if you lose me out, you get frustrated. Yes, so maybe. Maybe we have to wait for that era where I just wave my hand like this and then I see whomever I want to see.*

IMPLICATIONS AND CONCLUSION

This research brings to the fore difficulties that the student community is facing to discuss case studies online. By their testimony, the online method is not solving the purpose of including the case discussion in the curriculum. On the contrary, the entire method is making the students repulsive to online case discussions. This certainly is not an anticipated scenario.

When things get normal, higher education will be delivered in hybrid mode. It may so happen that some parts of higher education remain online, for instance executive education or maybe distance education. These problems that students are facing, will be helpful in designing the delivery methods, especially in those learning contexts where the problem-based learning approach is imperative. These insights will help make online learning better.

The literature and the participants views identified various online activities that facilitate building and assessing competencies online. These activities include peer feedback, online collaborative group work, virtual case-based activities, online discussions, and reflection along with interaction with facilitators. The necessity for a new assessment rubric was voiced by the participants,

including the creation of an e-portfolio, or asking a student to film themselves performing a skill. The students also stressed on an (online) competency-based curriculum that should provide a scope to the student with the opportunity to demonstrate a skill virtually.

These outcomes are inconsistent with the findings of Cochran et al., (2016). They discovered common themes that cut across online programs that include the conveniences of learning, the need for consistency in course design across an online program, better use of certain time management tools, the importance of faculty presence, and students' perceptions of certain activities as 'busy work.'

The findings such as learners facing technical glitches, and Internet connectivity had also been observed in other learning situations. Even the facets like the informal setting of learners or even absence of non-verbal communications during interaction are part of the online learning environment which were echoed by earlier studies.

Peterson (2016) recognised the rapid growth of educational technology (EdTech) industry in the USA before the pandemic. Massive Open and Online Courses (MOOCs) have been lauded as a potentially disruptive force for making higher education scalable to administrators thus making it affordable to interested students (Ansah, et al., 2020). Growing substantially in the last few years across the globe, MOOCs have attracted thousands of users (Classcentral.com , 2020); (Altalhi, 2021) (Meet, et al., 2022). Going forward, the following may help higher education stakeholders to embrace the problem based learning approach in an online setting.

Implications for PBL (Case) Teacher

- Need to formalize a mechanism for learners to meet (virtually) before the discussion to improve the quality of learning. This effort needs to be incentivised.
- Teacher should use various technology tools to offer opportunities for learners to interact with case teacher after case discussion. Mechanisms can be the discussion forum, polls, or live interactions.
- During case discussion, the case teacher should use various interactivity tools such as chat, poll, and collaborative boards, to make the learner attentive. Such activities would function as a structural as well as reflection spot to engage them during the discussion to addresses attention span issues.
- Case selection needs to be made by keeping in mind the online environment. Small and simple cases which can be discussed in 60 minutes may be an option and the remaining 30 minutes used for activities such as polls and quizzes.

Implications for administrators of Higher Education Institutes

- Platform selection needs to accommodate learners with low bandwidth and enable a seamless experience.
- Should offer additional manpower in the form of teaching assistants to the case teacher. At least three people are required. a) One for keeping a tab on the chat and constantly feeding the teacher about important reactions. b) One person would observe all screens to ensure all learners are in front of screen. c) One more person will act as analyser to indicate quick results, trends, outliers to teachers.
- Online case discussions need to be limited to 20-30 students to facilitate better interaction and increase the chances of reaching out to most of them
- Transcript of case discussion should be shared with the learners post discussion.
- It is better to courier the cases along with sharing the digital copies. Let the learner choose between digital / hard copy.

Implications for Technology Developers

- Real time log of learner participation needs to be offered so that case teacher can identify non participants or high level participants.
- Such dashboard has to be coupled up with qualitative data emerging from polls and chats. Such analytics would help teacher to identify 'cold spots' and 'hot spots' in the classroom.
- Feature of 'find time' for learners so that software will understand free time of all members and schedule meeting accordingly (reduce coordination challenges).

FURTHER RESEARCH

To support the trends that emerged from the participants, a further study to support teaching staff, program coordinators and directors is recommended. This is specifically important for the institutions that intend to merge case or problem-based learning with competency-based education in an online learning environment. This recommendation is in line with Sistermans (2020).

The online case method needs a different mechanism and process compared to the offline class; therefore the curriculum, pedagogy and delivery mechanism need to be different. Until now, the offline curriculum is being used for online classes as well. It becomes imperative for educators to research the appropriate curriculum, pedagogy, and delivery mechanism for online classes. This needs to be done considering a) the differences in physical setting influencing students' concentration, b) the limitations of online devices such as screen sizes, audio quality, and network bandwidth, and c) keeping in view the above two, pedagogy and evaluation rubric must be redesigned.

This being an exploratory study and one on students from the developing world on this topic, there is a need for more rigorous studies in the near future to cover many other facets of online learning, for instance studies on liberal arts, journalism, literature and other courses or studies on a different demographic such as high school students or studies on students from rural areas.

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