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Online Classes Design and Delivery Based on Student Responses

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Abstract

Covid -19 has made a series changes in all system of life especially in education. As a result, education has changed dramatically with the distinctive rise of e-learning. The present study was aim to examine the preference and perception of MBBS student on newly introduced online live video classes. Methods: For this purpose, an online questionnaire survey consisting of closed and open-ended questions on nine different categories such as accessing online video content, previous experience with online learning, interaction with video lectures addressing the content, duration, visualise, timings and screen size, perceived learning experience, the online content learning assessment methods and the experience with the online learning management system. Two hundred and thirteen undergraduate medical students were participating in this study. And it was conducted by the large medical institution in Andhra Pradesh. Results and conclusions: From the results the e learning methods was encouraged and its gaining popularity among the medical students and faculty only 2.3 % were not satisfied with the online classes on comparison to the traditional methods of learning. But the usefulness and acceptability of e-learning among medical students as a part of their curriculum is still not fathomed in medical education.

Keywords: medical education, assessment, video lectures, e-learning, feedback, questionnaire.

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Introduction

The e-learning courses and lectures provide medical students with learning opportunities[9]. While devising the e-learning classrooms, one should consider the various situational, institutional, and dispositional reasons for which students do not perform well in online classes[1]. The reasons can range from such as administrative problems, degree of interactivity, prior academic preparedness, technical skills, motivation level, time and support for learning, and availability of technical assistance designed to troubleshoot[1,13]. Assessment is a fundamental and essential issue in non-traditional learning environments. Clear understanding and the strategies for assessment are critical for both teachers and students in creating online environments for more effective teaching and learning[22]. Teachers need to identify and implement assessment strategies and methods appropriate for online learning. Teachers also need to be familiar with the potential of a variety of technology tools for monitoring student learning and improving their teaching effectiveness[4]. From the students' perspective, good assessment practices can show them what is essential to learn and how they should encourage learning; hence, engaging them in goal-oriented and self-regulatory cognitions and behaviours.

There seems to be an urgent need to devise a dynamic design expected to lead to higher learning outcomes and more positive approaches toward learning[4]. The faculty engaged in online teaching should understand the concept of flexible pedagogy that takes into account the audience members, the set of appropriate instructional and technological tools and strategies, course cadence or pace, and creating and maintaining an online learning community, as well as valid and reliable assessment measures[20]. This type of online learning can be designated as negotiated learning, relying on using gradual community-building strategies, prior personal knowledge, and effective communication. This also creates a flexible pedagogy that takes into account the audience members, the set of appropriate instructional and technological tools and strategies, course cadence or pace, and creating and maintaining an online learning student community, as well as valid and reliable assessment measures[20].

The objective of this paper is to describe the methodology and measures undertaken to devise an effective, influential dynamic implementation of the online teaching and learning for medical students. The student involvement in this endeavour is engagement which is both structured/formal and unstructured/informal following every week in the online environment.

The Learning Management System (LMS), Moodle, along with ZOOM video conferencing tools are used in this online teaching[2]. Students feedback is gathered through google docs/ questionnaire. Both sets of evidence of student engagement during the online lectures and feedback are used to help the researcher devise and adapt the course content and delivery methods to suit the varied needs and interests of students, as they emerge from the wide range of online communicative exchanges.
Online classes are assessed through a questionnaire designed under the following criteria

A. Accessing the Online Content
   a. Instrument: Mobile/ Tablet/ PC/ Laptop
   b. Network: Poor/ Satisfactory/ Good/ Excellent
   c. Audio-Visual Clarity: Poor/ Fair/ Good/ Excellent

B. Online Experience:
   a. Whether underwent any online courses: Yes/ No. If Yes whether it is assessment or learning or both
   b. How long he/ she underwent the course:

C. Lectures:

a. *Content:* Whether the content of the lecture is interesting to the participant? The content mainly consists of textual material in routine physical lectures; do the participants prefer the same format of PowerPoint slides? If yes, why? If no suggest
b. *Duration:* What should be the duration of the lecture? Whether they prefer short lectures of 5-10-minute duration followed by immediate assessment or a lengthy say 45 minutes of single lecture? What should be the optimal duration of an online lecture? Do you prefer varying duration of lectures for different subjects?
c. *Visuality:* Whether the same teachers should teach or do they prefer other college teachers/ guests to teach them? Whether they prefer a complete view of the teacher or only the portrait view? Whether classroom background is acceptable or any other background? Whether they prefer the participant video at the administrator screen? Does the participant feel isolated in listening to the class?
d. *Assessment:* Whether before beginning and after completion of the lecture, some form of assessment is preferred? Whether they would accept immediate online question & answer session after the lecture? Do they mind asking questions specific to one or more participants (students)?
e. *Timings:* Whether participants are satisfied with the timings of the online (10.00 am to 12.30 noon)? Do you suggest any suitable timing? If yes suggest If No

f. *Screen Size:* Which screen size do you normally watch for lectures?
g. *Experience with Online Lectures:*
   a. Acceptability: Cultural/ parental/ Peer/
   b. Adaptability: Personal/
   c. Learning experience: Enjoyable/ Lost personal touch
   d. Preferability: Personal/ Priority
   e. Difficulty level: Personal/ Peer
   f. Suggestions if any:

D. Learning Platform:
   a. Have you heard about this video-conferencing platform before: Yes/ No?
   b. Are you conversant with the facilities available in this platform?
      i. Asking questions/ Raising hand: Yes/ No
      ii. Mute/ unmute: Yes/ No
      iii. Video sharing/ file sharing: Yes/ No

Constructive feedback can transform a student's learning experience. It encourages them to reflect, deal with criticism, learn better and stay motivated.

However, providing feedback in an online course is not as straightforward. In fact, the lack of meaningful feedback happens to be one of the biggest challenges online learners face. In a traditional classroom setting, instructors get more facetime with students, and this allows them to gauge students and offer frequent feedback accordingly. The same cannot be said about online classes because the interaction is limited.

Research Questions

1. How are students accessing the online video lecture content at their homes?
2. To what extent are students' perceptions of online video lectures related to the content, duration, visuality, timings and screen Size?
3. What is their overall experience with the online video lectures specifically concerning the adaptability, acceptability, learning experience, preference and difficulty level?
4. What would be their preference for learning assessment of online lecture?
5. What is their experience with the online learning management platform?

Methods

This mixed-method study employed an online questionnaire survey consisting of closed and open-ended questions on six categories. The methodology was chosen because the integration of qualitative and quantitative data would lead to having a better understanding of the research problem than either of each alone. Moreover, this mixed-method would allow better corroboration via triangulation and in-depth visualisation of the research problem.

Participants

The participant sample for this study was a purposeful selection of the I MBBS students who underwent the ten-day-long online video lectures during the COVID-19 lockdown period in Andhra Pradesh, India. The selection criteria included: (1) undergraduate students participated in the online video lectures on Anatomy, Physiology and Biochemistry during I MBBS. and (2) Medical teachers' approval to explore the design of the online courses. All participant students were instructed to answer the online questionnaire and submit it in the stipulated period. Their participation was mandatory. However, those who are unable to access online video lectures are excluded from this questionnaire survey. A total of 213 out of 227 undergraduate students responded to the survey questionnaire.

Data Collection

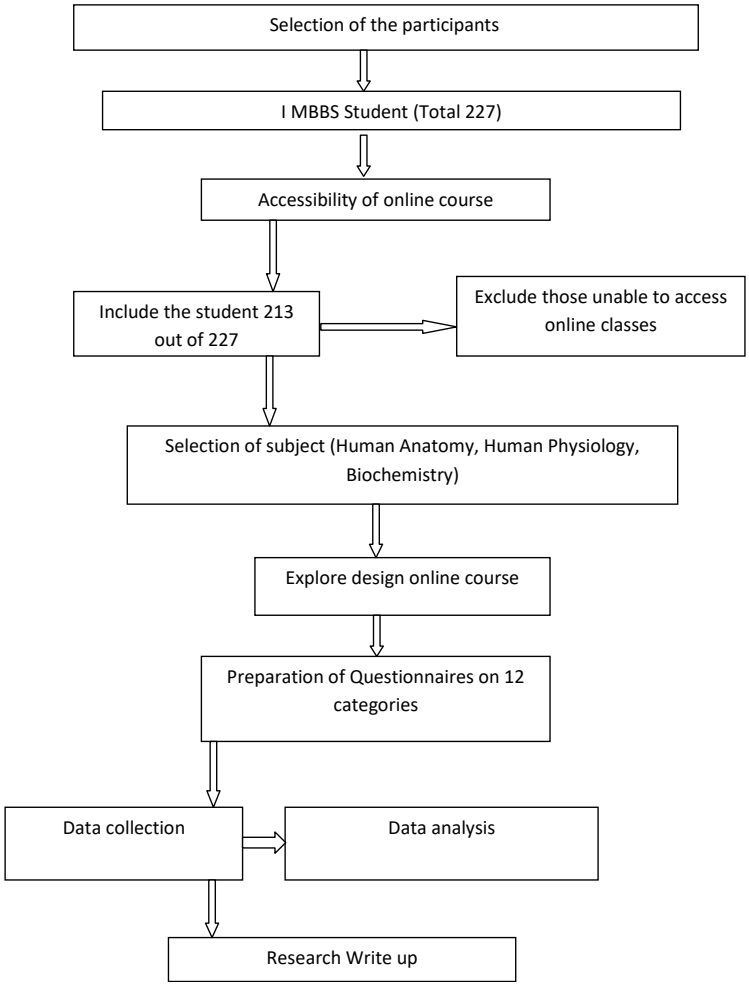
Data was collected using an online questionnaire survey. The online consisted of 33 questions that focused on six main categories: accessing online video content, previous experience with online learning, interaction with Video lectures addressing the content, duration, visuality, timings and screen size, perceived learning experience, the online content learning assessment methods and the experience with the online learning management system (LMS). Data from the focus group was collected by researchers in the form of digital notes.

Data Analysis

The data collected from an online survey had both quantitative and qualitative responses. Basic descriptive statistics and graphical analysis were performed with quantitative data using percentages. Frequency and percentage were calculated for most of the questions to summarize the data. Furthermore, some basic cross tabulations were performed in order to better understand the student's response and the relationship between the variables. Data analysis of the qualitative portion followed the three

concurrent flows of activity suggested by Miles and Huberman (1994): data reduction, data display and drawing conclusions. The three components were constantly interacting among themselves and with other stages in the process. Conclusions were drawn, reviewed and discussed as the data analysis process was ongoing. There was a constant interaction between the processes of data reduction, displays and verification of conclusions until final results were achieved.

Overview of Methodology



Results

Quantitative Analysis

The present data relate to I MBBS students' online lectures enrolling 250 students, offered during the compulsory home quarantine break as a part of COVID-19 control measures in a teaching and learning program at a large medical institution in Andhra Pradesh. Due to the suspension of physical attendance classes at medical colleges and to avoid large gathering of students, the institution offered online lectures. The teachers working at the institution developed their own teaching material for their online version of the lecture class while adapting the pedagogy to the specifics of Web-based teaching and learning. However, these teachers are a novice to online teaching. Hence, the author's research interest in the dynamics of online teaching, learning, and assessment spurred the emphasis of this particular research area. Teachers are expected to teach a series of at least ten days entire lecture lessons to a whole class of students online. Students are prompted to attend the series of lectures between 10.00 am to 11.00 am, and again 11.30 am to 12.30 noon every day continuously for ten days. The students' attendance ranged from 190 to 220 participants at the online conference lectures.

Students are requested to answer the questionnaire dealing with self-reporting on a variety of factors that could impact teaching effectiveness, such as planning for instruction; support and respect from peers, students, and parents; a student needs based on which to design effective learning opportunities; assessment of student learning; being supervised; and overall satisfaction, both for students and teachers. Teachers were questioned about the preparedness and the design of the online lectures and their preferences over the traditional, face-to-face version of the class lectures. The five-point Likert scale ranges from 1 being equated with "not being concerned at all" to 5 representing a serious preoccupation with the given factor is utilised.

There is a distinction between student feedback that emphasises satisfaction with the quality of online class interactions and student responses that depend on engagement with peers during asynchronous and synchronous conversations.

Table 1
Background characteristics of the online lecture users and their methods of accessibility of the online lectures.

No	*Criteria*	*No(n=213)*
1	*Instrument/ machine used to access the online content:*	184 (86.4)
	Mobile	5 (2.3)
	Ipad/ Tablet	22 (10.3)
	Laptop	2 (0.90)
	Desktop	
2	*Network used:*	
	Broadband/ Fiber network	37 (17.4)
	Cellular	176 (82.6)
3	*Satisfaction level with internet speed:*	
	Not at all satisfied	28 (13.1)
	Average	79 (37.1)
	Good	89 (41.8)
	Excellent	17 (8.0)
4	*Previous experience with online learning:*	
	Yes	46 (22.0)
	No	167 (78.0)

The background characteristics of the 213 participants who provided the feedback are described in table Ia. Mobile is found to be commonest (86.4%) instrument used to access the video lecture content. Twenty-two students accessed through a laptop. The cellular network of the mobile is the preferred network utilised by the participants. Around half of the participants felt that the speed of the internet was felt to be good and excellent. When enquired, 46 students (22.0%) revealed to have had previous experience with online teaching and learning.

Table 2 depicts the distribution of students' perceptions concerning the characteristics of online video lectures. These characteristics are classified according to the content, duration of the session, visual preferences, the suitability of the timings and the picture size. Seventy-one (33.4%) clearly expressed that VL content is interesting. Rest 142 (68.6%) reserved their opinion. Among these, 113 (53.1%) said that the interest of the content depends on the subject/ topic and the teacher. Rest of the students, 29 (13.5%) indicated that the VL is not interesting. When enquired about the duration of the lecture and the method of assessment of their concentration/ attention/ learning, 89 (41.7%) preferred 20-30 minutes of presentation, followed by an assessment of the content. However, 117(44.8%) preferred no such assessment of their learning

following the VL. Only seven students opined that after every 5-10 minutes, there should be an assessment of the content. The preferred median duration of the lecture is 45 minutes for all the three subjects.

When enquired about the social isolation, 113 (53.3%) students replied affirmatively to social isolation during the VL. Unlike many reports where social isolation is being identified as a major hurdle for the online VL, 99 (46.7%) of students felt no social isolation while listening to online VL. The suitability of the online video lectures was approved by 193(91.0%) of the respondents. The timings of the VLs and that of the routine traditional lectures coincide.

The preferred instrument by the students to access the video lectures when enquired was found to be the smartphone (69.8%). The smartphone screen dimension was small (<10 inch) and is the most favoured screen size.

Table 2
Distribution of Characteristics of Online lectures and the students opinion

No	*Lecture Criteria*	*Student Response*
1	Content:	
	a) Interesting	71 (33.4)
	Not interesting/ No opinion	29 (13.5)
	Depends on the Teacher/ topic/ subject	113 (53.1)
	b) Should be same as traditional physical classroom lecture (Yes)	154 (72.3)
	No	59 (27.7)
2	Duration of Lecture (minutes):	
	a) 5-10 followed by an immediate assessment	7 (3.2)
	b) 20-30 followed by an immediate assessment	89 (41.7)
	c) 45 NOT followed by an immediate assessment	93 (43.6)
	d) My personal preference	24 (11.2)
3	Preferred duration of lecture (minutes):	
	(Median)	45
	Anatomy	45
	Physiology	45
	Biochemistry	
4a	Visuality Preferences: Speaker	
	Lecture by same Institute faculty	156 (73.5)
	Reputed Guest Faculty/ Other institute faculty	24(11.2)

	Sharing other suggested video links of that topic	32(15.1)
4b	Visuality Preferences: Screen appearance	
	Only portrait/ Full view of the speaker	45(21.2)
	Toggle view/ Picture in Picture (PPT & Speaker)	167 (78.7)
4c	Visuality Preferences: Background of speaker	
	Classroom	160 (75.5)
	Customised	55(24.5)
4d	Visuality Preferences: Social Isolation	
	Social isolation unlike traditional classroom (Yes)	113 (53.3)
	Social isolation (No)	99(46.7)
5	Suitability of the lecture timings	
	10.00 am to 12.30 (Present timings)	193(91.0)
	Not suitable	19 (9.0)
6	Screen size preferred for watching	
	Smartphone (<10 inch)	148 (69.8)
	Tablet/ Ipad (>10 - <13 inch)	13 (6.1)
	Laptop/ Desktop (>13 – <15 inch)	41 (19.3)
	≥ 15 inch screen size	10 (4.7)

The important aspect of the online VL is the assessment. It is necessary to monitor the student listening and assess the learning through vigilant assessment. The assessment frequency preferences by the students are depicted in Table 3. The speaker recapitulating the content delivered during the VL at frequent intervals during the lecture was preferred by 65 students (30.7%). Forty-eight students (22.6%) opined that questions based on the content delivered during the VL could be directed at the audience at the end to assess the learning of the students. Conducting once a week online tests on the respective subject content delivered during that week is the chosen assessment frequency by 84 (39.6%) of students. Routinely, weekly tests are organised during the traditional normal teaching course. Students are habituated to this method of weekly assessment.

Table 3
Online Assessment for the video lectures Preferred by the Students

No	*Assessment schedule*	*Response*
1	Questions at the end of each video lecture	48 (22.6)
2	Recapitulation at the end of every 5-10	65 (30.7)
3	minutes	
	At the beginning of each lecture on a topic	15 (7.0)
4	covered before	84 (39.6)
	Weekly online tests on topics covered in week	

The distribution of perceived acceptability and the adaptability of the video online lectures by the students is shown in Table 4. When enquired about the cultural suitability of the VL in improving the learning process, 151 (71.2%) responded in agreement. The remaining 61 students (28.7%) responded negative and or unable to decide. When enquired about the adaptability of the students to the online video lectures as a teaching and learning medium, 81 (38.2%) expressed complete satisfaction and said that they are able to adapt to this online medium of instruction. Nearly 62.0% of students (172 out of 213) are unable to adapt to the online video lectures for their learning. Among these, 117 (54.9%) agreed that these they are able to adapt to these online VL somewhat partially.

The cognitive experience through online video watching and listening should be an enjoyable learning activity. Out of 213 students, 72 (34.0%) expressed this activity as an enjoyable learning experience. Out of the remaining students, 33 (15.6%) opined that there is no personal touch in the online VL. It is pertinent to note that 107 (50.4%) expressed that this online VL are either not interesting or boring. The difficulty level of this VL when questioned, only 31 students (14.6%) said that this online VL are easy to understand. Remaining 84.4% of students expressed reservations regarding the difficulty level in understanding. One hundred and eighteen Students (55.3%) suggested that online VL should be continued for further learning.

Table 4
Experience perception & acceptability of online Video Lectures

No	Criteria	Response
1	VL is a culturally suitable way to improve your learning process	
	Yes	151 (71.2)
	No	30 (14.1)
	Don’t Know	31 (14.6)

2	Perception of adaptability from classroom to online lectures	81 (38.0)
	Yes Complete	117 (54.9)
	Partially	11 (5.2)
	No	4 (1.9)
	Don't Know	
3	The learning experience of listening and watching online lectures is	
	Boring	10 (4.7)
	Enjoyable & Good	72 (34.0)
	Not so interesting	97 (45.7)
	No personal touch	33(15.6)
4	The difficulty level of understanding VL	
	Easy to understand	31 (14.6)
	Not so difficult	140 (66.0)
	Difficult to comprehend	41 (19.3)
5	Do you suggest a continuation of the VL in future	
	Yes	118 (55.3)
	No	71 (33.5)
	Don't know	24 (11.3)

Students' familiarity with the online platform (ZOOM) for video lectures was enquired, and the results are shown in Table 5. The advantages and the inbuilt facilities like raising the hand to ask a question, communicating through a chat room, video sharing and recording of the VL are known to 139 (65.2%) of students. Rest of the students (73 out of 213) are either not confident and/ unaware of these facilities. The comfortability of sharing the video (switching on the self-video button) when inquired, 130 students (61.0%) declined to switch it on during the VL. Fifty-three students (25.0%) agreed to share their video, and the remaining are unable to decide. It is worthy to note that 172 (80.8%) accorded better adaptation of watching the VL and graded their adaptation between 3 and 5. The adaptation to online VL was perceived by the 41 students (19.2%) as poor denoted as less than two on a scale of 0 to 5.

Table 5
Familiarity with the Online Learning Video Conference Management Platform (ZOOM)

No	Parameter	Response
1	Advantages & Facilities (lifting a hand to ask questions, Video sharing of you, recording)	
	Yes	139 (65.2)
	No	38 (17.8)
	Not Sure	36 (17.0)
2	Comfortability of sharing the self-video during VL	53 (24.9)
	Yes	130 (61.0)
	No	30 (14.1)
	Undecided	
3	Grading your adaptation to the VL	
	1-2	41 (19.2)
	3-4	162 (76.1)
	5	10 (4.7)

Students were enquired about their preference of screen size for watching. Students who are regularly watching VL on their mobiles preferred the same mobile screen to watch (147 out of 184). In comparison, 95.5% of students who watch VL on laptop preferred to continue watching them on a laptop screen. Though 86.4% of students are watching these VL online on mobile, only 80.0% preferred mobile screen to watch. In general, students prefer mobile to watch VL.

Table 6
Present users and their preferences of Screen size to access VL

	No. students who reported their preferred instrument to watch VL (%)				
The instrument to Access VL	>15" including TV screen	Laptop (13-15")	Smartphone	Tablet/Ipad	Total
Desktop	0	1(50.0)	1(50.0)	0	2 (1.0)
Ipad/Tablet	0	0	0	5(100.0)	5 (2.3)
Laptop	1(4.5)	21(95.5)	0	0	22 (10.3)
Mobile	9 (4.9)	20 (10.9)	147 (79.9)	8 (4.3)	184 (86.4)
Total	10 (4.7)	41 (19.2)	149 (70.0)	13 (6.1)	213 (100.0)

The difficulty level of the online VL and its relationship with the instrument used for accessing these lectures is shown in Table 7. Thirty-one (14.6%) of students felt that these VL are easy to understand. Rest of the students 182 out of 213 felt that these lectures are not so difficult to understand and / difficult to understand. Among students who are connecting through a laptop, 31.8% felt that these lectures are easy to understand compared to 14.6% of those using mobile. Forty-one (19.2%) expressed that these VL are difficult to comprehend.

Table 7
The difficulty level of VL perceived by the student and its relationship with the instrument used for accessing these lectures

Instrument	Difficult to understand	Easy to understand	Not so difficult to understand	Total
Desktop	0	1(50.0)	1(50.0)	2 (1.0)
Ipad/tablet	0	2(40.0)	3(60.0)	5 (2.3)
Laptop	3(13.6)	7(31.8)	12(54.6)	22 (10.3)
Mobile	38(20.7)	21(11.4)	125(67.9)	184 (86.4)
Total	41(19.2)	31(14.6)	141(66.2)	213 (100.0)

It is proposed that the difficult level opined by the student might have had the influence of previous experience with online teaching and learning. Among those students who had previous experience of online learning, 17.4% felt video lectures are easy to understand. The difficulty levels felt are almost same among those who had experience and those who are a novice (17.4% and 19.8% respectively).

Table 8.
The relationship of perceived difficulty levels of VL and the previous experience of online teaching and learning.

Attended Online Coaching before	Difficult to understand	Easy to understand	Not so difficult to understand	Total
No	33(19.8)	23(13.8)	111(66.4)	167(78.4)
Yes	8(17.4)	8(17.4)	30(65.2)	46(21.6)
Total	41(19.2)	31(14.6)	141(66.2)	213 (100.0)

The various causes for the high difficulty level in understanding as perceived by the students suggest that the VL should be interesting and the concerned teacher/ topic also is responsible. Seventy (32.8%) students felt that the topics covered in VL are interesting. Majority of the

students (53.5%) felt that the difficulty level of the VL depends on the topic covered and the teacher delivering the VL.

Table 9
The distribution of reasons for the perceived difficulty levels of VL among students

	Difficult to understand	Easy to understand	Not so difficult to understand	Total
depends on teacher/ topic/ subject	22(19.3)	13(11.4)	79(69.3)	114(53.5)
interesting	10(14.3)	16(22.9)	44(62.8)	70(32.8)
No opinion.	6(25.0)	2(8.3)	16(66.7)	24(11.3)
not interesting at all	3(60.0)	0	2(40.0)	5(2.3)
Total	41(19.2)	31(14.6)	141(66.2)	213 (100.0)

Qualitative Analysis

1. Online Video Lecture

a. ***Content:*** Students opined that these online classes are helpful only for the subject revision but not for explaining new topics. Many students felt that these classes should incorporate more animations/ 3D pictures rather than simple text in the power points shown. They are also of the firm opinion that explanation of the topic on a blackboard is beneficial for clarity. Students also requested that the faculty should summarise the main points at the end of each online session. They also preferred more interactions with their fellow participants.

b. ***Assessment:*** Students requested that the faculty member should pose frequent questions in between to the participants by unmuting a specific participant.

c. ***Accessibility:*** The main hurdle expressed is the network connectivity at their respective home. The online lecture is a continuous one for nearly 45 minutes, and the students experienced automatic network disconnection after every 20 minutes. They also complained that the faculty voice not clear and even the video breaks in-between the session. These difficulties are mainly due to poor connectivity.

d. ***Others:*** Students who are regular in VL attendance, expressed that they could recall the subject taught in the previous class. However, they felt that the home environment is causing disturbances in concentration and experienced household interruptions at their home.

2. ***VL Timings:*** Students felt that timings are acceptable and are suitable for them. Some students even suggested to start the VL sessions late in the morning and continue beyond 1.00 pm. They also indicated an eagerness to attend the sessions even in the evening.

Discussion

The primary objective of this exploratory study was to examine the preference and perception of students regarding the newly introduced online live video lecture classes. Two hundred and thirteen undergraduate students' feedback was sought regarding the newly introduced online teaching sessions. These Online Video lectures replaced the traditional physical classroom teaching due to the COVID-19 pandemic. Students were instructed to leave the college campus and advised to stay at their respective homes. The online VL are accessed by these students through their mobile phone/ tablet/ desktop computer/ laptop. The present study revealed that 86.4% of students are routinely using their mobile phones to access the VL. Similar studies[19] also revealed that the majority of students (58.0%) are using a smartphone to access the online teaching. The internet is slow, and fifty per cent of students expressed their dissatisfaction with the internet speed. As students are utilising the mobile data, the speed is far below the required[19]. The habit of learning through online video lectures is a novice to the present student population, and 78.0% of them had no previous experience. Lack of familiarity and exposure to a different method of teaching, are causing conflicts in the habituated methods of learning among students. Hence 72.3% of students preferred online VL format and content to be similar to that of a traditional physical classroom lecture. Non-familiarity of this method of teaching might be influencing the students' perception of dissatisfaction with the current content delivery. On inquiry, students preferred this VL method should be complimentary and a blended system would be more interesting and effective[7,11,13,16]. Students reported that online lectures provide an additional educational value compared with "live" traditional lectures. In other words, blended learning would be more effective and should be continued further[11,16,21]. This method of online VL is also precipitating the feeling of social isolation among 53.3% of students. The habitual physical presence of their colleagues and appreciation of their friends' verbal and nonverbal reaction during the traditional classroom atmosphere is conspicuously absent in the online method[1,2]. This is resulting in the perception of social isolation among them. It is known that students who receive personalised feedback have higher levels of

course satisfaction and perform academically better than those students who receive only collective feedback[16,17,22]. Hence personalised feedback needs to be incorporated into the VL program. A simple act, like using the student's name while writing feedback, also helps in developing teacher's rapport with the student[17].

Seventy per cent of the students preferred watching the VL on smartphone screen measuring less than 10 inches. The habitual use of the smartphone by students and non-availability of bigger screens are the underlying factors influencing the screen size preferences[19].

During the traditional classroom teaching, formative assessment is undertaken through weekly physical tests. Students, when inquired about preferred assessment method during online VL, only Forty per cent opted weekly tests. 31.0% preferred recapitalisation of the subject and assessment after every 5-10 minutes. Around 23.0% of students preferred assessment at the end of each VL. These findings affirm students' preference for the spot assessment to assess their understanding and learning. Due to this reason, the majority of the online course videos are of short duration, and at the end of 5-10-minute VL, assessment is introduced.

Creating a conducive environment during online lectures is difficult but is necessary for online learning[1,2,20]. This would prevent the students from feeling isolated and also enhance the classroom ambience for better learning[1].

Seventy-one per cent of students agreed that VL is a culturally suitable way to learn the subject. As the students are traditionally habituated to learn from the physical classroom teaching, nearly 58.0% of them expressed dis-comfort and inability to adjust with the online teaching. The same percentage of students expressed that online listening and watching is not such an interesting experience. Around 20.0% of students felt that it is difficult to comprehend the contents of the VL. All these factors emphasise that the faculty need to modify the way of teaching, assessment of learning and convert their teaching sessions into more interesting learning experiences[20]. Students would fully accept and appreciate online VL if they perceive that VLs would offer an advantage over traditional alternatives[16]. As the faculty is habituated to traditional teaching sessions, they require to modify their teaching and learning assessment methodology[20].

Interestingly, even after two sessions of training, 35.0% of students are not fully familiar with the facilities available in the online platform. Surprisingly, 75.0% of students refused to share their video online during the lecture. The use of the smart mobile phone has become universal, and students are keen to access online content through their mobile phone

devices only. The easy availability, portability and multiple uses are the reasons for their mobile phone preferences. When cross-tabulated, people who are accessing the VL through bigger screen devices (Ipad/ tablet/ laptop) find these lectures to be easy to understand. Bigger the screen, easy for them to visualise for a longer time and causes less eye strain.

Conclusions

Based on the findings of the study, the following conclusions can be drawn:

The purpose of effective online lectures and learning is to provide learners with opportunities to engage in enhanced teacher supportive educational experiences. Such experiences are pillared by a triad of factors—student involvement, teachers support, and teaching presence—that work in tandem. There are several areas of convergence that connect these components of educational experience, as follows: Not only the mere presence but listening and comprehending the audio-visual content, immediate clarification of concepts, visualising whenever necessary at their own pace and convenience etc. would constitute the student involvement. The teaching presence and teachers support are pivotal in enabling this online learning experience into a mutual relationship. Teachers need to be aware that the controls are with the student. When the student is not interested, they can remotely switch off/ leave the VL without the knowledge of the teacher. Teachers involved in VL should change their style of teaching, encourage student involvement more frequently and deliberately to keep the interest. Unlike traditional physical class which is controlled by the teacher, VL is controlled by the student. The VL should appeal to the students. In order to design a better learning experience, continuous students' feedback is pivotal. Given the degree of interactivity in online classes, the need for the use of a constructive approach to teaching, learning, and assessment is crucial in helping students to co-construct knowledge by making meaning of their interactions with content, instructors, and peers, as well as the interface provided by the learning management system. Student responses and formative feedback connect supporting discourse, learning environment setting, and content selection in particular ways that are grounded in the context of the class where the research was conducted. In other words, formative assessment through feedback was an integral part of structuring student responses, thus creating a positive learning environment where communicative exchanges were student-centred. Formative course content assessment is as important as a dynamic VL course design to suit the student community requirements for meaningful

enhanced educational experiences. The study findings support recommendations for future iterations of the flexible online lectures/ teaching & learning design procedures used, with a particular focus on the interplay among various considerations to be made when developing online teaching & learning effectively.

1. Set Clear Expectations

When you are designing an online discussion, take a moment to think about what you want the students to achieve. By setting clear expectations and giving specific instructions and training at the beginning, students will be familiarised with all the options available at the online learning platform and get a better idea of what is expected of them, and it saves both stakeholders time.

2. Personalise It

Given the dynamics of online learning, it is common for students to feel distant and isolated during the course. One of the best ways to prevent your students from feeling this way is by delivering personalised feedback. Knowing the social isolation, the assessments are devised in such a way that feedback is obtained from each and every student personally.

What is already known:

1. E-learning is gaining popularity among the medical faculty and students. The affordable video conferencing technology enabled some of the organisations to adopt and offer online e-learning to their students.
2. Many researchers documented the advantages of e-learning and its positive effect on learning among students.
3. Many students adopt e-learning for acquiring additional knowledge/ skills or as a means of intensified training method for competitive examinations.
4. However, the usefulness and acceptability of e-learning among medical students as a part of their curriculum is still not fathomed in medical education.

What this paper adds

1. Information about the role of video lecture in students' overall online experience
2. Students' perception of VL based upon their accessibility, previous experience and their preferences.
3. Students perceptions and their acceptance of the video lectures and online assessment methods.

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