IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 3 Ser. 2 (March. 2019), PP 84-88
www.iosrjournals.org

An Interventional Study of Effect of E-Learning as Teaching Learning Method among Medical Students

Dr.Paras Nath Mahto[1], Dr.Neelam Choudhary[2*]
[1] *Associate Professor, Department of Physiology, M.G.M Medical College and Hospital, Jamshedpur.*
[2*] *Professor, Department of Physiology, M.G.M Medical College and Hospital, Jamshedpur.*
Corresponding Author: Dr.Neelam Choudhary

Abstract
Introduction: *Today's medical educators are facing different challenges than their predecessors in teaching tomorrow's physicians. In the past few decades, changes in health care delivery and advances in medicine have increased demands on academic faculty, resulting in less time for teaching than has previously been the case. Changes in sites of health care delivery, from acute care institutions to community-based settings for chronic care, have required adaptations in educational venues.*
Materials and Methods: *The study will be performed for 1 year in the Department of Physiology, M.G.M Medical College, Jamshedpur. 200 Students aged 18-25 years of either gender who are studying first year MBBS in MGM Medical College, Jamshedpur were included in the study. Non medical students were excluded from the study.*
Results: *A total of 200 students participated in the study. There were 110 female students and 90 male students. Unpaired 't' test was used for analysis of post-test; the results of post-test is given (Table 1) below. The mean mark for E-Learning post-test was 15.8 and lecture was 13.9, which were found to be statistically significant.*
Conclusion: *The study concluded that E-Learning was well accepted by First MBBS students and statistically significant difference in marks was obtained in the post-test. In institution where faculty strength is a limitation, this can be used effectively as an additional tool along with conventional method. It also allows flexibility in student-teacher interactions. In the era of mobile phones, M-Learning is an easy and effective method through which E-Learning can be delivered.*
Key Words: *E learning, medical Education, Flexibility.*

Date of Submission: 20-02-2019 Date of acceptance: 06-03-2019

I. Introduction

Today's medical educators are facing different challenges than their predecessors in teaching tomorrow's physicians. In the past few decades, changes in health care delivery and advances in medicine have increased demands on academic faculty, resulting in less time for teaching than has previously been the case. Changes in sites of health care delivery, from acute care institutions to community-based settings for chronic care, have required adaptations in educational venues.[2]

Finding time to teach "new" fields such as genomics, palliative care, geriatrics, and complementary medicine is difficult when medical school curricula are already challenged to cover conventional materials.[1] Traditional instructor-centered teaching is yielding to a learner-centered model that puts learners in control of their own learning. A recent shift toward competency-based curricula emphasizes the learning outcome, not the process of education.[3]

E-learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance.[4,5] E-learning can be used by medical educators to improve the efficiency and effectiveness of educational interventions in the face of the social, scientific, and pedagogical challenges noted above. It has gained popularity in the past decade; however, its use is highly variable among medical schools and appears to be more common in basic science courses than in clinical clerkships.[6,7]

The students engaged in E-Learning activities will be able to construct their own knowledge through self directed learning. Eventually performance of the students may increase by implementation of E-Learning at various medical colleges in India.

II. Materials And Methods

- **Study design** **:** A interventional study.
- **Study site** **:** M.G.M Medical College, Jamshedpur.

- **Study duration** : The study was performed for 1 year in the Department of Physiology, M.G.M Medical College, Jamshedpur.
- **Sample size** : 200 Students.
- **Instrument** : Feedback, Post-test.

- **Inclusion criteria** : Patients aged 18-25 years of either gender who are studying first year MBBS in MGM Medical College, Jamshedpur.
- **Exclusion criteria** : Non medical students were excluded from the study.

After taking a written consent, the students were divided into two groups of 50 each by convenient sampling method. The platform chosen to deliver E-Learning was using Google groups. A new G-mail ID was created for all the students and two separate Google groups were created as well. Initially, one group was exposed to conventional lecture on a particular topic while other was exposed to E-Learning on the same topic. After a study period of one week, a post-test was conducted on respective topics. Next the process was repeated with the first group exposed to E-Learning on arterial pulse and second group to traditional lecture on jugular venous pulse. The students were crossed over to avoid ethical issues. All interactions with the students on the topics given through E-Learning were done through Google groups. After the post-test student's perception on E-Learning was assessed by a validated questionnaire.

III. Results

A total of 200 students participated in the study. There were 110 female students and 90 male students. Unpaired 't' test was used for analysis of post-test; the results of post-test is given (Table 1) below. The mean mark for E-Learning post-test was 15.8 and lecture was 13.9, which were found to be statistically significant.

The feedback of students on E-Learning assessed by questionnaire was analysed by Chi square test; 72.8% liked E-Learning as an additional tool and 95.2% commented that it should be included in the curriculum; 45% students accessed the facility while in hostel and 42% at home; 88.3% students were using E-Learning for academic and non-academic purpose (Table 2); 64% were accessing internet through mobiles (Figure 1); 33% commented they liked it to obtain complete notes and another 23% because of asynchronous access (Figure 2); 52% commented there was no direct contact with the faculty and 24% about poor access to internet (Figure 3); 35% students commented that E-Learning be included in Physiology, 20% physiology and biochemistry and 17% commented all three subjects should include it in their curriculum (Figure 4).

1	**Participants**	**Females:110, Males: 90**
2	Place of access	Campus: 2.6%, Hostel:45% Home: 42%
3	For what purpose	Academic: 11.6%, Nonacademic: 1.4% Both: 88.3%
4	Do you like e learning as a medium of education	Yes-73% No- 27%
5	Any other suggestions	Videos: 15% More topics: 15% College should be wifi connected: 11.5%

Table 1: Students perception on E-Learning

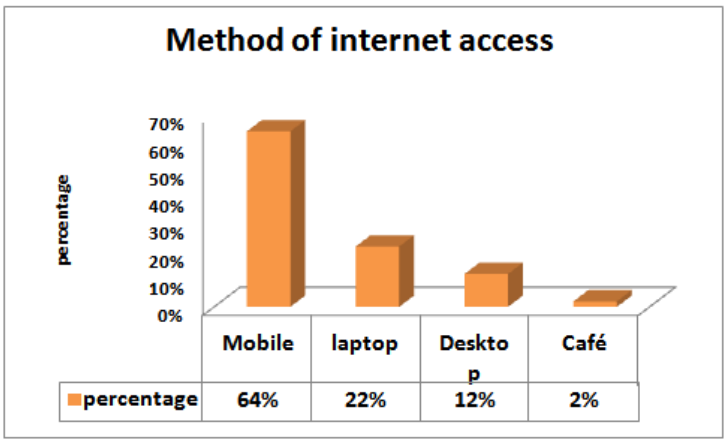

Figure 1: Method of internet access

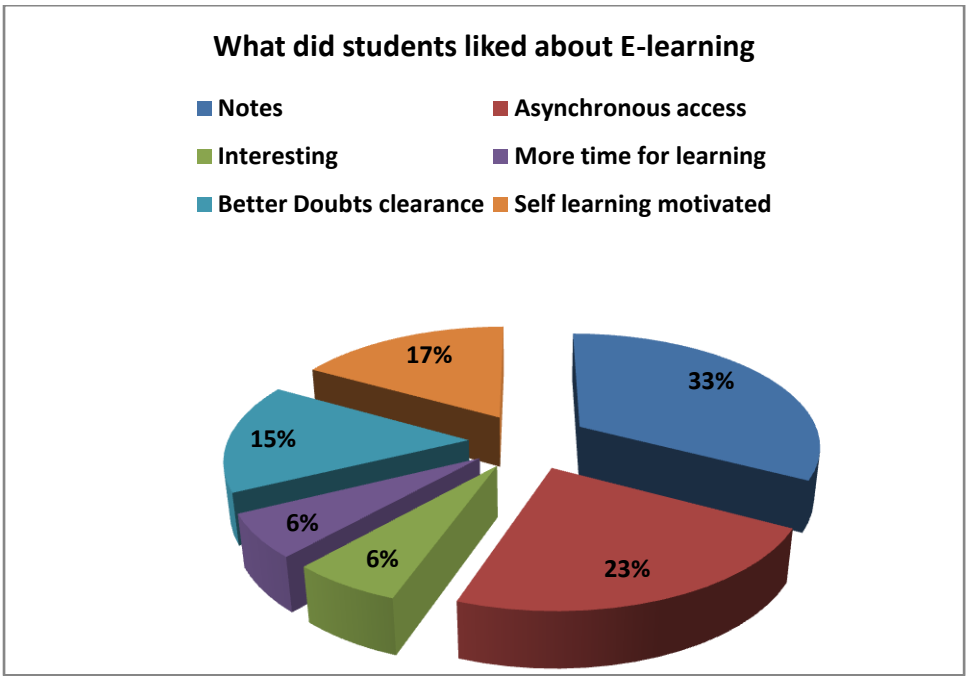

Figure 2: What did students liked about E-learning

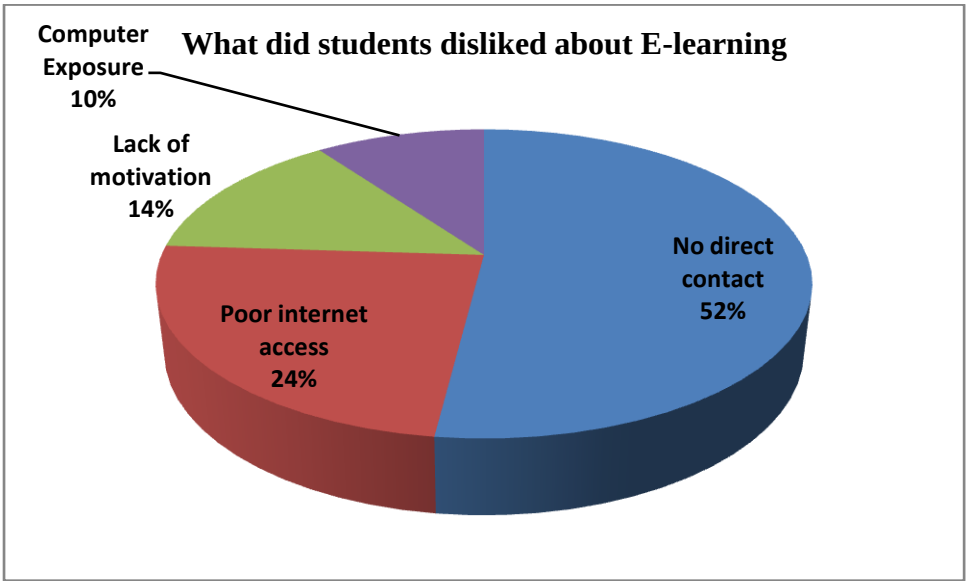

Figure 3: What did students disliked about E-learning

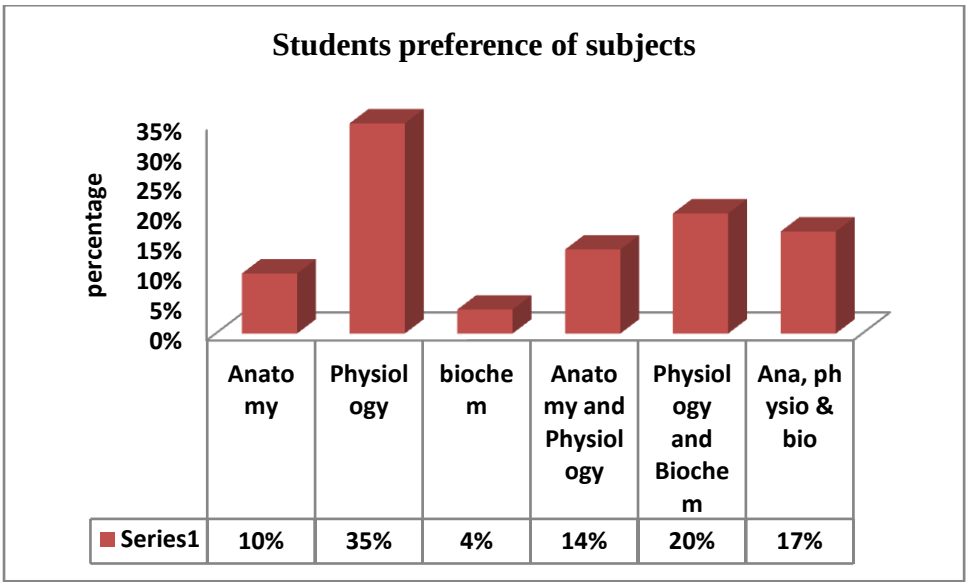

Figure 4: Students preference of subjects

IV. Discussion

The need for increasing the number of health care professionals in developing countries and the difficulties in accomplishing this with limited faculty and institutional resources has been well-documented. Over the next several years, the question is not whether E-Learning will be a component of health education but rather what is E-Learning best used for within institutions, when and how to implement E-Learning successfully and how we will ensure a beneficial effect on our learners and faculty.

It is expected that if India and developing countries proceed as joint venture and work mutually on the issue of E-Learning, it will be beneficial for the development of educational sector. Through E-Learning lot of opportunities can be captured and speedy developments will be possible. With all the challenges that India is facing in education and training, E-Learning provides many answers and needs to be addressed seriously by the planners, developers and the private industry players. In the knowledge economy, the chief competitive advantage of nations is not their physical assets, be it land, natural resources or even oil, but quality and skill of their people. The revolution of E-Learning has begun and is at an infant stage and needs to be nurtured further. We have to work hard to develop robust and flexible modules to explore the opportunities to greater heights.

While E-Learning is defined as learning supported by digital electronic tools and media, M-Learning is defined as E-Learning using mobile devices and wireless transmission. In the past several years, mobile learning made rapid inroads into the provision of medical education. There are significant advantages associated with mobile learning. These include high access, low cost, more situated and contextual learning, convenience for the learner, continuous communication and interaction between learner and tutor and between learner and other learners, and the ability to self-assess them while learning. Like any other form of medical pedagogy, mobile learning has its downsides. Disadvantages of mobile learning include: inadequate technology, a risk of distraction from learning by using a device that can be used for multiple purposes and the potential for breakdown in barriers between personal usage of the mobile device and professional or educational use. Despite these caveats, there is no question but that mobile learning offers much potential.

V. Conclusion

The study concluded that E-Learning was well accepted by First MBBS students and statistically significant difference in marks was obtained in the post-test. In institution where faculty strength is a limitation, this can be used effectively as an additional tool along with conventional method. It also allows flexibility in student-teacher interactions. In the era of mobile phones, M-Learning is an easy and effective method through which E-Learning can be delivered.

References

[1]. Verdú E, Regueras LM, Gal E, de Castro JP, Verdú MJ, Kohen-Vacs D. Integration of an intelligent tutoring system in a course of computer network design. Educ Technol Research Dev 2017;65(3):653–77.
[2]. Alonso V, Arranz O. Big Data & eLearning: A Binomial to the Future of the Knowledge Society. Int J Interact Multimed Artif Intelligence 2016;3(6):29–33.
[3]. Dolmans DHJM, Schmidt HG. What Do We Know About Cognitive and Motivational Effects of Small Group Tutorials in Problem-Based Learning?. Adv Health Sci Educ 2006;11(4):321–36.

[4]. Visschers-Pleijers AJSF, Dolmans DHJM, Wolfhagen HAP, van der Vleuten CPM. Exploration of a method to analyze group interactions in problem-based learning. Med Teach 2004;26(5):471–8.
[5]. Dochy F, Segers M, van den Bossche P, Gijbels D. Effects of problem-based learning: a meta-analysis. Learn Instruct 2003;13(5):533–68.
[6]. Colliver JA. Effectiveness of problem-based learning curricula: research and theory. Acad Med 2000;75(3):259–66.
[7]. Albanese M. Problem-based learning: why curricula are likely to show little effect on knowledge and clinical skills. Med Educ 2000;34(9):729–38.
[8]. Norman G, Schmidt H. Effectiveness of Problem-Based Learning Curricula: Theory, Practice and Paper Darts. Med Educ 2000;3:721–8.
[9]. Hwang G-J, Wu P-H, Chen C-C. An online game approach for improving students' learning performance in web-based problem-solving activities. Comput Educ 2012;59(4):1246–56.
[10]. Verdú E, Regueras LM, Verdú MJ, Leal JP, de Castro JP, Queirós R. A distributed system for learning programming on-line. Comput Educ 2012;58(1):1–10.
[11]. Anderson JR. On Cooperative and Competitive Learning in the Management Classroom. Mt Plains J Bus Econ 2006;7:1–10.

Dr.Neelam Choudhary. "An Interventional Study of Effect of E-Learning as Teaching Learning Method among Medical Students." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 3, 2019, pp 84-88.