

Original Article

## Study on Perception of Medical Students Toward Online and Offline Teaching at Diamond Harbor Government Medical College and Hospital

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### ABSTRACT

**Background:** The UNESCO-UNICEF-World Bank Survey on National Education Responses to COVID-19 School Closures collected critical information on how ministries of education in more than 110 countries continued to provide learning opportunities during school closures. As per the record of the MHRD Government of India, more than 32 crores of students have had to suffer from various restrictions since the nationwide lockdown from mid of March 2020. Online education refers to the process of education through the Internet, where students can seek knowledge 24/7 from any corner of the earth without going anywhere physically. Offline education is the traditional counterpart of online education and the original mode of learning that allows students to engage with their peers and teachers in a face-to-face setting on a regular basis.

**Objectives:** In this context, we intended to carry out a study on the perception of medical students of Diamond Harbor Government Medical College and Hospital (DHGMCH) toward online and offline teaching and to find out the sociodemographic profile of the study participants which constituted the first batch of DHGMCH.

**Material and Methods:** This is an Observational, descriptive study, Cross-sectional in design, conducted at Diamond Harbor Government Medical College and Hospital from July 11, 2022, to August 1, 2022.

**Results:** According to our study total number of participants were 82 out of which there were 63.4 % male 36.6% female. Majority of the participants (85.4%) found offline classes are interactive. As we found from our study population, majority of the participants (85.4%) want interactive offline classes. In our study, majority of the participants (89%) prefer opportunity of practical classes followed by facility of group discussions (72%).

**Conclusion:** It reveals that most of the students found offline classes are interactive. It shows that in online education, most of the students preferred interactive ways of online education. In offline education, the students have the major advantage of attending practical classes, followed by group discussions and one-to-one interaction with teachers. It reveals that in online education, the majority of students found no need to travel as a major advantage, followed by having flexible study locations and hours as well as having the ability to learn at their own pace. Although e-learning has opened a plethora of opportunities for learning among students, it can never completely replace offline classroom teaching.

**Keywords:** Online, Offline teaching, Teaching, Medical students

### INTRODUCTION WITH OBJECTIVES

The deadly coronavirus disease that began in China in December 2019 spread to various parts of the planet in a few months. On March 11, 2020, the World Health Organization declared it a pandemic. To prevent the uninhibited spread of the coronavirus, the world was forced to go into a complete shutdown. This sudden shutting down has put a barrier to all physical academic activities.

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The UNESCO-UNICEF-World Bank Survey on National Education Responses to COVID-19 School Closures collected critical information on how ministries of education in more than 110 countries continued to provide learning opportunities during school closures. For each level of education, most countries have developed policies regarding digital (internet-based) or broadcast (TV- or radio-based) remote learning. The most common approach focused on digital instruction, which was used by 42% of countries for pre-primary education, 74% of countries for primary education, and 77% of countries for upper secondary education.<sup>1</sup>

As per the record of the MHRD Government of India, more than 32 crores of students have had to suffer from various restrictions since the nationwide lockdown from mid of March 2020. Online learning was the only option left in the hands of the academicians to carry out academic activities, which is in line with the precautionary measures of COVID19.<sup>2</sup>

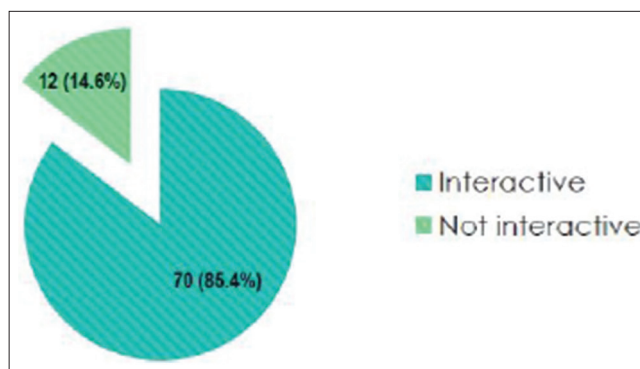
Online education refers to the process of education through the Internet, where students can seek knowledge 24/7 from any corner of the earth without physically going anywhere. The teacher uses various means, such as texts, audio, videos, and animations, to better understand the students.

Offline education is the traditional counterpart to online education and the original mode of learning. It allows students to regularly engage with their peers and teachers in a face-to-face setting, encourages collaboration on projects with other students, and helps them learn new skills. In addition, offline education allows teachers to observe their students' responses and behavior and respond as needed.

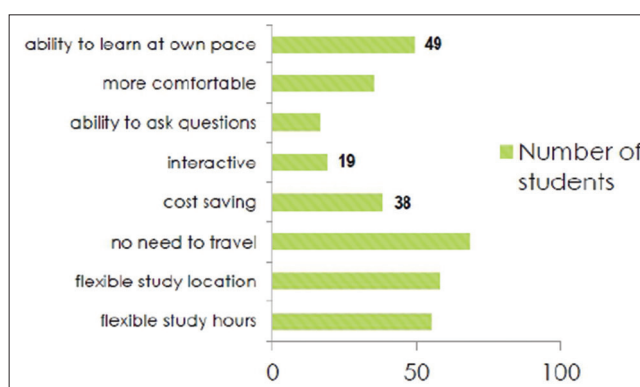
Due to online learning, both teachers and students face certain needs and challenges. Studies were also conducted on these issues.

According to a study by the International Journal of Creative Research Thoughts (IJCRT), a maximum (of 38.2%) of respondents disagree with the fact that online learning through the Internet is the same as offline learning in the classroom and 42.7% of the respondents face technical problems during online learning. Only 25% agree that online learning tools help to improve student's academic performance. Maximum (53.3%) respondents prefer online learning during the current situation of the COVID-19 pandemic. About 46.5% of respondents strongly agree that students will be more focused on offline than online learning. About 38.9% agree that offline learning makes students learn more than online learning.<sup>3</sup>

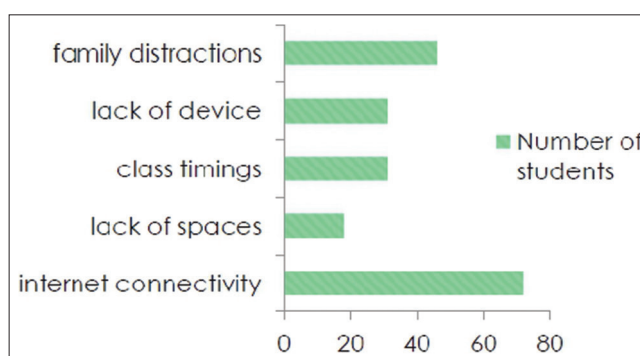
In this context, we intended to carry out a study on the perceptions of Diamond Harbor Government Medical College and Hospital (DHGMCH) medical students toward online and offline teaching and to determine the sociodemographic profile of the study participants, who constituted the first batch of DHGMCH.



**Figure 1:** Pie chart showing the distribution of students to whether offline classes are interactive ( $n = 82$ ) that reveals that most of the students found offline classes are interactive.



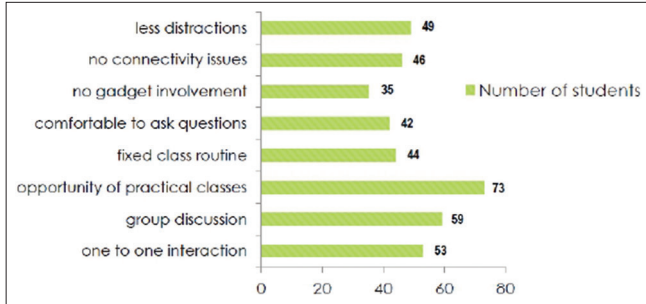
**Figure 2:** Bar diagram showing the distribution of students according to their perception of the advantages of online education ( $n = 82$ ; the numbers here are not exclusive) reveals that in online education, the majority of students found no need to travel as a major advantage, followed by having flexible study locations and hours and the ability to learn at their own pace.



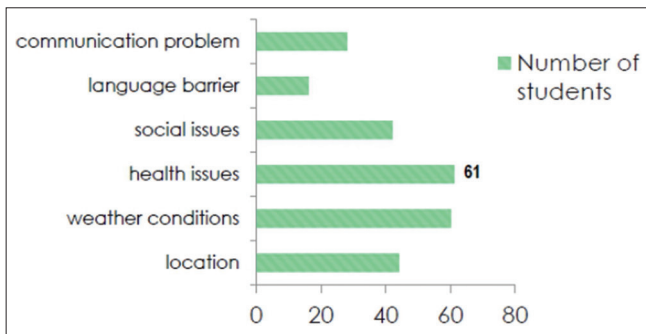
**Figure 3:** Bar diagram showing the distribution of students according to their perception of the barriers to online education ( $n = 82$ ; the numbers here are not exclusive) reveals that most of the students faced internet connectivity as a major barrier to their attending online education.

## MATERIAL AND METHODS

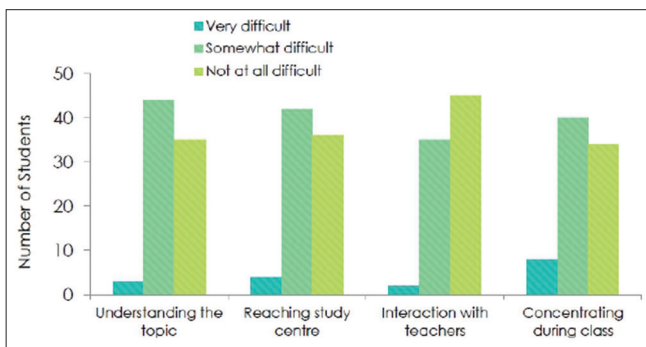
This is an observational, descriptive study and cross-sectional design conducted at DHGMCH from July



**Figure 4:** Bar diagram showing the distribution of students according to their perception of the advantages of offline education ( $n = 82$ ; the numbers here are not exclusive) shows that in offline education, the students have the major advantage of attending practical classes followed by group discussions and one-to-one interaction with teachers.

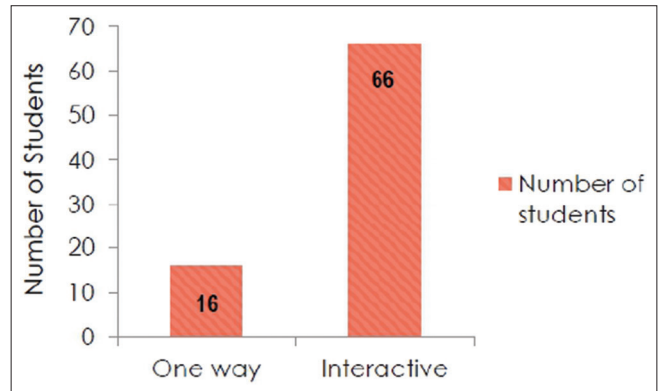


**Figure 5:** Bar diagram showing the distribution of students according to their perception of the barriers to offline education ( $n = 82$ ; the numbers here are not exclusive). It shows that in offline classes, the students faced major problems due to health issues, followed by bad weather conditions preventing them from attending classes.

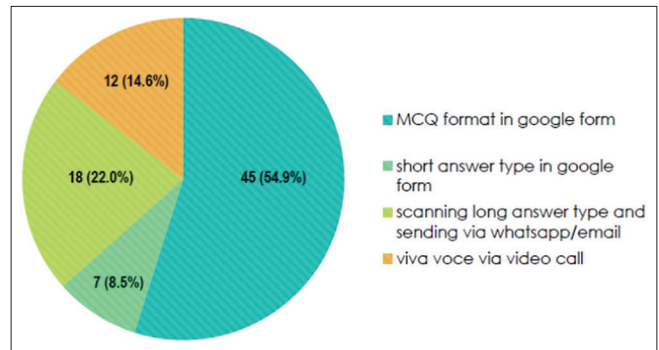


**Figure 6:** Bar diagram showing the distribution of students' various difficulties in offline learning ( $n = 82$ ) shows that in offline classes, students found understanding the topic and concentrating during the class a little difficult, but their interaction with teachers was good. However, reaching the center was a little difficult for most of them.

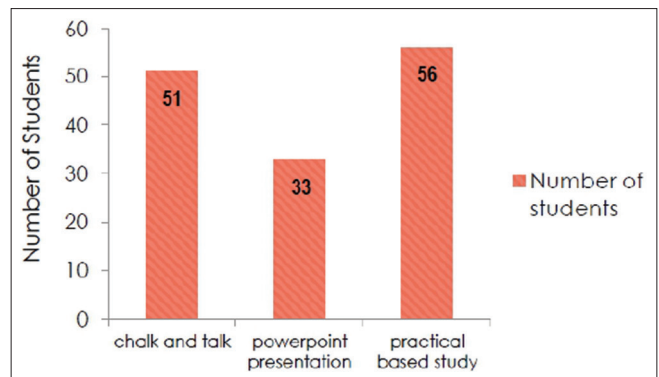
11, 2022, to August 1, 2022. Students of 1<sup>st</sup> batch of DHGMCH who were willing to participate in the survey



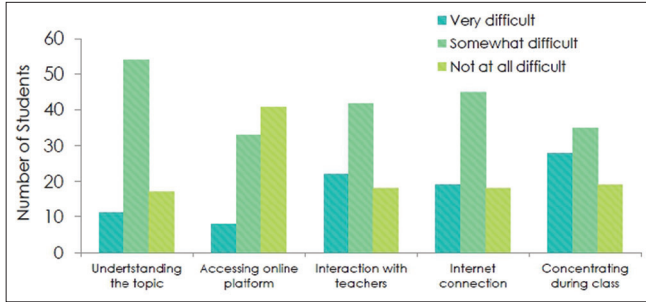
**Figure 7:** Bar diagram showing the distribution of students according to their preference for the mode of online education ( $n = 82$ ) that it shows that in online education, most of the students preferred the interactive way of online education.



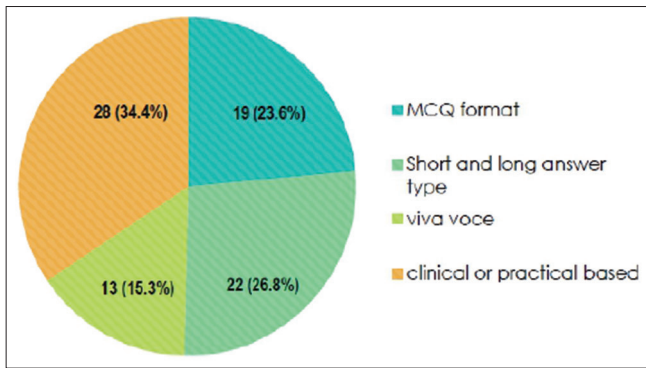
**Figure 8:** Pie chart showing the distribution of students to their preference for different modes of online exams ( $n = 82$ ) that showed that most of the students opted for multiple choice questions format in Google Form as a mode for giving online examinations.



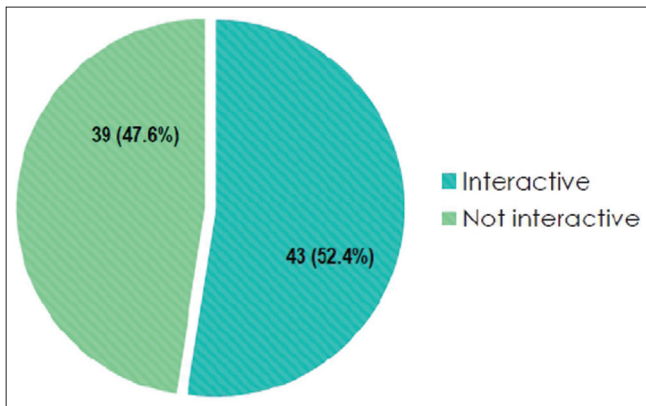
**Figure 9:** Bar diagram showing the distribution of students according to their preference for the mode of offline education ( $n = 82$ , the numbers here are not exclusive) that reveals that in offline education, most of the students prefer practical-based study followed by chalk and talk.



**Figure 10:** Bar diagram showing the distribution of students to various difficulties in online learning ( $n = 82$ ) revealed that in online classes, students found understanding the topic and interaction with the teacher moderately difficult but found concentrating during the online lectures very difficult. Accessing the online platform was not very difficult, but remaining connected during the lecture was a bit of a problem.



**Figure 11:** Pie chart showing the distribution of students to their preference for different modes of offline exams ( $n = 82$ ) that revealed that most of the students opted for clinical or practical-based examination as a mode for conducting offline exams.



**Figure 12:** Pie chart showing the distribution of students' perceptions of whether online classes are interactive ( $n = 82$ ) shows that students are almost undivided on their perception of the interactiveness of online classes.

were included in the study population. A predesigned, pretested, validated, and structured questionnaire was used as a study tool. Before collecting data, we attended briefing

**Table 1:** Distribution of study participants according to gender ( $n=82$ ) shows that most of the study participants consist of male students.

Sex	Number of students	Percentage (%)
Male	52	63.4
Female	30	36.6
Total	82	100

**Table 2:** Distribution of study participants according to age ( $n=82$ ) shows that most of the students are 22 years old, followed by 21 years old.

Age (in Years)	Number of students	Percentage (%)
20	8	9.8
21	25	30.5
22	29	35.4
23	14	17.1
24	4	4.9
25	1	1.2
26	1	1.2
Total	82	100

**Table 3:** Distribution of study participants according to place of stay ( $n=82$ ) shows that most of the students are residing at the hostel.

Place of stay	Number	Percentage (%)
Hostel	72	87.8
Rent	5	6.1
House	4	4.9
Others	1	1.2
Total	82	100

**Table 4:** Distribution of study participants according to place of residence ( $n=82$ ) shows that most of the students come from rural areas.

Place of residence	Number	Percentage (%)
Rural	58	70.7
Urban	24	29.3
Total	82	100

classes. Then, the students of the 1<sup>st</sup> batch of DHGMCH were interviewed on a one-to-one basis through a prepared questionnaire. Each student was interviewed individually. The students who gave consent were included in the study and asked questions from the pretested, predesigned, and validated questionnaire containing questions to assess both sociodemographic status and perception of students toward offline and online methods of learning. Students who were ill and not interested in participating were excluded from the study. All collected data were entered after editing the data in Microsoft Excel (The latest version), and descriptive analysis was performed using the same software. The data were then represented using appropriate diagrams, charts, and frequency distribution tables as and where applicable.

## RESULTS

A total of 82 students who gave consent were interviewed based on pre-tested and predesigned questionnaires. The

result of their responses is represented in the form of tables and charts under the following headings:

## DISCUSSION

The rapid change of the COVID-19 outbreak impacted almost all aspects of life, including academics. In our study, we focused on the perceptions of medical students of the 1<sup>st</sup> batch of DHGMCH toward offline and online teaching through a predesigned and pretested questionnaire.

According to our study, the total number of participants was 82, out of which 63.4% were male and 36.6% female [Table 1]. The majority of the participants (85.4%) found offline classes interactive. Similar data were found in a study conducted in Dakshin Kannada and Udupi districts.<sup>4</sup> The main advantage of online classes was found to be flexible study location (82.9%) followed by flexible study hours [Figure 1].

The major barriers to online teaching are difficulty in internet connectivity and family distractions [Figure 2]. Similar data were found in a study conducted at Polish Medical College, where the advantages were comfortable space and flexible timing, and the disadvantages were a lack of face-to-face interaction with teachers [Figure 3].<sup>5</sup>

As we found from our study population, the majority of the participants (85.4%) want interactive offline classes. Similarly, a descriptive cross-sectional study in Liaquat College of Medicine and Dentistry shows that 77% of students have a negative perception toward e-learning [Figure 1].<sup>6</sup>

In our study, the majority of the participants (89%) prefer the opportunity of practical classes followed by the facility of group discussions (72%). A similar study conducted on Azad Jammu Kashmir Medical College by IJCRT shows similar results [Figure 4].<sup>3</sup>

According to our study practical-based study, the method of offline education was found to be the most preferable form. A study conducted at MatejBel University showed that students preferred PowerPoint presentations as an offline learning method [Figure 1].<sup>7</sup>

Results from our study showed that health issues (74.4%) had most of the demerits in offline learning. A similar study done at the University of Canterbury showed that natural calamities like earthquakes had a detrimental effect on offline education, which was later substituted by online learning to resume academic activities [Figure 5].<sup>8</sup>

It was found in our study that in offline classes, students had little difficulty understanding the topic as well as concentrating during the class. In a similar study conducted by IJIRT, it was evident that understanding the topic during offline classes was better as compared to online classes but concentrating during the class was not at all feasible [Figure 6].<sup>9</sup>

In a study conducted by Paul and Jefferson, 46% would like to attend online and 48% would like to attend offline lectures, respectively.<sup>10</sup> Results from our study showed that students can concentrate better in offline classes than online.

We conducted an observational descriptive cross-sectional study among the phase I MBBS students of DHGMCH who agreed to participate [Figure 6]. We provided a predesigned and pretested questionnaire to 100 students, out of whom 82 responded. The majority of the study population were male (63.4%) and hostelites (87.5%).

In our study, the majority of participants, 80.5%, want an interactive way of online study, and 19.5% prefer the one-way communication mode [Tables 2-4]. Needlessness to travel was found to be most advantageous (82.9%) in the case of online education [Figure 7].

Difficulty in internet connectivity was found to be a barrier to online teaching (87.8%) in most cases [Figure 2]. The majority of the participants (54.9%) preferred the MCQ format of online examination, and 85.4% of the participants wanted interactive online classes [Figure 8].

The opportunity for practical classes (89%) was found to be most advantageous in offline education [Figure 8]. However, offline learning also has some barriers, among which health issues (74.4%) were found in the majority of the cases [Figure 9]. It was also found that interaction with teachers is not at all difficult, and concentrating during class is quite less difficult than in online classes [Figure 5].

The pandemic made this pretty clear that e-learning will play a major role in the future and both teachers and learners are getting accustomed to this new "New Normalcy" [Figure 6]. Both types of education are essential in their own right. Even though online learning has benefited us, it will never replace classroom education completely [Figures 10-12].

## Recommendations

### *Individual level*

Most of the students felt less interaction with peers and isolation, which created a negative psychological outcome for them. Students are reporting higher levels of boredom and frustration. Learning time management, taking a bit of a break, practicing self-care, staying positive, and asking for help can solve their problems. Those in clinical subjects suggested ways to start online case-based learning.

### *Family level*

Due to stress, parents might start noticing behavioral changes in their children, such as excessive arguments, refusals, opposition, defiance, or withdrawal. During this phase, parental support and guidance are very crucial.

Parents should be gentle and understanding with children, encourage them to talk about the issue, and try not to avoid their concerns.

### Community level

Students' attitudes and dispositions are influenced to a great degree by the support they receive from teachers and by the role models they are exposed to. Different forms of support from teachers, including teacher enthusiasm, are found to be important for the development of positive attitudes toward learning and can ensure that students acquire the attitudes that can maximize their ability to make the most of online learning opportunities.

### Limitations

In the study, a questionnaire was developed in Google document form, and it was analyzed to find the final results. The study has a few limitations as follows -

1. It is a cross-sectional study conducted in the online form and within a limited time, so a pilot study and face-to-face interview could not be done.
2. It is a study with a limited study population thus only 82 students could participate.
3. As we had our college semester examinations, we could not get sufficient time to conduct the study.

### CONCLUSION

The COVID-19 pandemic has posed an unprecedented challenge to the academic schedule. We conducted a study on the perception of medical students of 1<sup>st</sup> batch of DHGMCH toward online and offline learning. It was concluded from the study that students found offline classes more interactive (85.4%) than online classes (52.4%) and 89% of participants prefer practical-based offline classes over online classes. Students also found it easier to understand the topic better in offline classes as well as they could concentrate better in the same.

Although e-learning has opened a plethora of opportunities for learning among students, it can never completely replace offline classroom teaching.

### Ethical approval

The research/study was approved by the Institutional Review Board with Ethical Approval Memo No - DHGMC/2023/1138 dated 13/07/2023.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

### Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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