

TRADITIONAL VERSUS ONLINE TEACHING - A COMPARATIVE STUDY AMONG UNDERGRADUATE BDS STUDENTS

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ABSTRACT

Objectives: This study was conducted with a purpose to determine the perception of dental students toward traditional and online teaching methods.

Methods: A validated and structured questionnaire was prepared using Google Forms and the study link of the questionnaire was sent through WhatsApp to all the participants. The questionnaire consisted of two parts. The first part included the demographic information of the students. The second part constituted a pre-validated 16-item questionnaire on the perception of students on traditional and online teaching. The variables, such as interest, convenience, time, motivation, tiredness, distractions, satisfaction, retention, and understanding, were included. A 5-point Likert scale was used for collecting the responses. Descriptive statistics was used for the final analysis and were represented as percentages.

Results: Overall response rate was 98.2%. Female preponderance was more compared to male constituting 66%. Mobile (92.9%) was the gadget of preference followed by laptop (6.5%). Majority of students showed a negative inclination toward online teaching. They felt online teaching was less interesting, less motivating, with more distraction, low satisfaction, and lacked interaction. Meanwhile, they agreed that online teaching was more comfortable, cost-effective, and less time-consuming. Most of the students (63.1%) opted for a mixed method of teaching.

Conclusion: Both traditional and online methods have advantages and disadvantages at some levels. Mixed approach can be tried for better results.

Keywords: Online teaching, Perception, Traditional teaching.

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INTRODUCTION

Traditional teaching consists of classrooms which are teacher-centric. Even with the emergence of newer technologies, traditional teaching method is a very important part of the education system and relevant till date. Traditional teaching methods provide face-to-face interaction between the teacher and the student, which is one of the major advantages. This offers an effective and interesting medium for the students and has the capability to engage even the most inquisitive students [1,2]. Under the direct view of the teacher, the learners are further motivated, the few disinterested learners too can be engrossed in improved learning. Rapid advancements in technology have made distance education easy [3].

Because of enormous development in the field of information technology in these times, online teaching methods can be inculcated in the dental education sector with a lot of ease. It provides an adaptable and adjustable study environment compared to the traditional teaching methods. Nevertheless, we cannot undermine the traditional education system.

Online teaching is new in Indian dental education as in most of the universities the method of teaching is traditional. Only during the COVID-19 pandemics online teaching was introduced. Whereas in few other countries there is a partial introduction to online teaching methods in dental education and in Iran to nursing students before the pandemic [4].

Many studies have been done in other countries to evaluate the perception of online teaching in Dental education and concluded with different results. In a study done in Dental College in Maharashtra, India, 87% of students were of the opinion that online lectures with

PowerPoint presentations are helpful for their learning and in the same study 76% of the students preferred a combination of both online and traditional teaching methods [5]. In a study done in Pakistan on medical and dental students, the overall positive response was only 23% [6]. Similar study in New Delhi, 73.8% of the dental students had the opinion that offline mode is a better mode of learning the topics than E-learning [7].

Many Indian Universities have opted for online teaching in dental education. Hence, in the present study perception of dental students toward traditional and online teaching methods is studied.

METHODS

The study design was a cross-sectional descriptive study, designed and conducted among the dental undergraduate students from 1st year to final year of a dental college in Karnataka, India. The study was approved by the Institutional Human Ethics Committee of dental college (No, 532/GLBC/Z/11/11/IEC/2020-21). The sample size was 200 which included dental students from all the phases. A convenience sampling technique was used to select the participants for the study. Informed online consent form was taken before the start of the study.

The data were collected electronically by a self-administered 16-item questionnaire on comparison between traditional and online teaching. Most of the questions in the questionnaires were prepared by the departmental faculty and a few from previous published articles. All the questions were reviewed and validated by intra- and inter-departmental faculty. The electronic questionnaire was prepared using Google Forms, with consent form attached with it for the voluntary participation of students. The questionnaire comprised two parts. The initial part had the demographic details of the students. The latter

part constituted a pre-validated 16-item questionnaire on comparison between traditional and online teaching. The variables, such as interest, convenience, time, motivation, tiredness, distractions, satisfaction, retention, and understanding were included in the questionnaire. The link of questionnaire was sent through WhatsApp to all the participants. A 5-point Likert scale was used for the collecting the responses. {1 - strongly disagree, 2 - disagree, 3 - somewhat agree, 4 - agree, 5 - strongly agree} [8].

Statistical analysis

The data were collected and analyzed using Microsoft Excel 10 version. The results were tabulated and depicted in the form of percentages.

RESULTS

In the present study, a total of 200 questionnaires were handed out among the dental students from 1st year to final year, out of which 98.2% responded with completely filled-up questionnaire. The age group of the subjects was between 19 and 23 years and female (66%) participants were more compared to male participants in the present study (Table 1 and Fig. 1). Among gadget preference, 92.9% of them used mobile phones, 6.5% used their laptops, and rest used desktop as gadgets to attend online classes (Fig. 2).

From Table 2, to analyze the response in Likert’s scale the options of strongly agree and agree were collectively considered as agreed. Likewise, options strongly disagree and disagree were considered as

disagree. Majority of the students had negative perception toward online learning methods. Most of the students responded that the online teaching method is less interesting (69.1%), less motivating (70%), and not satisfying (61%). There is less understanding in online teaching compared to traditional teaching (58.5%). Online teaching is more prone to distractions (79.7%) so there is reduced learning (65.1%) and retention (62.6%).

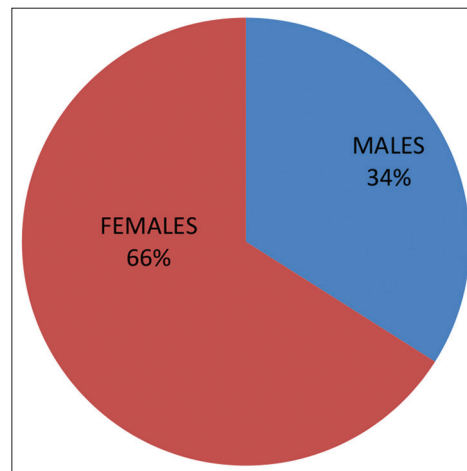


Fig. 1: Gender distribution

Table 1: Demographic profile and gadget preference for online learning

	Frequency	Percentage
Gender		
Male	64	33.9
Female	126	66.1
Year of study		
1 st year	81	42.6
2 nd year	55	28.9
3 rd year	26	13.6
4 th year	28	14.7
Choice of gadgets		
Mobile	176	92.9
Laptop	13	6.5
Computer	1	0.5
Tablet	0	0

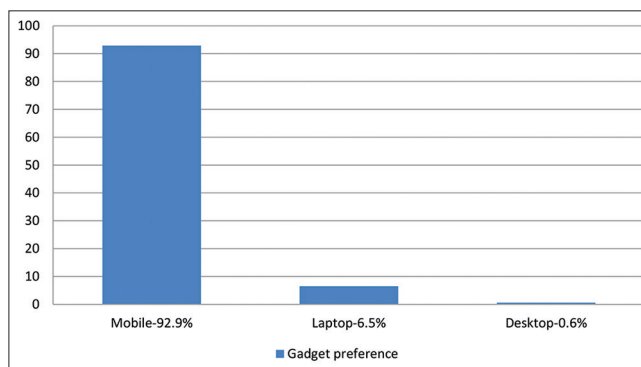


Fig. 2: Gadget preference

Table 2: Perception of students toward traditional and online teaching

Sl. no	Variables	Strongly agree (%)	Agree (%)	Neither agree nor disagree (%)	Disagree (%)	Strongly disagreed (%)
1	Online teaching is more interesting than traditional teaching	17 (8.9)	32 (17)	36 (18.8)	68 (35.7)	37 (19.6)
2	Online teaching is more convenient than traditional teaching	20 (10.7)	27 (14.3)	41 (21.4)	76 (40.2)	26 (13.4)
3	Online teaching is more cost-effective than traditional teaching	27 (14.3)	48 (25)	51 (26.8)	51 (26.8)	13 (7.1)
4	Online teaching is not more time-consuming than traditional teaching	22 (11.6)	81 (42.9)	36 (18.8)	22 (11.6)	29 (15.2)
5	Online teaching is more motivating than traditional teaching	13 (7.1)	10 (5.4)	27 (14.3)	87 (45.5)	53 (27.7)
6	Online teaching is not more tiring than traditional teaching	24 (12.5)	66 (34.8)	31 (16.1)	42 (22.3)	27 (14.3)
7	Online teaching is more prone to distractions than traditional teaching	66 (34.8)	92 (48.2)	17 (8.9)	7 (3.6)	8 (4.5)
8	Online teaching does not provide more learning than traditional teaching	44 (23.2)	85 (44.6)	29 (15.2)	22 (11.6)	10 (5.4)
9	Online teaching is more satisfying than traditional teaching	15 (8)	20 (10.7)	34 (17.9)	87 (45.5)	34 (17.9)
10	Online teaching does not have more retention than traditional teaching	32 (17)	92 (48.2)	39 (20.5)	20 (10.7)	7 (3.6)
11	Online teaching provides more understanding than traditional teaching	17 (8.9)	13 (7.1)	44 (23.2)	85 (44.6)	31 (16.1)
12	Mixed method of learning using both traditional as well as online teaching learning is the best approach for maximizing students learning	61 (32.1)	64 (33.9)	32 (17)	26 (13.4)	7 (3.6)

On the other hand, online teaching is cost-effective (39.3%), less time-consuming (52%), and less tiring (45.4%). For students traditional teaching is more interesting (69.1%), motivating (70.7%), satisfying (61.1%), with more retention and understanding (58.5%). However, most of the students (63.1%) opted for mixed method of teaching, i.e., blending of both traditional and online teaching.

DISCUSSION

In recent years, online courses are becoming popular due to rapid development in information technology. The present study was carried out to determine the perception of dental students toward online and traditional teaching methods. The purpose of the study was to compare their insights toward the two teaching methods.

The study included 200 dental undergraduate students studying from 1st year to final year out of which 98.2% gave voluntary consent to the study. The age range of the students was 19–23 years, out of which 66% were female and 34% were male (Fig. 1).

Most of them (93%) used mobile phones, followed by laptops (14%). This is consistent with other studies done in other parts of India where mobile use was 81% [6]. The reason could be due to the affordability of smartphones compared to laptop/computer, easy accessibility, and feasibility.

In the current study, it was observed that majority of the students showed a negative inclination toward online teaching. Most of the students were of the opinion that the online teaching method is less interesting (69.1%), less motivating (70%), and not satisfying (61%). They refused to accept that online teaching provides more understanding and is better than traditional teaching (58.5%). This goes in accordance with studies conducted by Noor *et al.* where 77.7% of students showed a negative perception toward online teaching [7]. The reason for the negative perception of dental students toward online teaching could be due to the inability to learn psychomotor skills which is very much required for the dental practice. Another reason for this could be, difficulty in demonstrating the practical/clinical skills through virtual platform for the teachers.

In addition, online teaching was more prone to distractions (79.7%) which could be the reason for their reduced retention (62.6%) and learning (65.1%). A similar opinion was observed in students of countries such as China, Malaysia, and Singapore [8-10] and in another study on nursing students in Iran [4].

The overall negative perception toward online teaching could be due to a lack of interaction with teachers and classmates, superficial learning, hardware problems, interference by family members and home affairs, and being far away from the clinical context.

On the other hand, few students were of the opinion that online teaching was cost-effective (39.3%), less time-consuming (52%), and less tiring (45.4%) and the learning can be done anywhere as observed in the study done by Murphy *et al.* [11].

Our study further showed that traditional teaching was more interesting (69.1%), motivating (70.7%), and satisfying (61.1%), with more retention and understanding (58.5%). Recent studies have shown that students with years of learning experience by traditional teaching methods found it difficult to adjust with sudden shift to online teaching methods. The main reason is a lack of technical skills thereby leading to poor academic performance.

There should be a fine balance between knowledge, practical, and clinical skills which is possible in traditional teaching. Few of the research findings show that the summative exam scores of traditional learners were far superior to online learners [12,13].

On the other hand, 63.1% of the students were of the opinion that mixed method i.e., blending both the online and traditional teaching methods

was the best approach to maximize student learning. The combined influence of online and traditional teaching methods which is also called “blended teaching” can bring the best results from students [14]. It is a method which is considered as an easy and advanced way of teaching. In a similar study done on dental students by Patil *et al.* 76.4% of students opted for the blended teaching methods which are in accordance with the present study findings [5]. In addition, studies done by Asiry, Reynolds *et al.*, and Turkyilmaz *et al.* supported the blended approach in dental education [15-17]. A recent review by, Vallée *et al.* has found that blended learning has a positive effect on cognition [18].

In the field of medical education blended learning is now a promising alternative as it has advantages over both the traditional and online teaching methods. Many medical universities across the world have now accepted blended teaching as their daily practice [19]. Blended learning has the potential to accelerate course completion, increases retention, and also provide higher satisfaction among students [20].

Blended learning has a large consistent positive effect on acquiring knowledge when compared to conventional methods of learning. The reason is that students are able to rewatch the online classes from their saved files which has a positive effect on their performance [21].

Eminent scholars such as Tang and Mcbrein studied 45 research articles and found out incorporating online teaching methods will be beneficial for learning [3].

The study is subject to few limitations. First, it had only a small group of participants. In addition, there were limited reference articles on the present study as online teaching methods gained momentum only after the emergence of the COVID-19 pandemic. With these limitations to the study, this research provided us with additional information about the perception of students regarding these two teaching methods. The methodology and procedures used in this study can be further expanded on in future for further evaluation of this subject.

CONCLUSION

The present study compared the effectiveness of online versus traditional teaching methods. We found that online and traditional teaching methods had their own advantages and disadvantages. It was concluded that students had an overall negative perception toward the online teaching method when compared to traditional teaching. In addition, most of the students opted for blended teaching methods.

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AUTHORS CONTRIBUTION

All the authors are involved in designing, collecting the data, analyzing the results as well as drafting the data of the study.

CONFLICTS OF INTEREST

None.

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REFERENCES

1. Young JR. Rethinking the role of the professor in an age of high-tech tools. *Chron High Educ.* 1997;44:26-8.
2. Pei L, Wu H. Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-

- analysis. *Med Educ Online*. 2019;24(1):1666538.
3. McBrien JL, Cheng R, Jones P. Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. *Int Rev Res Open Distance Learn*. 2009;10(3):1-17.
 4. Salmani N, Bagheri I, Dadgari A. Iranian nursing students experiences regarding the status of e-learning during COVID-19 pandemic. *PLoS One*. 2022 Feb 2;17(2):e0263388.
 5. Patil D, Singh S, Katge F, Jain R, Bhanushali N, Bhanushali P. Perception of undergraduate dental students toward online lectures during COVID-19 lockdown period. *World*. 2021 Jan;12(1):64-9.
 6. Abbasi S, Ayoob T, Malik A, Memon SI. Perceptions of students regarding E-learning during Covid-19 at a private medical college. *Pak J Med Sci*. 2020 May;36(COVID19-S4):S57-61. doi: 10.12669/pjms.36.COVID19-S4.2766
 7. Noor R, Singh D, Agarwal A, Mansoori S, Ansari MI. Perception of dental students towards the online method of dental education during the COVID-19 pandemic. *J Oral Biol Craniofac Res*. 2022 Mar 1;12(2):223-7.
 8. Preedy VR, Watson RR, editors. Point likert scale. In: *Handbook of Disease Burdens and Quality of Life Measures*. New York: Springer; 2010. doi: 10.1007/978-0-387-78665-0_6363
 9. Ali NA. Students Disappointed with Online Teaching System Amid COVID-19. Retrieved from Daily Times; 2020. Available from: <https://dailytimescompk/587446/students-disappointed-with-online-teaching-system-amid-covid-19>
 10. Bao W. COVID-19 and online teaching in higher education: A case study of Peking University. *Hum Behav Emerg Technol*. 2020 Apr;2(2):113-5.
 11. Murphy A, Farley H, Lane M, Hafeez-Baig A, Carter B. Mobile learning anytime, anywhere: What are our students doing? *Aust J Inform Syst*. 2014 Nov 1;18(3):
 12. Brown BW, Liedholm CE. Teaching microeconomic principles-can web courses replace the classroom in principles of microeconomics? *Am Econ Rev*. 2002;92(2):444-8.
 13. Figlio DN, Rush M, Yin L. Is it Live or is it Internet? Experimental Estimates of the Effects of Online Instruction on Student Learning. NBER Working Paper No. 16089. National Bureau of Economic Research; 2010 Jun.
 14. Dodiya D, Vadasmiya DS, Diwan J. A comparative study of flip classroom teaching method versus traditional classroom teaching method in undergraduate medical students in physiology. *Natl J Physiol Pharm Pharmacol*. 2019 Feb 6;9(6):551-5.
 15. Asiry MA. Dental students' perceptions of an online learning. *Saudi Dent J*. 2017 Oct 1;29(4):167-70.
 16. Reynolds PA, Rice S, Uddin M. Online learning in dentistry: The changes in undergraduate perceptions and attitudes over a four-year period. *Br Dent J*. 2007 Oct;203(7):419-23.
 17. Turkyilmaz I, Hariri NH, Jahangiri L. Student's perception of the impact of e-learning on dental education. *J Contemp Dent Pract*. 2019 May 1;20(5):616-21.
 18. Vallée A, Blacher J, Cariou A, Sorbets E. Blended learning compared to traditional learning in medical education: Systematic review and meta-analysis. *J Med Internet Res*. 2020 Aug 10;22(8):e16504.
 19. Dziuban C, Graham CR, Moskal PD, Norberg A, Sicilia N. Blended learning: The new normal and emerging technologies. *Int J Educ Technol High Educ*. 2018 Dec;15(1):1-6.
 20. Garrison DR, Kanuka H. Blended learning: Uncovering its transformative potential in higher education. *Internet High Educ*. 2004;7(2):95-105.
 21. Wu JH, Tennyson RD, Hsia TL. A study of student satisfaction in a blended e-learning system environment. *Comput Educn*. 2010 Aug 1;55(1):155-64.