Editorial

The Role of Digital Learning in Medical Education

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Introduction

The Digital Shift in Medical Education

The Covid-19 pandemic forced medical education centres globally to follow social distancing protocols, making digital learning the standard approach for medical colleges. The transformative power of the Internet and digital technologies furthered this shift towards remote learning. Consequently, today's medical students are experiencing a dramatically different learning environment compared to two decades ago.

Emerging Digital Platforms

Digital education platforms are now widely adopted by medical schools worldwide. These include online and offline digital education, massive open online courses (MOOCs), learning management systems (LMS), mobile digital education (m-learning), serious games and gamification, augmented reality, virtual reality, and virtual patients (VP).[1-4] These digital tools provide several advantages over traditional didactic methods, such as the ability to swiftly update materials with the latest evidence-based information and promote self-directed learning.[5]

E-learning

E-learning has proven to be as effective as conventional teaching methods, allowing students to exert greater control over their learning by providing flexibility in content and pace. Online assessments enable educators to evaluate competencies objectively, offering personalized feedback for continuous improvement.[6] The gradual shift towards e-learning supports the application of adult learning theory, with medical educators evolving into facilitators and assessors of competency[5].

In Asian countries, the transition to digital learning has been inspired by Western theories. Japan has been at the forefront of this movement with initiatives like the e-Japan Initiative and IT New Reform Strategy, promoting e-learning in higher education.[7] 1% of medical schools in Japan are well-equipped with skills laboratories. However, Limited time allocation for simulation-based education and low motivation among instructors, due to inadequate lecturers and an overload of responsibilities, have contributed to the under-development of digital learning in medical education in Japan.[8] Malaysia has followed with the integration of Learning Management Systems (LMS) as part of its Higher Education Blueprint.[9]

The Indian health professions education system faces several key challenges: a shortage of teachers, reliance on outdated lecture-based methods, limited faculty training, and difficulty in providing continuing education to professionals in remote areas.[10,11] Although digital education holds promise—by making learning more accessible, interactive, and location-independent—it remains underused.[12] Aside from the temporary shift during COVID-19, there's little experience or evidence on what digital approaches work best in the Indian context.[13]

Some institutions, however, have begun exploring digital tools. St. John's Hospital, Bangalore, and Christian Medical College, Vellore use the TUSK platform developed by Tufts University.[11] This e-learning

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system provides students with access to syllabi, lecture recordings, quizzes, and other resources to support learning, especially for those preparing to serve in underserved rural areas.

On a broader scale, the Medical Council of India has been using Google Groups to train medical faculty through a one-year fellowship program offered at multiple nodal centers. Similarly, the FAIMER fellowship employs Listserv as an online learning platform across its centers in India.[11]

Challenges in Digital Education

Digitalization enables students to actively participate, learn, and collaborate regardless of time and place. However, digital education faces certain challenges, such as technical obstacles, and the abilities of educators and students to use information and communication technology. Globally, the availability of devices, internet speed, stability and adequate security need consideration. Using videoconferencing has caused motivational issues because it changes common interactions. Understanding nonverbal cues, which is easier in face-to-face settings, becomes more challenging and increases cognitive effort. These challenges highlight the need for resources and investment in developing digital learning and education.[14] Continuous improvement in the medical curriculum, particularly in establishing new approaches to online active learning, needs to be explored to incorporate digital learning more effectively.[15-18]

While most medical students find e-learning enjoyable and effective, it is often seen as a complement rather than a replacement for traditional didactic methods. Blended learning, which combines e-learning with instructor-led sessions, has consistently shown higher student satisfaction compared to traditional lecture settings, although test scores may not always reflect significant differences.[19-20]

Reimagining Medical Education: A Hybrid Approach

Blended digital education combines the best of both worlds by integrating online digital tools with traditional face-to-face instruction, creating a more dynamic and flexible learning environment. This approach enhances communication skills and knowledge acquisition by offering interactive and multimedia content, personalized feedback, and opportunities for collaborative learning. It caters to diverse learning styles, allowing students to learn at their own pace while still benefiting from direct interaction with instructors and peers. Furthermore, the adaptability of blended education ensures that materials are current and relevant, promoting continuous improvement and keeping students engaged and motivated. Overall, blended digital education is a powerful strategy to improve educational outcomes, making it a valuable addition to the CBME curriculum.

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