e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2022; 14(8); 821-826

Original Research Article

An Analytical Assessment of the Perceptions of Undergraduate Medical Students towards Acceptance of E-Learning Vs Conventional Methods in an Integrated Curriculum in Physiology

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Received: 25-01-2022 / Revised: 18-03-2022 / Accepted: 30-04-2022
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Conflict of interest: Nil

Abstract

Aim: To assess their perceptions of undergraduate medical students towards effectiveness of the E-learning platform in comparison with traditional methods of learning.

Methodology: A cross-sectional design was conducted under the Department of Physiology, NSMCH, Bihta, Patna, Bihar targeting first and second year medical undergraduate students who utilized e-learning module during the Covid-19 pandemic closure time. The same set of students were taught earlier using traditional methods. An online written consent was taken from each participant through the invitation to participate in the study. Data was collected in the period for three months by using a structured online questionnaire on Google forms. The questionnaire was available in English language.

Results: Out of 200 participants, 39.5% were males, and 60.5% were females. 47.5% belonged to second year and 52.5% were third year students. Mean age of the students was 20.16 ± 1.46. Only 34.5% students had previous experience in online learning. The students in the study group have observed that the course of the schedule had been framed appropriately (62%) and clearly defined (60%) in e-learning platform compared to conventional methods (26%&29% respectively). 52% E-learning students agreed that Virtual lectures should be taken as complementary to the traditional teaching methods while only 41% offline learners agreed the same. According to 47% E-learners and 40% offline learners, Blackboard teaching should be used for the entire course rather than complementary.

Conclusion: According to this study, there was mixed response regarding advantages and disadvantage of virtual vs traditional learning. In our study, approximately half of virtual learners and less than half of traditional learners agreed that blackboard teaching should be used for the entire course rather than complementary. While approximately half of students agreed that virtual lectures should be taken as complementary to the traditional teaching methods

Keywords: Virtual, traditional learning, courses, blackboard teaching.

Introduction

The use of a wide range of technologies such as the internet, email, chat, new groups and texts, audio and video conferencing transmitted across electronic networks to transfer education is referred as online learning. It enables students to

study at their own speed and at their own convenience. It usually necessitates meticulous planning and a significant investment of time and money [1]. Online distance learning enabled educators/tutors to overcome some of the limitations of face-to-face teaching by allowing easier communication and interaction between tutors and students. Besides the ability to provide immediate educational support and feedback gives, online learning has many logistical, instructional and financial advantages over face-to-face teaching [2].

The outbreak of the COVID-19 pandemic led to the closure of conventional way of academic activities which made a way to the e-learning platform as an alternate method of learning across the world. In view of the ongoing pandemic, many theories towards e-learning application have been framed. E-learning is considered as a modern and flexible mode of education and some studies have shown it to be a better alternative even though it was continuously used as a part of distance learning courses since more than a decade.

Many educators may find online learning a useful tool to scaffold learning, through providing a common set of learning resources and experiences as well as through enabling group discussion without the need for teacher and learners to be physically present or working at the same time. Various novel online venues provide useful learning spaces for students and tutors who might find it difficult to meet together in real time [3]. However, researches claim that used technologies are only vehicles that deliver instructions, and do not themselves improve student achievement, they suggest that the used instructional strategies and content influence student learning more than the type of technology used to deliver instruction [4].

Despite the effectiveness of online learning, some researches reveal that it couldn't replace the traditional face-to-face learning particularly for the affective domain (such as: face-to-face personal relationship; affection, imitation work), as it provides students and educators with real and substantive contact. Also, there is little guidance on how to integrate online learning into the curriculum. Unfortunately, the use of technology presents challenges to both learners and facilitators [5].

Access to e-learning, sudden interchange from traditional to online teaching for regular courses, social and psychological wellbeing including student and pandemic specific demographic variables have been found to have a major influence on the effectiveness of online teaching and learning process [6-8]. Thereby, we did a web-based study among second year medical undergraduate students following integrated curriculum to assess their perceptions towards effectiveness of the E-learning platform in comparison with traditional methods of learning.

Methodology:

A cross-sectional design was conducted under the Department of Physiology, NSMCH, Bihta, Patna, Bihar targeting first and second year medical undergraduate students who utilized e-learning module during the Covid-19 pandemic closure time. The same set of students were taught earlier using traditional methods. An online written consent was taken from each participant through the invitation to participate in the study. Data was collected in the period for three months by using a structured online questionnaire on Google forms. The questionnaire was available in English language. Experts assessed the face and content validity of the data collection sheet. The data was collected andanalyzed using SPSS version 14.

Results:

Out of 200 participants, 39.5% were males, and 60.5% were females. 47.5% belonged to second year and 52.5% were third year students. Mean age of the

students was 20.16 ± 1.46. Only 34.5% students had previous experience in online learning.

Table 1: Distribution of sociodemographic characteristics (n=200)

Characteristics	Number (%)
Age	
17-21	107 (53.5%)
21-23	93 (46.5%)
Mean±SD	**(20.16±1.46)**
Gender	
Male	79(39.5%)
Female	121(60.5%)
Medical year	
2nd	95(47.5%)
3rd	105 (52.5%)
Previous experience in online learning	
Yes	69(34.5%)
No	131(65.5%)

The students in the study group have observed that the course of the schedule had been frame dappropriately (62%) and clearly defined (60%) ine-learning platform compared to conventional methods (26 % & 29 % respectively). There were complaints by majority of the students (60%) with over crowding in the learning sessions by the conventional methods which significantly affected their learning process. The majority of the students (52%) gave positive response using e-learning towards course outline across the other courses in comparison to conventional methods (23%).

Table2: Schedule of the Course and course objectives

Q. No.	Questionnaire	Module	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	P-Value
1	The Course schedule has been framed appropriately	Online	35	27	16	11	11	0.000
		Offline	11	15	18	21	35	
2	The course outline is appropriate across the other courses	Online	27	25	24	9	15	0.008
		Offline	12	11	30	11	36	
3	The course schedule is Clearly defined	Online	39	21	19	8	13	0.003
		Offline	14	15	27	11	33	
4	The course schedule is congested	Online	13	11	23	16	37	0.002
		Offline	29	31	10	12	18	
5	I am able to follow the schedule on Blackboard	Online	37	14	16	19	14	0.004
		Offline	17	20	12	13	38	

52% E-learning students agreed that Virtual lectures should be taken as complementary to the traditional teaching methods while only 41% offline learners agreed the same. According to 47% E-learners and 40% offline learners, Blackboard teaching should be used for the entire course rather than complementary.

Table3: Teaching Methods

Questionnaire	Module	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	P-Value
Blackboard teaching is appropriate for my leanings kills	Online	30	19	21	17	13	0.495
	Offline	26	26	19	7	22	
Virtual lectures are excellent teaching resource compared to traditional teaching method	Online	35	9	26	10	20	0.408
	Offline	31	17	19	14	19	
Virtual lectures should be taken as complementary to the traditional teaching methods	Online	34	18	19	12	17	0.689
	Offline	29	12	25	13	21	
Blackboard teaching should be used for the entire course rather than complementary	Online	30	17	33	8	12	0.158
	Offline	27	13	15	20	25	
All the course objectives were followed in the teaching methods using blackboard	Online	30	23	20	14	13	0.014
	Offline	14	15	14	19	38	

Discussion:

Because of raising of introducing online learning in all medical schools, this cross-sectional descriptive study was conducted to examine the perceived strengths and weaknesses of online learning among medical students during COVID-19 pandemic. The findings provide evidence for better understanding and improvement of online learning. Our study showed that over 65.5% of the respondents hadn't experience of any form of online learning prior to COVID–19 pandemic. This can explain why technical difficulties were selected as the first major disadvantage of online learning in this study. This finding is different from that of Alsoufi et al [9] who reported that the majority of his study participants (66.5%) were very good or proficient in using electronic devices.

Regarding students' perception of online learning as compared with traditional learning, our study found the face-to-face learning was superior than online learning as perceived by medical students regarding improving the clinical skills and social competence and this is congruent with the finding of Alsoufi et al [9] whose

participants believed that it is difficult to rely on online learning only due to the numerous challenges faced by learners and teachers. Regarding knowledge acquisition, our study revealed that there was a statistically significant difference between online and face-to-face learning with respect to knowledge acquisition.

Studies conducted by Fordis et al [10] and Yeung et al [11] found that both interventions (face-to-face small group vs virtual small group) produced similar results. In contrast to the previous result, studies conducted by Raupach et al [12] and Subramanian et al [13] reported that online learning modality demonstrated marked improvement in student learning compared to traditional learning modality. This difference could be explained by the previously mentioned low level of technology use and preparedness among our medical students.

In our study, students expressed that the major advantage in conventional methods were due to peer interaction, student-faculty interaction and active participation of faculty with feedback for improvement. Similar findings were observed in a study done in Saudi Arabian university and Sudan [14, 15]. One of the major driving forces for accomplishment of objectives and utmost satisfaction of participants of online classes is interactivity and collaborative learning [16,17].

Conclusion:

According to this study, there was mixed response regarding advantages and disadvantage of virtual vs traditional learning. In our study, approximately half of virtual learners and less than half of traditional learners agreed that blackboard teaching should be used for the entire course rather than complementary. While approximately half of students agreed that virtual lectures should be taken as complementary to the traditional teaching methods. Majority of students found traditional learning is superior to online learning in improving clinical skills and social competence. For successful implementation of online learning, well-structured strategy and a more innovative approaches to overcome perceived disadvantages should be considered.

References:

1. Siregar B, Mansyur A, Siregar N. Development of digital book in enhancing students' higher-order thinking skill. Journal of Physics Conference Series, 2021;1819: 1-8.
2. Alnabelsi T, Al-Hussaini A, Owens D. Comparison of traditional face-to-face teaching with synchronous e-learning in otolaryngology emergencies teaching to medical undergraduates: a randomised controlled trial. European Archives of Oto-Rhino Laryngology, 2015; 272(3):759-763.
3. Doherty I, McKimm J. E-learning in clinical teaching. British Journal of Hospital Medicine, 2010;71(1):44- 47.
4. Beynon, M. Computing technology for learning – in need of a radical new conception. Educational Technology & Society, 2007;10(1): 94–106.
5. Jang H, Kim K. Use of online clinical videos for clinical skills training for medical students: benefits and challenges. BMC Medical Education, 2014;14(1):1-6.
6. Abbasi, S., Ayoob, T., Malik, A., Memon, S.I., Perceptions of students regarding E-learning during Covid-19 at a private medical college. Pakistan J. Med. Sci. 2020;36 (COVID19-S4), 57–61.
7. Almaghaslah, D., Ghazwani, M., Alsayari, A., Khaled, A. Pharmacy students' perceptions towards online learning in a Saudi Pharmacy School. Saudi Pharm. J. 2018; 26 (5), 617–21.
8. Alqurshi, A. Investigating the impact of COVID-19 lockdown on pharmaceutical education in Saudi Arabia–A call for a remote teaching contingency strategy. Saudi Pharm. J. 2020; 28 (9): 1075–83.

9. Alsoufi A, Alsuyihili A, Msherghi A et al. Impact of the COVID-19 pandemic on medical education: Medical students' knowledge, attitudes, and practices regarding electronic learning. PLoS ONE, 2020;15(11):0242905.
10. Fordis M, King J, Ballantyne C et al. Comparison of the instructional efficacy of internet-based CME with live interactive CME workshops: A randomized controlled trial. JAMA., 2005;294:1043-51.
11. Yeung J, Fung K, Wilson T. Prospective evaluation of a web-based three-dimensional cranial nerve simulation. J Otolaryngol Head Neck, Surg., 2012;41:426-36.
12. Raupach T, Muenscher C, Anders S et al. Web-based collaborative training of clinical reasoning: A randomized trial. Med Teach., 2009;31: 431-7.
13. Subramanian A, Timberlake M, Mittakanti H et al. Novel educational approach for medical students: Improved retention rates using interactive medical software compared with traditional lecture-based format. J Surg Educ., 2012;69:253-6
14. Sawarkar G, Sawarkar P, Kuchewar V. Ayurveda students' perception toward online learning during the COVID-19 pandemic. J Edu Health Promot 2020; 9:342.
15. Gismalla MD, Mohamed MS, Ibrahim OSO, Elhassan MMA and Mohamed MN. Medical students' perception towards E-learning during COVID 19 pandemic in a high burden developing country, BMC Medical Education, 2021;21:377.
16. Johnson, R. D., Hornik, S., & Salas, E. An empirical examination of factors contributing to the creation of successful e-learning environments. International Journal of Human-Computer Studies; 2008; 66(5), 356–369.
17. Mahgoob, N., & Saber Ali, D. M. Acute Appendicitis Due to Missed Intrauterine Contraceptive Device/A Case Report and Literature Reviews. Journal of Medical Research and Health Sciences, 2022;5(8);2177–2181.