



## E-Learning in Medical Education- A Cross-Sectional Study in a Medical College

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### Abstract

**Introduction:** Medical education is acquiring knowledge and skills for ensuring the quality of health protection. Qualitative and quantitative studies of collaborative learning in medicine have shown higher levels of learner satisfaction, self awareness, improvement in knowledge and understanding of concepts. E-learning when combined effectively with quality professional teaching may achieve the goal of complete education.

**Methodology:** A Prospective, cross-sectional, structured questionnaire based study was conducted among 300 medical students in a medical college.

**Result:** A questionnaire study was conducted among the students of medical sciences. 76% students had access to internet. 70% use internet for e-learning. 68% find e-learning helpful. 56% watch educational videos, 42% refer to online books, 74 % are Wikipedia users. 62 % find online teaching session interesting. 68% find e-learning better than didactic teaching. 66% preferred e-learning in combination with classroom lectures where as 20 % preferred classroom lectures and 14 % preferred e-learning alone. 78% want e-learning to be applied in education.

**Conclusion:** E-learning and technology are creating the groundwork for a revolution in education. E-learning therefore should be incorporated and explored further in the medical education system of India.

**Keywords:** e- learning , technology, medical education ,online teaching ,computers.

### Introduction

Education of medical aspirants along with the latest technologies is essential, as they are the future health care providers. Keeping such aspirants up to date and informed of the current media of education is important for their overall development. Medical education is acquiring

knowledge and skills for ensuring the quality of health protection. Qualitative and quantitative studies of collaborative learning in medicine have shown higher levels of learner satisfaction, self awareness, improvement in knowledge and understanding of concepts.

E-learning is defined as 'Learning that is delivered, enabled or mediated using electronic technology for explicit purpose of training in organizations'.<sup>1</sup> WHO and UN have acknowledged e-learning as useful instructional tool for education in the health sector, especially in developing countries, with limited sources .

Electronic learning technologies include power point presentations, video demonstrations, video recording of class rooms, web conferencing, use of internet for education, wikipedia, e-books and online study materials. Blended learning, 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.<sup>2</sup> The three primary characteristics of e-learning are the nature of the learning experience, synchronicity of participation, and presence or absence of face-to-face instruction<sup>[3]</sup>. Depending upon the nature, the learning. 3 Evidence suggests that e-learning is more efficient because learners gain knowledge, skills, and attitudes faster than through traditional instructor-led methods. This efficiency is likely to translate into improved motivation and performance<sup>3</sup> E-learners have demonstrated increased retention rates and better utilization of content, resulting in better achievement of knowledge, skills, and attitudes.<sup>4</sup>

### Method

A Prospective, cross-sectional, Questionnaire based study was conducted among 300 students of medical college at Telangana in 2016. They were given questionnaires, after explaining the purpose of the study and taking informed consent. the questionnaires had a panel of same 11 questions for all the students which are as follows.

- 1) Do you have access to internet – yes/ no
- 2) Do you use internet for education- yes/no
- 3) Do you find e-learning helpful- yes/no
- 4) Do you refer to online educational videos - Yes/N0

- 5) Do you refer online books, study material, wikipedia for education -Yes/N0
- 6) Do you find e-learning better than didactic teaching –Yes/no
- 7) Do you find power point presentations better than chalk and board method of teaching -Yes/N0
- 8) Do you find online teaching session interesting. -Yes/N0
- 9) Do you find online assessment better than written assessment -Yes/N0
- 10) Which do you prefer: class room lectures / online lectures / e-learning + classroom lectures
- 11) Do you want e-learning to be applied in your college -Yes/N0

### Results

The questionnaires were collected and then evaluated and the following results were concluded

76%	Students had access to internet
70%	Use internet for e-learning.
68%	Find e-learning helpful
56%	Watch educational animation videos
42%	Refer online books
74%	Wikipedia users
62%	Find online teaching session interesting.
68%	Find e-learning better than didactic teaching
90%	Find power point presentation better than chalk and board method of teaching
48%	Find online assessment better than written assessment
66%	Preferred e-learning in combination with classroom lectures
20%	Preferred classroom lectures
14%	Preferred online lectures alone
84%	Want e-learning to be applied in education

## Discussions

The questionnaire based study was conducted to acknowledge the student perception on e-learning in medical education. accessibility to internet was questioned and it was found that 76% students has internet access. The success of e-learning also depends upon the internet connectivity<sup>5</sup>. 70 % of which used internet for e-learning and 68% find e-learning helpful as it makes the subject more comprehensible and increases the understandability. 56% of students watch educational animational videos to understand the complex structures and mechanisms, audiovisual aids are also able to provide a three dimensional view and have an exceptional impact on the learners mind. 42% students refer online books as they are feasible, available and free e-books reduce the purchasing burden. 74 % students are ardent Wikipedia users, as it enables them a quick glance of the topic in discussion and has the fastest display of meanings of complex medical terminologies. 62% students find online teaching sessions interesting, as it gives them discretion to pause and play at their pace of understanding and retaining. Learners have control over the content, learning sequence, pace of learning, time, and, often, media, which allows them to tailor their experience to meet personal learning objectives.<sup>6</sup>. 68% find e-learning better than the didactic teaching, as they often lose their interest midway of the session. The less tech-savvy generation of teachers consider imposition of e-learning as an additional burden because they think it is less worthy, have time-constraints in developing the content, and have lack of confidence in meeting the technical demands<sup>7</sup>. 90% find power presentation superior to the age old method of chalk and board teaching, according to them power points retain their interests for longer duration, each slide has different impact, bold and bright pictorial presentations are more retainable and reproducible. 66% of students preferred a combination of e-learning with classroom lectures, 20 % preferred classroom lectures, while only 14% preferred online alone modality. Majority of

84% wanted e-learning to be applied in medical education system of India.

With increasing advances in educational technology, novice students prefer easily understandable, approachable, accessible methods of learning. E-learning will be able to improve their knowledge, thinking capacity, widen their horizon of learning experiences and eventually improve their overall performance. E-learning research in general covers a wide range of issues and perspectives including the context for e-learning, theoretical perspectives (both educational and cultural), policy and politics and technical and implementation design (Andrews & Haythornthwaite 2007). In developing countries like India, Information and Communication Technologies can be used to improve the quality of medical education and health care delivery system.<sup>8</sup> The use of e-learning can help them achieve the goal of continuous professional development, considering the vastness of syllabus, paucity of time, and already overburdened schedules.<sup>9</sup>

## Conclusion

The medical education content is vast, diverse and continuously updating, together with scarcity of experts, makes e-learning an excellent proposition as newer method of education. E-learning and technology are creating the groundwork for a revolution in education. Centers of excellence in e-learning can provide national support for the design, development, implementation, evaluation, collaboration, and sharing of digital e-learning materials.<sup>10</sup> E-learning therefore should be incorporated and explored further in the medical education system of India, to ensure the future doctors are equipped globally.

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