Editorial

eLearning in Medical Education

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Technology has progressed in unimaginable fast pace in the last decades. Newer inventions have changed our life and lifestyle in many ways. Education system is not any exception. Rather it is evolving tremendously everyday with the advent of new technologies. One of such concept is eLearning, also known as electronic learning or web-based training. eLearning is defined as 'an educational method that facilitates learning by the application of information technology and communication providing an opportunity for learners to have access to all the required education programmes'.[1] In simpler words, eLearning is the delivery of educational content through digital devices like computers, tablets and smartphones. In contrast to traditional learning methods, eLearning lets the learners participate in an organized learning experience from anywhere anytime. As a result it enhances the total learning. The use of internet technologies offer the learners control over content, learning sequence, pace of learning, time, and often media, allowing them to tailor their experiences to meet their personal learning objectives.[2]

Medical education is a teacher-centred model which involves several teaching approaches to learning including face to face lectures in classrooms, bedside teaching, and hands on practice, etc. This particular approach is established for so long that it leads to reluctance to adopt new and emerging practices and technologies. But over the last few decades there has been a shift in medical education practice from traditional forms of teaching to other media which employ online, distance or electronic learning.[3] Like in other sectors of higher education, eLearning has now become part of the mainstream in health education, including medical, dental, public health, nursing, and other allied health professionals. The role of eLearning in achieving the educational goals of health professional education (HPE), especially in developing and under-developed countries has also been recognized by the World Health Organization (WHO). In the WHO publication it has been emphasized that 'eLearning has an under-exploited potential to support health workforce capacity building in different contexts, and can empower health workers to take charge directly of their own competency development, to enable them to play a full role as change agents in addressing the challenges we will face in the 21st century'.[4]

Over the past twenty years and during the recent COVID-19 pandemic, there has been a substantial increase in the use of eLearning.[5] Lockdown during the COVID-19 pandemic resulted in closure of universities, and educators needed to quickly adopt alternate teaching approaches. The COVID-19 pandemic accelerated the adoption of eLearning in medical education also, highlighting its potential to provide continuity during crises. This shift has led to innovations in online learning tools and resources. A survey by Barton et al. across 41 medical schools in the United Kingdom during the COVID lockdown showed that 41.6% of students used information provided by university (PowerPoint lecture slides, personal notes), 29.6% accessed free websites and question banks, and 18.4% accessed paid websites and question banks.[6] Their analyses suggested a strong tendency for students to supplement university materials with online resources.

Innovations in eLearning technologies are creating a revolution in education, allowing adaptive individualized learning, enhancing learners' collaboration with others, and transforming the teachers' role. The integration of eLearning into medical education can bring in implementation of adult learning theory, where

educators will no longer be only distributors of content, but will become more involved as facilitators of learning and assessors of competency.[2] Application of eLearning and e-modules in medical education has been shown to have a positive impact on learning outcomes among all types of learners, across diverse educational settings.[7] eLearning has significantly changed medical education by providing flexible, accessible, and innovative learning opportunities for students. It enhances understanding through multimedia resources and interactive modules while addressing the challenges of traditional education. A number of studies have documented that the acceptance rate of eLearning among medical students range from moderate to good. The popularity of online learning platforms seems to be associated with achieving higher exam scores, ability to self-monitor knowledge gaps, improved knowledge retention from repeat exposure, and to practice exam technique.[8-10] Many students have also indicated that additional online training, further interactive and updated designing of e-courses, and blending of traditional teaching with online methods would be more beneficial.[11,12] The eLearning Technical Working Group of Medical Education Partnership Initiative (MEPI), a collaborative effort to address challenges in medical education and research in Sub-Saharan Africa, highlighted that five core components are essential at both macro and micro levels for successful and sustainable implementation of eLearning. These are institutional support, faculty engagement, student engagement, technical expertise and infrastructure and support systems.[13] Another study concluded that improved educator skills, incentives and reward for the time involved with development and delivery of online content, improved institutional strategies and support and positive attitude amongst all those involved in the development and delivery of online content are essential for successful eLearning.[3]

Still to this day, eLearning is not an alternative to traditional instructor-led training; rather is a complement to it, forming part of a blended-learning strategy.[2] The eLearning process is centred on the role of e-learner. So, effective eLearning strategies should consider potential learning challenges encountered by the e-learner. There are many student led or staff led factors that can influence the success of online learning programme. Some well recognized barriers are 'cultural resistances' amongst staff, extra pressure on already overworked faculty, etc.[3] In a review by Regmi et al. some barriers to eLearning were identified, which are poor motivation and expectation, lack of IT skills among teachers and students, and the perception that eLearning is resource-intensive and not suitable for all disciplines/contents.[5]

The evolution of eLearning in medical education has progressed from basic computer-based training to sophisticated online platforms. This journey has enhanced both accessibility and interactivity in medical training. To facilitate medical education, a large number of repositories or digital libraries have already been established containing high-quality, peer-reviewed, sharable eLearning materials. eLearning interventions in anatomy, physiology, and postgraduate medical training are well known. Common eLearning instructional designs in clinical medicine include 'online and offline computer-based programmes, massive open online courses, virtual reality environments, virtual patients, mobile learning, digital game-based learning and psychomotor skills trainers'.[14]

Now is the high time for educators to reevaluate their traditional roles as there is already an evolving emphasis within medical education on lifelong learning and competency-based education. In this changing paradigm, educators no longer serve as the sole distributors of content, but are becoming facilitators of learning and assessors of competency.[15] eLearning should be integrated into medical curricula through a well-planned process starting with a needs assessment. In undergraduate education, it should complement traditional teaching as part of a blended-learning approach and for postgraduate education, eLearning offers valuable resources for

knowledge updates and supports learners' continuous professional development.

Delta Med Col J. Jul 2022;10(2):36-38
DOI: https://doi.org/10.3329/dmcj.v10i2.81733

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