



A Comparative Study between Traditional and Online Teaching-Learning: Medical Students' Perspective in the Wake of Corona Pandemic

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Financial Support: None declared

Conflict of Interest: None declared

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How to cite this article:

Rawat R, Singh P. A Comparative Study between Traditional and Online Teaching-Learning: Medical Students' Perspective in the Wake of Corona Pandemic. Natl J Community Med 2020;11(9):341-345.

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Date of Submission: 02-09-2020

Date of Acceptance: 10-09-2020

Date of Publication: 30-09-2020

ABSTRACT

Background: Teaching for the students may be either taken up traditionally in a classroom or online. This study was aimed to compare the perspectives of medical students regarding Traditional and Online Teaching-Learning and to explore the association between the perception of the students regarding the preferred method and their respective genders.

Material and Methods: The study was conducted on 3rd year MBBS students of Adesh Medical College and Hospital, Shahabad (M), Kurukshetra using a self designed semi-structured questionnaire for data collection.

Results: A higher proportion of students agreed that online teaching as compared to traditional teaching was more convenient, more cost-effective, more time-consuming, more tiring, more prone to distractions, provides more learning and has more retention while a higher proportion of students disagreed that online teaching as compared to traditional teaching was more interesting, more motivating, more satisfying and provides for more understanding. A significant association was detected between a few crucial variables and gender of the students.

Conclusions: Clear cut superiority of either method could not be conclusively established. Majority of the students responded in favour of mixed or blended learning. This method could be explored in future. To iron out the effect of gender on the differing perspectives, upgrading the technology know-how of the students coupled with counseling could be resorted to.

Key Words: Traditional Teaching, Online Teaching, Blended Learning, Medical Students, corona pandemic

INTRODUCTION

Traditional and Online Teaching methods have both been used in imparting higher education for quite sometime although the usage of online learning has undergone a marked increase since 2012.¹ Sadly, no final conclusion has ever been reached as to which of the two methods holds more favour and promise in the eyes of the medical students.^{2,3} Traditional teaching was the only method of teaching available before the advent of the internet. A major advantage of this form of teaching learning

is that it provides for ample personal face to face interactions between the teacher and the taught. This in itself provides for a very motivating environment for the learners and has the potential to engross even the most disinterested learner.^{4,5} These days the electronic media and internet has reached to every nook and corner and has assumed a significant place of importance in our everyday life. It is also serving as an important tool to complement traditional teaching. Its biggest advantage is that it makes it possible to separate teaching and learning in both time and space.⁵

At present the world is reeling from the corona pandemic situation. During these unprecedented times when countrywide lockdowns were stringently being imposed by the various national governments world over, the only option left with teachers in general and medical faculty in particular was to hold classes for their students by taking assistance from technology i.e to resort to online teaching methods. This was a novel exercise both for the teachers as well as the taught as under these circumstances classes were exclusively being conducted through this method. Even the teachers who had shied away up till now from utilizing online methods to teach their students and generally bore a disdain for this method, had no other option but to resort to it to conduct their classes. It is under these extraordinary circumstances, when medical students along with their teachers are getting more and more conversant with the online method of teaching learning, that we decided to embark upon a study which could gather a more accurate picture of the perspectives of students regarding the age old traditional classroom method of teaching and the more novel but exclusive method of teaching these days which is the online method.

OBJECTIVES

This study was conducted to compare the perspectives of medical students regarding Traditional and Online Teaching-Learning, and also to explore the association between the perceptions of the students regarding preferred method of Teaching Learning and their respective genders.

MATERIAL AND METHODS

The study was designed as a Web based cross sectional study to be conducted on 3rd year MBBS students of Adesh Medical College and Hospital, Shahabad (M), Kurukshetra. Convenience sampling was used to enroll the MBBS students of 2017 Batch for the study. The data was collected in June-July 2020. Prior approval for the conduct of the study was obtained from the Institutional Ethics Committee.

Study Tool: A self designed semi-structured questionnaire was used for data collection. Google docs were used to administer the questionnaire and collect data electronically. Out of a total of 150 students, 142 participated in our study (response rate =94.7%) The first part of the questionnaire elicited general information (age, sex) of the study subjects. The second part of the questionnaire was designed to know the perception of the participants regarding traditional and online teaching during this

pandemic. It was a 12 item questionnaire with items answerable on a five point Likert scale having the entire spectrum of options from strongly agree to strongly disagree. 8 of the items had positively worded statements and 4 had negatively worded statements. The negatively worded statements were reverse scored.

The content validity of the tool was performed by experts from the Deptt. Of Community Medicine. The expert panel was asked to evaluate the questions on the basis of language appropriateness and ease of understanding for 2017 batch medical students. Before embarking on the actual study, a pilot study was carried out on 10-15 students, after taking consent, to ascertain the clarity and applicability of the questionnaire and to identify obstacles that may be faced during data collection. These students were excluded from the main study. Based on the results of the pilot study, essential modifications were made in the questionnaire.

Statistical Analysis: Data was analyzed by using SPSS version 21. The Percentages and the number of participants were presented for categorical variables and comparisons were made. The association between the perception variables and gender of the participants was assessed using chi-square test. P value <0.05/0.01 was considered as statistically significant/highly significant.

RESULTS

Table 1 shows the age and gender wise distribution of the study participants. More number of females participated in our study as compared to males.

Table 2 shows that a higher proportion of students agreed that online teaching as compared to traditional teaching was more convenient (43.7% > 37.3%) , more cost-effective (38% > 30.2%) , more time-consuming (35.9% > 30.2%), more tiring (50.8% > 30.2%) , more prone to distractions (76% > 12%) , provided more learning (52.1% > 19%) and has more retention (57.1% > 31.8%) . On the other hand, a higher proportion of students disagreed that online teaching as compared to traditional teaching was more interesting (60.6% > 17.6%), more motivating (73.2% > 10.5%) , more satisfying (60.6% > 13.4%) and provided for more understanding (53.6% > 13.4%).

Table 1: Age and gender wise distribution of the study participants

Age Group	Female (%)	Male (%)	Total (%)
≤21 yr	50 (0.641)	37 (0.578)	87 (0.613)
>21 yr	28 (0.359)	27 (0.422)	55 (0.387)
Total	78 (1)	64 (1)	142 (1)

Table 2: Perception of the students regarding traditional and online teaching

Variables	Strongly Agree (%)	Agree (%)	Neither agree nor disagree(%)	Disagree (%)	Strongly Disagree (%)
Online teaching is more interesting than traditional teaching	5(3.5)	20(14.1)	31(21.8)	64(45.1)	22(15.5)
Online teaching is more convenient than traditional teaching	12(8.5)	50(35.2)	27(19.0)	42(29.6)	11(7.7)
Online teaching is more cost effective than traditional teaching	11(7.7)	43(30.3)	45(31.7)	33(23.2)	10(7.0)
Online teaching is not more time consuming than traditional teaching	8(5.6)	35(24.6)	37(26.1)	51(35.9)	11(7.7)
Online teaching is more motivating than traditional teaching	5(3.5)	10(7.0)	23(16.2)	72(50.7)	32(22.5)
Online teaching is not more tiring than traditional teaching	9(6.3)	34(23.9)	27(19.0)	60(42.3)	12(8.5)
Online teaching is more prone to distractions than traditional teaching	35(24.6)	73(51.4)	17(12.0)	13(9.2)	4(2.8)
Online teaching does not provide more learning than traditional teaching	7(4.9)	20(14.1)	41(28.9)	57(40.1)	17(12.0)
Online teaching is more satisfying than traditional teaching	5(3.5)	14(9.9)	37(26.1)	71(50.0)	15(10.6)
Online teaching does not have more retention than traditional teaching	5(3.5)	26(28.3)	30(21.1)	66(46.5)	15(10.6)
Online teaching provides more understanding than traditional teaching	1(0.7)	18(12.7)	47(33.1)	63(44.4)	13(9.2)
Mixed method of learning using both traditional as well as online teaching learning is the best approach for maximising students learning.	39(27.5)	64(45.1)	30(21.1)	5(3.5)	4(2.8)

Table 3: Association between the Perception Variables and Gender of the Participant

Variables	Female (T= 78) (%)	Male (T= 64) (%)	P Value
Online teaching is not more time consuming than traditional teaching			
Agree	31 (39.7)	12 (18.8)	0.025
Neither agree nor disagree	17 (21.8)	20 (31.3)	
Disagree	30 (38.5)	32 (50)	
Online teaching is more motivating than traditional teaching			
Agree	4 (5.1)	11 (17.2)	0.036
Neither agree nor disagree	11 (14.1)	12 (18.8)	
Disagree	63 (80.8)	41 (64.1)	
Online teaching does not provide more learning than traditional teaching			
Agree	10 (12.8)	17 (26.6)	0.009
Neither agree nor disagree	30 (38.5)	11 (17.2)	
Disagree	38 (48.7)	36 (56.3)	
Online teaching is more satisfying than traditional teaching			
Agree	8 (10.3)	11 (17.2)	0.01
Neither agree nor disagree	14 (17.9)	23 (35.9)	
Disagree	56 (71.8)	30 (46.9)	
Mixed method of learning using both traditional as well as online teaching learning is the best approach for maximising students' learning.			
Agree	63 (80.8)	40 (62.5)	0.048
Neither agree nor disagree	11 (14.1)	19 (29.7)	
Disagree	4 (5.1)	5 (7.8)	

Mixed method of learning came out to be the most favoured approach in the perception of a majority of students. (72.6% > 6.3%).

In Table 3, the Likert scale options of strongly agree and agree were merged, for computational purpose, into a single option as **Agree** while, in a similar fashion, the options of strongly disagree and disagree were merged into a single option as **Disagree**. It was seen that a significantly higher proportion of males as compared to females ($P < 0.05$) disagreed to the contentions that online teaching is not more time consuming and does not provide more learning than traditional teaching whereas a significantly higher proportion of females as compared to males ($P < 0.05$) disagreed to the contentions that online teaching is more motivating and more satisfying than traditional teaching. Lastly, a significantly higher proportion of females as compared to males ($P < 0.05$) agreed to the

contention that mixed method of learning is the best approach for maximising students' learning. No significant association was found between the other perception variables and gender.

DISCUSSION

In our study, a higher proportion of students agreed that online teaching as compared to traditional teaching was more convenient, more cost-effective, more time-consuming, more tiring, more prone to distractions, provides more learning and has more retention. On the other hand, a higher proportion of students disagreed that online teaching as compared to traditional teaching was more interesting, more motivating, more satisfying and provides for more understanding.

It is evident in our study that students perceived both the methods as more or less equivalent with

no clear preference for either method. This is similar to the findings of Chauhan et al (2019)⁶, in whose study, the students perceived both methods as equivalent. The finding in our study which reveals that a higher proportion of students found traditional teaching more interesting is also supported by Chauhan et al (2019)⁶ who reported in their study that the experience of students was slightly skewed in preference for the lecture method as compared to e-learning. This could be due to the fact that students are more accustomed to the traditional teaching method right since their school days. This is however in contrast to the findings of Warnecke and Pearson (2011)⁷ who reported in their study that majority of the students felt online learning as more enjoyable.

In our study a higher proportion of students felt that online learning provides more learning while a higher proportion felt that traditional teaching provides for more understanding. This seemingly conflicting result can be explained by the fact that as a lot of material in various formats can be rapidly and easily disseminated through online learning, it is more capable of providing higher learning. However, in-person content delivery, expert facilitation, and face-to-face interaction which are the hallmarks of traditional teaching could lead to more understanding amongst the students. In the study by Warnecke and Pearson (2011)⁷ students reported in favour of online learning that it helped to increase their existing knowledge. The reason of this behavior could have been the difference in learning styles and personal preferences of students.⁷⁻⁹ Similarly, according to Behrooz Golchahi et al (2012)¹⁰, e-learning is more efficient because learners gain knowledge, skills, and attitudes faster than through traditional instructor-led methods. This efficiency is likely to be translated into improved motivation and performance. E-learners have demonstrated increased retention rates and better utilization of content, resulting in better achievement of knowledge, skills, and attitudes.¹¹ Learning delivery is the most often cited advantage of e-learning and include increased accessibility to information, ease of distribution, standardization of content, and accountability.^{12,13} Accessibility refers to the user's ability to find what is needed, when it is needed.^{13,14} Internet technologies permit the widespread distribution of digital content to many users simultaneously anytime and anywhere.¹⁰

In our study, a very high proportion of students (72.6%) agreed that mixed method of learning is the best approach for maximising students learning. This blended learning which is a fairly new term in education but a concept familiar to most educators, is an approach that combines e-learning technology with traditional instructor-led training,

where, for example, a lecture or demonstration is supplemented by an online tutorial.¹⁵ This finding in our study is similar to the findings of Chauhan et al (2019)⁶ in whose study a majority of the students (85%) felt that the traditional lecture method followed by e-learning would be of a great benefit to them and shall help them to grasp the subject details better. Earlier studies have also inferred that online curriculums and sharing of computer-based modules can be utilized along with traditional teaching to enhance the learning experience.^{16,17,18} Online learning could thus be used alongside traditional methods to fill the knowledge gaps for the students. This mixed or blended learning can take the students to higher order learning. Blended learning may be a good future option.^{19,20,21}

As far as association of perception with gender is concerned, in our study, a significantly higher proportion of males reported to finding online teaching as more time consuming and capable of providing more learning in comparison to traditional teaching. Conversely, a significantly higher proportion of females reported not to find online teaching as a more motivating and more satisfying option in comparison to traditional teaching. One possible explanation for these findings could be that females are less technology savvy as compared to males and hence have a natural abhorrence to learning by use of technology. This could be the reason for them not finding online methods of teaching as motivating and satisfying. Males, on the other hand, being sounder in technology skills, would learn better by online method. At the same time, since males could use technology for many other non-educational purposes, they could likely report to finding online method of teaching as unnecessarily time-consuming. These differences in perceptions between the genders hold a room for further exploration.

CONCLUSION

Our study was an attempt to explore the perception of MBBS students regarding traditional and online methods of teaching learning at a time when they are in a befitting position to make such comparisons. However, it is evident that students favour both the methods in a more or less equal proportion. Neither of the methods is favoured in all aspects. Thus, superiority of one method over the other is not conclusively established. Moreover, majority of the students feel that using an admixture of the two methods which is also called as Blended learning is the best way to maximize their learning. This option holds most promise and is worth exploring as a gratifying teaching tool by the medical faculty in the times to come. As we also

found significant difference in perception between the two genders for a few crucial variables, we could iron them out by relevant means such as upgrading technical know-how of the students and by providing counseling.

ACKNOWLEDGEMENTS

We extend our heartfelt thanks to all the students who participated in our study. We also thank our institute for providing us permission to conduct the study.

Ethical approval: The present study was undertaken after approval of Institutional Ethics Committee (IEC) of Adesh Medical College & Hospital, Shahabad.

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