Students' Perspectives on Simplified Breakout Room Approach during Video Proctored Online Assessment in COVID 19 Lock down

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Abstract:

Background: The lockdown in COVID 19 pandemic mandated the normal academic schedule in virtual mode including e-assessments. Since the summative assessments are a mix of both selected response approach and constructed response approach, a new method of e assessment under video surveillance by break out room approach has been tried in this study and the student's response with regard to the different aspects of this technology will be evaluated.

Methods: The students were asked to appear for the exams under video surveillance by zoom video conference. The instructions and the check lists were rolled out accordingly for both the students and teachers. The students appeared for the examination under video surveillance such that one invigilator monitors 10 students along with a guardian secondary invigilator present by their side. A questionnaire based survey regarding the conduct of examination was conducted amongst the students. The data was analysed by descriptive statistics. P value < 0.05 is taken as statistically significant. All statistical analysis was performed by using the statistical software package SPSS version 21.

Results: Analysis of student's feedback revealed that 90% are agreed that proctored clarified their queries. Majority of the students (96%) are happy with overall experience with break out room approach in video proctored online assessment.

Conclusion: The conduct of online assessment by break out room approach is a new methodology tried in this period of pandemic lockdown and will be evaluated for its acceptance by the students so that it can facilitate the upgradation of e-assessment methodologies.

Key words: Assessment, Breakout room, COVID-19, Video Proctored.

Introduction:

COVID 19 pandemic has disrupted the conventional academic activities and has ushered in a new era of creative environment of online education.[1] This mandates a change in the academic assessments which still remains a challenge.[2] Ours being an institute of national importance in the field of tertiary health care also faced the brunt during COVID

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19 pandemic when the virtual platforms of online teaching came to the rescue. We started with home based academic assessments by selected response approach right from the declaration of 1st lockdown phase in our country and tried to maintain the routine assessment schedule with the help of virtual platform. But the necessity of subjective assessments was felt soon as the summative assessments are a right mix of both selected response and constructed response assessments. Also, the constructed response system is more popular in the evaluation of all sections of cognitive domain.[3]

Online exams can be proctored either in person in a controlled exam centre or by using artificial intelligence.[4] But it usually requires a learning management system along with a technical back up for support which is a costly affair in a developing country like ours.[5] The in person proctoring for a large group of students seems difficult and students are apprehensive of the support for their queries during the conduct of exams.[6] The chances of cheating by using internet driven sources in such home based online assessments requires elimination to maintain the academic integrity.[7] As there is a growing concern among teachers about online assessment and the impact of its results for accountability, monitoring their views on students perspective will be an important task.[8]

Here we present our experience of navigating a new terrain of conducting a home based online academic subjective assessment of medical students in a tertiary care medical institute under video proctoring by using break out room approach and the students perspectives with regard to the same which has not been described in the literature before. The technique involves the hand written subjective assessments to eliminate internet driven malpractices and controlled invigilation by primary and secondary (in-person) invigilators for better monitoring and elimination of their apprehensions and queries with regard to conduct of exams.

Subjects & Methods:

Study type:

An online hand written subjective academic assessment of 2nd semester students was planned using break out room approach. The module was explained to the students in detail and their queries were attended to. A mock test was conducted 2 days before the examination to allay their fears and the following checklist was provided to keep them prepared for the examination:

- Do I have a laptop with front camera or smart phone with front and back cameras?

- Do I have a smart phone with updated Firefox/safari/chrome browsers?

- Do I have/upgraded to 1.5 GB data/day plan with at least 1 Mbps upload & download speeds?

- Did I install the Google Classroom and ZOOM Video Conference apps on my mobile/laptop?

- Did I keep registration number as name in ZOOM app/software?

- Do I have login credentials and am able to login to all the above-mentioned Apps?

- Did I identify an appropriate, well-lit, noise-free place in the house with my writing table and chair for typing answers comfortably?

- Did I understand the question paper model and exam duration for each subject/paper?

- Have I kept sufficient number of A4/A3/ Legal sized papers to write for section B and C along with other stationary requirements?

- Proctoring requirement: Students must understand that being visible for invigilation (proctoring) throughout the duration of the exam is a mandatory. Students who do NOT follow this rule will be marked under malpractice. By appearing for the exams, a student declares that (s) he understands these guidelines and has clarity clearly that their proctoring session will be video recorded and will be used only to identify malpractices if any during the exam.

The invigilators were supposed to have the following materials ready for Invigilation:

- Laptop

- Earpiece with the mike

- Print out of Document for the Methodology of examination

- Print out of the list of Contact numbers of students and guardians

- Print out of Invigilator report document

Procedure of examination:

Students were asked to login to google classroom and zoom video conference (Zoom incorporation, California, USA) 20 minutes before the commencement of examination. They were asked to be seated at least 2 feet away from the camera (webcam or mobile) in such a way that the surroundings are clear and the proctor has a clear view of the entire set up with the application in unmuted form. Break out rooms were created by the administrator in zoom video conference such that 1 proctor (faculty as primary invigilator) invigilates 10 students. 5 breakout rooms were created for a total of 50 students in the ratio of 1: 10. The Proctors were given the permission to record the session for the entire period. The question paper was shared by google classroom in a coordinated manner. The onsite invigilation was done by the guardian of the student (secondary invigilator) who was intimated earlier and approval was taken. The student answers the question paper in the given time period by constructed response under primary and secondary invigilation (controlled invigilation). After the examination is over, 20 minutes are allotted for the scanning and upload of the pdf format of answer script in the google classroom under video proctoring. The proctors download the answer scripts of the respective students; verify the quality of the scanned answer sheets and once satisfied asks the student to leave the VC. The coordinator of the respective department will arrange the answer scripts as verified by the invigilators via online mode and submit it to the respective head of the department for further proceedings.

Qualitative analysis:

A questionnaire based survey regarding the conduct of examination was conducted amongst the students. Participation in the study was voluntary and complete anonymity was ensured. The questionnaire evaluated the conduct of examination, the difficulties encountered and student's satisfaction in this new approach of online assessment test. The questionnaire was validated by 3 experts in medical education on a sample population, prepared in google form and was mailed to the participants to be submitted within a period of 2 days. The respondents were asked to provide the response on an ordinal scale or to select the options provided along with open comments.

Statistical analysis: The items were evaluated on an ordinal scale and considered to be non-parametric in nature. The validity of the items was tested by spearman's correlation analysis. Cronbach's α coefficient was used to identify the reliability status of the items. The data was analysed by descriptive statistics. P value < 0.05 is taken as statistically significant. All statistical analysis was performed by using the statistical software package SPSS version 21.

Results:

The reliability of the questionnaire was assessed by cronbach's coefficient α as 0.56. Students' perspectives on the conduct of exams by break out room approach are shown in fig 1. 66% of the students (n= 50) are of the opinion that the practice session of break out room approach was good. More than 90% (n=50) of the students agreed that the proctor was available on time and clarified their queries during the examination. Barring 1 student, 84% (n=50) of the students termed the technology used in the approach as user friendly.

As depicted in figure 2, 96% (n=50) of the students are happy with their experience of attending examination by break out room approach.

Figure 3 highlights the preferred mode of summative examination by students on the basis of their present experience. Only 18% (n=50) of the students are ready to give their examination in physical presence in the institute in offline mode in this scenario of COVID 19 pandemic. Of 82% of the students who prefer online examination, 72% (n=50) would like to attend their examination by using home based break out room approach. 4% of the students preferred to attend the examination from their home by online mode without video proctoring.

Most of the students (86%, n=50) liked the home based online examination under video proctoring by using break out room approach (Fig 4). Poor internet connectivity is the major factor for dislike of this mode of examination by 10% of the students. Of the students who did not like this mode of conduct of examination, poor internet connectivity is the most important factor. The availability of invigilator for clarification of doubts or queries during the conduct of examination is the most admired reason (70%, n=50) to like the break out room approach for the conduct of examination in this COVID era.
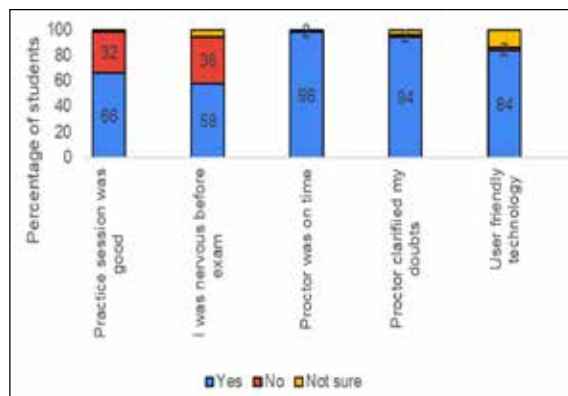
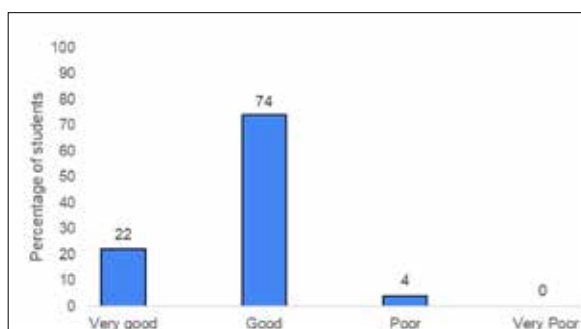**Figure 1: Conduct of exams by break out approach: Students' perspectives**

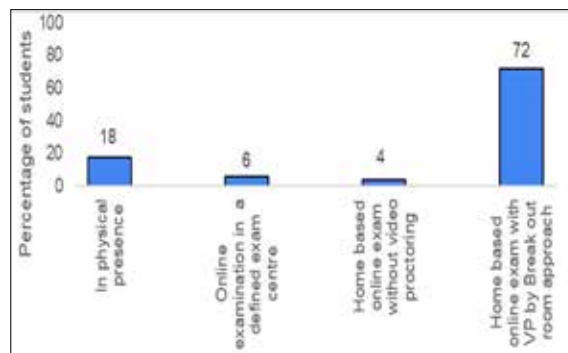**Figure 2: Students' experience of attending exams by break out room approach**

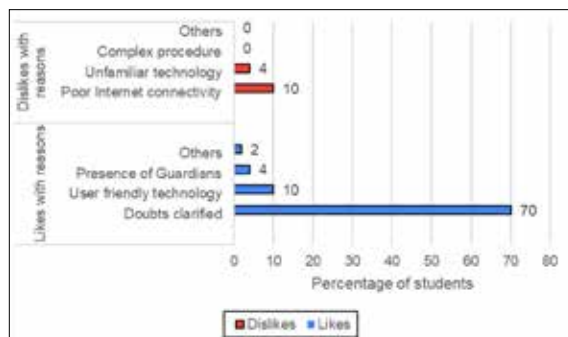**Figure 3: Mode of summative exam as preferred by students on the basis of present experience.**

Figure 4: Strengths and weaknesses of conduct of exams by breakout room approach: Students' Perspectives.

Discussion

Outcomes of innovation: As the world moves into different phases of lockdowns, the online academics and assessment is here to stay. The idea of evolving a better assessment platform in the virtual platform is to be as near to assessment in physical presence or even better.[9] The innovative idea of subjective online assessment by break out room approach is a step towards this direction. Due to the involvement of multiple factors in this regard, the review of students regarding various facets of this approach is necessary to establish its credibility. Systematic feedback is a basic condition for the operation and development of any complex system.[10]

Inspite of the fact that 66% of the students (n=50) appreciated the practice session for the breakout room approach, an equal amount of students (58%) were still nervous for the examination (Fig 1). It might be due to the incumbent fear of performance in the examination which is quite common even in the exams in physical presence. The technology finds a wider acceptance amongst students as 94% (n=50) have termed it user friendly. The clarification of doubts in the conduct of examination was successfully attended to due to the availability of both primary and secondary invigilators (proctor) customised for students. Validity and reliability of online assessment should be established to ensure students' achievement of the learning objectives.[11] Breakout room approach with small group of students in each has the ability to solve any technical obstacle met during the online assessment.

96% of the students (n=50) liked the conduct of the examination by break out room approach with 22% terming it as very good. The opinion becomes significant on the ground that the students have been attending regular unproctored, online MCQ assessments and have seen and experienced the regular modes of online assessment. Alsadoon H (2017), revealed that procedures implemented during the online including briefing on examination procedure by peers minimise the chance of cheating and unauthorized collaboration.[12]

With the experiences garnered about the various modes of assessments, 82% have opined to conduct the summative examinations in online mode in the present scenario of COVID 19 pandemic (Fig 3). Most of them (72%, n=50) have exerted their trust on the break out room approach as compared to other modes

of online assessment. Availability of customised proctor for a small group of students to clarify their doubts (70%, n=50) and user friendly technology (10%, n=50) seems to be the most important factors for the students to prefer this approach (Fig 4). 14% of the students (n=50) have not liked the breakout room approach, internet issues being the most important slayer. Since the students are spread pan India, digital divide can be the reason for performance divide.[7] Simplified breakout room approach for conduction of online home based video proctored assessments provides students and teacher's easy-to-use, valid, and reliable assessment system. It may significantly contribute to solving certain crucial problems of online assessment today. With the focus and thrust on digital India programmes, the divide is bound to reduce leading to wider acceptance of this mode of online assessment.

The conduct of online assessment by break out room approach is a new methodology tried in this period of pandemic lockdown and has been accepted well by the students because of its characteristic inclusive and customised approach.

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