



Original Research Article

Pilot study: Adroitly utilize online classes during COVID crisis

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ABSTRACT

Background and Objective of Study: To contain COVID-19, most education institutions around the globe have been temporarily closed, impacting millions of students.

Many medical universities have opted for online classes. Online teaching in medical universities is a novelty, and it poses different sets of challenges compared to regular classes. Since online teaching might persist for a longer time, this study was conducted to help students gain maximum out of these online classes.

Materials and Methods: 150 First year medical students were selected for the study. Students were divided into two random groups (A & B) of 75 each. Group A were informed about the topic of the class and were encouraged to study prior to the class. Group B students attended the class without any preparation, but were instructed to study the topic immediately after completion of online lecture. Both the groups were compared for their involvement during the lecture class and their understanding of the topic were statistically analyzed.**Results:** Group A scored better than group B with significant P value (<0.05). This shows, Group A had a better understanding of the topic compared to Group B. This Study also shows method followed by Group A was significantly better compared to Group B.**Discussion and Conclusion:** Group A, being aware of upcoming lecture class topic and had prepared, were more attentive in class, as well as interactive and performed better in the assessment. This study suggests to reduce the duration of online class, share the material of the class prior and encourage students to prepare on the topic for better results of online classes.© This is an open access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Introduction

Most governments around the world have temporarily closed educational institutions in an attempt to contain the spread of the COVID-19 pandemic. These nationwide closures are impacting millions of students.¹

Many medical universities have opted for online classes.² Online teaching in medical universities is a novelty, and it poses different sets of challenges compared

to regular classes. Since online teaching might persist for a longer time, this study was conducted to help students gain maximum benefit out of these online classes.

Students who are all at distant places and are away from college lecture rooms will surely find it difficult to concentrate on the classes that too when teacher is virtually present.

2. Objectives of the Study

1. To Study the effect of pre lecture class preparation and post lecture class studies by MBBS students.

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- To compare results of student performance with pre and post lecture studies.

3. Materials and Methods

This was a case control study, 150 First year medical students were selected for the study. Students were divided into two random groups (A & B) of 75 each. Group A were informed about the Physiology topic of the class and were encouraged to study prior to the class. Group B students attended the Physiology class without any preparation, but were instructed to study the topic immediately after completion of online lecture. Both the groups were analyzed for their understanding of the topic. Results were statistically analyzed.

Group A: consisted 75 students who were informed about the Physiology topic of Lecture class

Group B: consisted 75 students who attended the Physiology lecture classes without preparation but were given time post lecture for studies.

3.1. Inclusion criteria

- First year MBBS students
- Good internet connection
- Internet connection to sustain one-and-a-half-hour class
- Availability of Physiology study material

3.2. Exclusion criteria

Students with poor internet connection.

3.3. Methodology

This study was reviewed and approved by Institutional ethical committee. Students were involved in the study as part of a medical education project. Information sheet on the intentions, methods and procedure of the study were circulated to all the participants. Written informed consent was obtained through mail, from all students before their enrollment in the study. Participants were assured their information and responses would be kept confidential and would not be disclosed under any circumstances.

150 First year medical students were selected for the study with consideration of inclusion and exclusion criteria. Students were divided into two random groups of 75 each. First group (group A) were informed about the topic of the Physiology Lecture class and were given study material to study for half an hour before start of the class. Second group (group B) of students were asked to attend the Physiology lecture class without preparation, but were instructed to study about the class immediately after completion of online lecture. Both the groups were analyzed for their understanding of the topic by multiple choice questions, short answers and long notes. Five such classes were

conducted with Five new physiology topics, after each session assessment was conducted. Average score from all five session was taken for analysis. Feedback of students were collected at the end of each session. Results were statistically analyzed.

The aim of assessments is to determine the adequacy of knowledge with standardization.³ No single method is appropriate, for assessing all the skills, knowledge and attitudes needed in medicine, so a combination of assessment techniques will always be required.

In our study we have used MCQs, Short answers and long notes to measure knowledge, understanding, judgment and problem-solving ability in students.⁴

4. Results⁵⁻⁸

Descriptive statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean ± SD (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5% level of significance. Student t test (two tailed, dependent) has been used to find the significance of study parameters on continuous scale within each group.

4.1. Statistical software

The Statistical software namely SAS 9.2, SPSS 15.0, Stata 10.1, MedCalc 9.0.1, Systat 12.0 and R environment ver.2.11.1 were used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc.

Table 1: Shows group A and Group B overall attentiveness and Instructiveness during the lecture class expressed in percentage

Groups	Attentive	Interactive
Group A	88.00%	66.67%
Group B	36.00%	30.67%

Table 2: Shows group A and Group B overall Scores expressed in Mean ± Standard Deviation

Scores	MCQ	SA	LA
Group A	4.64 ± 0.48	2.88 ± 0.32	6.34 ± 1.7
Group B	4.48 ± 0.66	2.84 ± 0.36	5.57 ± 1.61
P value	0.0939599	0.4835474	0.0053502

MCQ-Multiple choice question, SA-short answers, LA-long answers

Table 1 Shows group A students are more attentive in the class than Group B. It also shows that Group A students were more interactive in the lecture class than Group B.

Table 2 shows group A students have performed better in MCQ than Group B, there is no much change in answering the short answers between the groups. It also shows group A students have performed much better in Long answers than Group B with significant P value of 0.005.

69.4 percent of students from group B did not show much interest in the class. Whereas more than 66.7 percent student of Group A were attentive and interactive in the class. There was no significant difference in both the group's performance in MCQs. Group A did slightly better while answering short answers than Group B, but was statistically insignificant. Group A scored better than group B in long note questions with significant P value (<0.05). This shows, Group A had a better understanding of the topic compared to Group B. This Study also shows method followed by Group A was significantly better compared to Group B.

5. Discussion

Pre lecture studies ameliorate the cognitive load caused by new terminology and concepts in lectures. Pre-lecture resources scaffolds students' learning of the new material in a module by providing in advance of each lecture some information to ease the cognitive load associated with new material presented in a lecture.⁹

Studies have proved prior knowledge about the subject has a demonstrable influence on future exam performance over and above student aptitude.¹⁰

Most studies have proved pre lecture preparation to be more beneficial than other method of teaching, but not many studies are conducted on medical students especially on Online classes.

As our study conducted on medical students attending online physiology classes proves students who were prepared for upcoming lecture class were more attentive, interactive and performed better in the assessment.

6. Conclusion

Group A students who were aware of upcoming lecture class topic and had prepared, were more attentive in class, as well as interactive and performed better in the assessment. This study suggests to reduce the duration of online class, share the material of the class prior and encourage students to prepare on the topic for better results of online classes.

7. Source of Funding

Self.

8. Conflict of Interest

The authors declare no conflict of interest.

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