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**Original Research Article**

# Traditional method or online teaching; which method students prefer: an observational study

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## ABSTRACT

**Background:** An unexpected global pandemic broke out in initial months of 2020 i.e., COVID-19 which drastically brought a difference in the progress of education in various institutions, especially the medical field where we study about life was also made online. This study aims to conduct a comparative analysis of students 'opinion regarding which is the better, traditional teaching or online live teaching.
**Methods:** Survey was conducted among two group of students, 2019 (both online and offline teaching) and 2020 (online teaching with offline practical) batches of Andhra Medical College, Visakhapatnam. A questionnaire was circulated to students regarding the class experience, interest of attending the class, learning effect and clarity of the lecture.
**Results:** Students expressed their views that overall teaching experience and learning effect of offline methodology is superior to online approach, so the traditional offline style or the blend of online and offline modes are apt for teaching.
**Conclusions:** The study is focused on the way in which the teaching and learning approach is delivered which is favoured by the medical practitioners, the qualitative data suggesting required modifications for further improvement in the delivering method to produce qualified medical practitioners to meet the current and imminent situations. This study suggests that a intermingled learning approach is an effective method for anatomy learning, and this approach mainly inculcates self-directed study through online learning.

**Keywords:** Pandemic, Teaching approach, Learning approach

## INTRODUCTION

In India, Doctor is considered as an equivalent to God. Such respect is befitted to the honorable profession due to the efforts and sacrifices carried by the medical practitioners. Even though the profession is considered such esteem there are fewer personnel in the majority had the chance of obtaining achieving the place in a reputed medical institute and complete the course in a stipulated time. To cater the ever-growing health needs of the people considering the current population scenario, a large number of the medical practitioners are essential. The expertise, skill and knowledge plays a vital role while dealing with different perception individuals.[1] Being the second most populated country in the world, yet the medical facilities are far beyond the progress of the developed countries. This is due to the fact that the medical education is one of the toughest to purse and complete. The vast knowledge of human anatomy is difficult to digest in a few years of period with limited time. As an outcome of that majority of the population is scattered in various other fields which leads to shortage

of medical practitioners world-wide. As per the world health organization (WHO), the world is shortage of 2.6 million doctors.[2] To gratify the current state, experienced professors of the medical institutes should adapt multifaceted actions to improve the current state of the medical practitioners to improve the quality.[3]The knowledge imparted to the students should be apt to meet the current requirement. Till 2018, the mode of imparting such knowledge to the medical practitioner's is through chalk-board mode in coordination with physical examination of the patients.

In 2019, the world is shaken by the pandemic effect of COVID which had once again proved the importance and need of the medical practitioners to the world. Whereas it had also provided novel way to change the traditional teaching methodologies of the Education system. The online teaching approach in medical field however seems to be a different way to adapt since the students are supposed to be ready to work in an agile environment should learn in such conditions. Whereas now the concepts of human health are imparted to them in virtual mode. But considering those pandemic times, E-Learning seems to be the only effective alternative approach to cater the current need. Many research studies had made their varied opinions related to the quality of the learning through online mode.[4,5] The widespread effects of the pandemic confirming over a 35 million cases globally had shaken the world, had spread panic in the learning fields of medicine if exposed to the deadly virus.[6,8] Such disastrous circumstances had forced every field to be "safe than sorry". Due to which the students had preferred to stay at home and learn, thereby readying themselves for the imminent threats.[9] To cope with the current situation medical field had adapted the E-Learning methods, ensuring to impart the imperative knowledge without compromising the theme of the subject. The purpose of safety which comes first in such kind of situations however need to be assessed if the adapted E-learning is feasibility too students of medical field.[7] Certain research studies had been carried out to assess the understanding level of students from E-Learning Methods. Outcome of such studies had reported mixed result pertaining both positive and negative opinions.[10]

Human Anatomy being the rudimentary knowledge in further understanding the medical field is however taught using the traditional approaches of chalk and board followed by dissection of the deceased. The new E-Learning approaches however equipped the students about the theoretical studies using various multimedia methodologies had helped the students in imparting robust knowledge on the subject.[11] But the practical touch is what seems to be missing during these pertaining times questioning the knowledge of the medical students. Subsequently after the pandemic, it is needed to analyze the opinions of the students so as to learn the effectiveness of the adapted system in order to linger or alter the methodology of teaching learning. Accordingly, the study is aimed to observe, report and compare the differences between old traditional chalk-board method and E-learning methodologies.

## METHODS

This is a questionnaire based cross sectional descriptive study conducted among two batches of first year MBBS students. Out of them 2019 batch (250 students) have experienced both online and offline teaching and 2020 batch (250 students) have experienced exclusively online teaching with offline practical classes. Study population includes first year MBBS students of Andhra medical college, Viskhapatnam, from September 2020 to February 2021 which accounted for sample size of 400 students. A questionnaire was circulated to students regarding the class experience, interest of attending the class, learning effect and clarity of the lecture. The study included only medical students who enrolled in Andhra Medical College during the year 2019-2021 in the first year MBBS. To ensure confidentiality of the participants it didn't contain any identifying data or personal information. Questionnaires with incomplete information or missing data and students who were absent at the time of data collection were excluded from the analysis.

The questionnaire mainly comprised of the following questions: interest of attending the class, level of practical explanation through case studies and diagrams during teaching, level of interaction during the class, satisfaction level of understanding the class, availability of resources for listening the class, ease of grasping the prepared content during class within stipulated period, clarity of lecture, repetition of already delivered content, clarifying of doubts, broadening the knowledge, cultivating the ability of autonomous learning and overall learning experience. Student's individual opinion regarding each question was asked in the form of rating scale from 1 to 5, where 5 is the best and 1 is the worst, in both modes of teaching i.e., online and offline. Data was analysed by the SPSS software version 17 by independent t test mean scores and standard deviation were calculated for each response. The higher score was taken as positive response.

## RESULTS

A sample size of total 400 students was taken in the study ranging in the age group between 19-21 years comprising of 180 male and 220 female students. The mean scores for traditional offline teaching were significantly higher than online teaching. Most of the statements related to traditional teaching attained a good response where students conveyed a positive perception towards the traditional teaching. The students expressed more negative perceptions towards online teaching. All the statements showing highly significance for online and traditional teaching except for the statement cultivating the ability of autonomous learning which does not accept with the above (p value>0.05).

**Table 1: Teaching components.**

| Components of teaching | Online teaching | Traditional (offline) teaching | P value |
|---|---|---|---|
| **Interest of attending the class** | 2.49±1.25 | 3.52±1.27 | <0.001 |
| **Level of practical explanation through case studies and diagrams during teaching** | 2.32±1.24 | 3.58±1.35 | <0.001 |
| **Level of interaction during the class** | 2.22±1.25 | 3.44±1.33 | <0.001 |
| **Satisfaction level of understanding the class** | 2.32±1.2 | 3.46±1.23 | <0.001 |
| **Availability of resources for listening the class** | 2.85±1.29 | 3.37±1.29 | 0.003 |
| **Ease of grasping the prepared content during class within stipulated period** | 2.37±1.18 | 3.32±1.22 | <0.001 |
| **Clarity of lecture** | 2.59±1.25 | 3.46±1.19 | <0.001 |
| **Repetition of already delivered content** | 2.56±1.24 | 3.16±1.23 | <0.001 |
| **Clarifying of doubts** | 2.52±1.27 | 3.29±1.37 | <0.001 |
| **Broadening the knowledge** | 2.67±1.24 | 3.40 ±1.23 | <0.001 |
| **Cultivating the ability of autonomous learning** | 2.86±1.38 | 3.31±1.23 | 0.13 |
| **Overall learning experience** | 2.60±1.22 | 3.51±1.21 | <0.001 |

**Table 2: Distribution of study participants on the basis of sociodemographic details.**

| Socio demographic data | N (%) |
|---|---|
| **Age groups (years)** | |
| 16-18 | 130 (32.5) |
| 19- 21 | 200 (50) |
| >21 | 70 (17.5) |
| **Gender** | |
| Male | 180 (45) |
| Female | 220 (55) |
| **Socio-economic status** | |
| Upper | 70 (17.5) |
| Upper middle | 195 (48.75) |
| Lower middle | 135 (33.75) |

## DISCUSSION

To maintain the continuity of learning during the global pandemic COVID-19 universities have no other choice to succumb to online teaching even though it is merely impossible for teaching about the living without practical exposure. At the end of this experience in the first year of MBBS course, we asked what learning results we had obtained and how the students observed the efficiency of this modality of teaching, comparing two academic years during which students had followed face-to-face or online lessons.

Previous research had given both pros and cons of the online mode of teaching-learning certain key factors which favor the online mode is given below: travelling is time consuming for some of students who live far from universities, which can be utilized for study purpose.[12] Recorded classes can be repeated for a better understanding of difficult topics.

Teachers are available round the clock for clarifying doubts for students. In the study of Saverino survey among students showed following results they were able to interact socially with professors (4.4±0.38 offline and 4.19±0.56 online) and ask questions (4.20±0.37 offline and 3.97±0.71 online). These results were not statistically different. In addition, the students agreed that they were involved by the professors during the lesson (4.30±0.51 offline and 3.94±0.76 online). They obviously felt more

attentive and involved during offline sessions.[12] In present study, the above parameters like interaction with professors and clarifying doubts is 2.52±1.27 in online and 3.29±1.37 in offline. In the study of Alsoufi only 38.2% of students believed that e-learning can replace traditional teaching methods, although 73.6% students felt difficulty in the availability of resources were not adequate for better learning.[7] In present study , students felt availability of resources are better in offline compared to online teaching. The research outcomes validated few disadvantages of online mode of learning which are: students lack complete attention toward the class until the end as it is way far different from offline traditional teaching. Though availability of internet and mobile gadgets availability has been increased some students face technical and signal issues. There are also chances of spreading disinformation.[7] The study conducted revealed that in almost all aspects students felt traditional method of teaching is better than online instruction. Whereas the outcome of the result is not entirely against the E-Learning. Hence using the digital resources, a partial-combined E-Learning approach results in good outcome.

### *Limitations*

Firstly, this study is single center study with a small sample size and only students who studied in this medical college were included. Secondly, for better effectiveness of evaluation the results used only classical scale to

evaluate the teaching effect but lacked the evaluation of participants' long-term working ability. Further research is necessary to assess clinical performance and utilising this fundamental knowledge in their practice. Strict sampling process is not used and all eligible students were included in the study.

## CONCLUSION

Although the restrictions and limitations due to the pandemic have been difficult for both teachers and students to deal with, it has been possible to conduct the study program online as if it were in the classroom. The advantages and disadvantages of online teaching have been described in the discussion and this had allowed students to obtain better results in the exams in spite of absence of or with a minimal practical exposure. Our goal is not to highlight online teaching on the strength of these findings, but to support the use of facilities that can help students in studying such a broad and difficult subject, or support students who are unable to follow the course because they are engaged in offsite problems, for example. The use of tools such as recorded lessons or online meetings with the teacher could continue even when the pandemic is resolved and traditional lessons return.

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