Research Article

E- LEARNING AND E-ASSESSMENT AS THE TEACHING PLATFORM FOR 1ST PROFESSIONAL MBBS STUDENTS IN A TERTIARY MEDICAL COLLEGE OF EASTERN INDIA IN THE COVID ERA - SCOPE AND CHALLENGES

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Article History:Received:11 January 2021; Accepted: 27 February 2021; Published online: 5April 2021

Abstract:

Background: In the wake of the COVID-19 pandemic, there has been an urgent need in educational institutions around the world, to change their teaching platform so as to ensure continuance of teaching – learning process. Previously, although e-learning platform was known but, presently, e- learning and e – assessment have emerged as the most promising solution.

Aim: The present study has been designed to explore the scope and challenges of e- learning and e- assessment from the 1st Professional MBBS students of Eastern India.

Settings and Design: Descriptive type of cross sectional study.

Methods and Material: 1st Professional MBBS Students

Statistical analysis used: Data were collected via Google forms in online mode. Software (SPSS 22.0 trial version) was used for data analysis.

Results: Out of 250 students, 232 students responded to the present study. Different tools were used to conduct online classes and assessment namely, Microsoft Team, You Tube, Google classroom. The results were tabulated and analyzed. There were some factors that supported e-learning like time flexibility (58.6%), location flexibility (45.3%) and suitability to take and submit tests (55.4%), while some factors went against e – learning. 62.2% and 48.7% students agreed that the most effective tool was You tube and best form of e-assessment was Google classroom respectively.78% students disagreed that live lectures over internet were as effective as physical lectures and 84.5% students supported that e-learning was not suitable for practical classes. 64.75% students preferred combined classes.

Conclusion: We concluded a combination of physical and online platform still serves as the best teaching platform for Medical students.

Key words: e - learning, feedback, challenges

Introduction

With the COVID-19 pandemic, an urgent need has arisen to modify the platform of teaching required to educate students and ensure continuance of the teaching – learning process. The present need is now for online and offsite learning[1]. A study held in Jakarta, Indonesia, revealed some supportive and inhibitory factors for offsite learning [2].

Previously, the application of e-learning platform was limited because medical educators usually relied on conventional face-to-face or at most, a combination of face to face and online instruction[3]. But, presently, with social distancing[4] still being of utmost importance, next to mass vaccination, e- learning and e- assessment is now the most promising solution.

Specific objectives

A) To understand the accessibility of e- learning as the teaching platform for 1st professional MBBS students.

B) To elicit perceived usefulness of e-learning to them.

C) To ascertain their perceived ease of use of different learning tools.

D) To ascertain the attitude of such students toward using the different forms of e-learning to which they are exposed.

E) To determine their intention to use e-learning in future.

Materials and Methods:

Study Type and Study Design: Descriptive study with cross-sectional design.

Study setting: The study was conducted among the students of 1st Professional MBBS students of Medical College, Kolkata, West Bengal, with annual student intake capacity of 250 for a period of 3 months.

Study population: Students of 1st Professional MBBS of Medical College, Bengal who were admitted in 2019, fulfilling the inclusion criteria, were considered as study population.

Inclusion criteria:-

1. 1st Professional MBBS student studying in Medical College, Bengal;
2. Students with at least 75% attendance in conventional and online classes taken together;
3. Students, who were willing to participate in this study and had given their informed consent.

Exclusion criteria:

1. Students with less than 75% attendance in conventional and online classes taken together;
2. Students, who were unwilling to participate in this study.

Sample size: In absence of any previous study to verify the same, the prevalence level of perceived benefits of e-learning / online teaching was presumed as 50%, to ensure maximum sample size. The complement of prevalence was also taken as 50%. Assuming the precision level "L" = 10% while $Z\alpha = 1.96$ at 95% C.I., using formula of $[Z\alpha^2 \times P \times (1-P)] / L^2$, the sample size was calculated as 96 (approximately = 100). Considering Finite Population of Medical Students in 1st phase [1st Professional MBBS] as 250 approximately in Medical College, Bengal, the required minimum sample size was 68 after Finite Population Correction (FPC). Assuming 10% non-response rate the final minimum sample size will be (77 + 7.7) = 85. However, the study was conducted among all the available and consenting Medical Students of the 1st phase [1st Professional MBBS], which expectedly would be more than the required minimum sample size.

Study tool, Study technique and Methods of data collection: the study was undertaken with an identical semi-structured, pre-designed, pre-tested and validated 32-item questionnaire (Cronbach's alpha>0.7) covering different levels of e-learning. Pretesting was done in Bankura Sammilani Medical College, Bankura covering similarly circumstanced students and the internal consistency was computed using appropriate statistical technique. This self-administered questionnaire, was cast as Google Form and sent online to students who, if willing to participate in this study, filled up the same and submitted in online mode too.

Statistical plan of data analysis: Data was collected via Google forms in online mode maintaining strict anonymity. Thereafter the collected data was codified and entered in MS Excel Spread Sheet. Appropriate statistical tests of significance were applied wherever required. p value of <0.05 was considered for drawing statistical inference regarding relationship among variables. Software package (SPSS 22.0 trial version) was used for data analysis.

Ethics: the study was conducted after obtaining clearance from the I.E.C of Medical College, Bengal and with informed consent taken from each of the participants.

Results: The study was conducted among the students of 1st Professional MBBS students of Medical College, Kolkata, West Bengal, Batch 2019-2020, with annual student intake capacity of 250. Out of 250 students, 232 students responded to the present study. Also, according to departmental records, approximately similar number of students participated in online assessments. A possible reason of their constant absence from any form of online interaction could be lack of internet facilities/ accessibility in their present area of residence.Different tools were used to conduct online classes and assessment namely, Microsoft Team, You Tube, Whatsapp, email, Google classroom. The results were tabulated and analyzed.

Table I showed that other than 28.45% students, who resided in rural areas, most of the students resided in urban and semi-urban areas. 99.1% students had internet connection. Some factors supported e-learning like time flexibility (58.6%), location flexibility (45.3%), and suitability to take and submit tests (55.4%). However, some factors were

against e- learning, for example, interaction was less in e- learning (49.3%), extra burden posed by cost of e-learning (69.3%).

Table II showed that 72.4% students utilised You tube, 71.6% used Whatsapp and 77.35% used Microsoft teams. The differences were not statistically significant (P>0.05). Most effective tool as per students' feedback was You tube (62.2%). It was also seen that students agreed that posting messages (68.5%), downloading files (51.3%), attaching file and sending e-mail (68.9%) were very easy tasks for them, though the differences were not statistically significant (P>0.05).

Table III revealed that best form of e-assessment was Google classroom (48.7%) and easiest form was Whatsapp (51.3%). 64.75% students preferred combined classes, though the differences were not statistically significant (P>0.05).

Discussion: Due to the coronavirus pandemic many countries had to close their medical schools and universities to curb the spread of infection. To continue medical education smoothly, we transitioned to e-learning and began utilizing it as the sole teaching and assessment platform since the onset of lockdown. The primary requisite of online classes is the availability of internet and an uninterrupted internet connection. In present study we learnt that few students (Table I) were staying at remote places where internet facilities were unavailable as also those whose online classes were inhibited by interruptions in internet connectivity.

In their study, Raymond et al[6] stated that e-learning is a type of teaching-learning platform based on internet connectivity and used to overcome barriers associated with time or geographical location of the teacher or learner. They observed that 86% students agreed that e-learning was more effective than traditional class room learning because students could easily access course materials in the form of e- book and website links. Leisi Peis et al[7] also observed in their study that online classes increased more knowledge and skill in comparison to offline classes. However, in the present study, majority of the students(78%) disagreed with the view that live lectures over the internet were more effective than the conventional classroom teaching(Table III). The present study supported the findings of Vijendra Devisingh Chauhan et al[8]. They observed that 85% students felt that conventional lecture followed by e-learning would greatly benefit them and would help them learn the subject better. In present study, 64.7% students gave positive feedback(Table III) regarding blended learning. Additionally, they showed preference to hands on training for practical classes(84.5% students Table III). Also, 68.6% students in the present study supported the view that in the current COVID scenario e-learning is the best learning platform and should be encouraged. A P Choules[9] stated in his article that e-learning is a step toward self- direction and one can learn in his or her own time but in present study we have obtained a mixed result. Only 47.4% students (Table III) agreed that they could learn in their own time and pace.

Many advantages (Table II) of e-learning were found. As for example, location flexibility – 58.6% students agreed that they could attend the online classes from any geographic location. They also supported the view (55.4%) that this e-learning platform is suitable to take tests and submit assignments. Daroedono et al[2] observed similar result in their study. Additionally, our findings (Table II) revealed that students agreed that online activities like posting message (68.5% students), downloading files (51.3%), attaching file, sending e-mail (68.9% students) and chatting (71.5% students) were easy tasks for them.

Romeu Fontanillas et al[10]stated in their study a high level of satisfaction with the e-assessment activities for improvement of the learning process by the students. In our study, regarding e-assessment, as per students feedback (Table III) we found most effective form of e-assessment was Google classroom (48.7%) and easiest way of e-assessment to handle by students was Whatsapp(51.3%). Students' opined that frequent e-assessment helped them to learn the subject better. They also wanted teacher's feedback to improve their academic excellence.

The study conducted by Mei Chan Chong et al[11] on 300 registered nurses revealed that most nurses showed positive attitude towards e-learning although most of them did not have e- learning experience. In comparison, this study showed 38.3% students welcoming the idea of e-learning as also 34.1% students who remained undecided. 50.5% students participated in e- learning simply for eligibility to appear in examinations. The study of Ilser Turkyilmaz et al[12] revealed that students perceived YouTube among the top three applications to have the greatest impact on their education. In the present study also it was found out that You tube(72.4% students, Table II) was the most effective form of e- learning tool.

Conclusion: Presently, there are lots of challenges of implementing e- learning as the teaching platform, mainly because it is still in a formative stage. Although there are certain domains where e-learning cannot replace face to face teaching, in terms of accessibility and flexibility, it is the best platform to be used and explored by us. This is

aided by the ease of handling of the online platform by the students. Thus, a combination of physical and online platform still serves as the best platform for e- learning and e- assessment.

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Tables

Table I. Supportive and inhibitory factors of e-learning:

Percentage of students having internet facilities	99.1%	0.9%
Time flexibility	Agree58.6%	Disagree 12.1 %
Location flexibility	Agree 45.3%	Disagree 38.4%
Suitable to take tests and submit assignments	Agree 55.4 %	Disagree 17.1 %
Cost is an additional financial burden	Agree 69.3%	Disagree 30.7%
Time was not sufficient for online interaction	Agree48.8%	Disagree 20.2 %

Area of residence	Urban 35.8% Semi-urban 35.8%	Rural 28.45%

Table II. Ease of students to handle the different tools of e- learning:

Tools of e-learning used by the students	Whatsapp 71.6 %	YouTube 72.4%	Microsoft Team 77.35 %
Most effective tools as per students feedback	Whatsapp 16. 4%	YouTube 62.2%	Microsoft Team 17.7 %
Level of comfort – - Posting message	Agree 68.5%	Disagree 8.2%	Neutral 23.3%
- Downloading is very easy	Agree 51.3%	Disagree 23.5%	Neutral 25%
-Easy to attach file and send e-mail	Agree 68.9	Disagree 11.6 %	Neutral 18.5 %

Table III: E- assessment & Attitude/feedback of students regarding e-learning:

Easiest form of e-assessment to handle by students	Google classroom 39.7%	E-mail 8.6%	Whatsapp 51.3%
Best form of e-assessment faced by students	Google class room 48.7%	E-mail 10.3%	Whats app 39.2%
Preference of different type of classes	Physical classes 31.5%	Online classes 3.8%	Combined classes 64.7%
Live lectures over the internet are as effective as in the classroom	Agree 10.8 %	Disagree 78 %	Neutral 11.2%
Practical classes are not suitable for e- learning	Agree 84.5%	Disagree 6.4%	Neutral 9.1%
Intend to use e- learning in future	Agree 24.1%	Disagree 19.4%	Neutral 37.1%
The reasons considered by the students during selection of the most effective of the available e- learning tools	Learning at own pace and time 47.4%	Not dependant on uninterrupted internet connection 21.6%	Textbooks and study materials could be browsed at the same time14.7%