

McCoy L, Lewis JH, Dalton D. Gamification and Multimedia for Medical Education: A Landscape Review. J Am Osteopath Assoc. 2016 Jan;116(1):22-34. doi: 10.7556/jaoa.2016.003. PMID: 26745561.

Gamification is “the process of game-thinking and game mechanics to engage users and solve problems” (p. 2). According to a published report, building the skills of digital literacy, complex thinking, and creativity may help to ensure the success of the current generation of medical students. Utilizing gamified platforms such as educational games, mobile applications, and virtual patient simulations could help build these skills.

In this article, the authors had two main objectives. First, they explored and reported on the potential advantages that enhanced digital literacy, complex thinking, and creativity strategies may bring to medical education through gamified strategies. Second, they presented several examples of past, present, and future electronic platforms that may fulfill these goals during preclinical and clinical training.

Although research involving gamification in medical education is young, there have been some promising results. However, many of these studies have recommended further research as the published literature has either not been rigorous enough or has failed to show statistically significant outcomes.

The potential advantages of gamified training platforms in medical education include the following:

Increased engagement: Games and gamification elements introduce fun and excitement in the context of stressful environments. Research suggests video game play results in increased dopamine levels and may activate pleasure centers in the brain. This can keep students engaged and facilitate progression through difficult tasks.

Enhanced collaboration: Working as part of a team will be necessary for the future of health care delivery. Games and simulations offer opportunities to practice working as part of a team as well as interact with other players in a social setting, requiring teamwork or competition.

Real-world application: Games and virtual patient simulations may be designed to allow students to solve real-world problem, enhance realism, and improve the applicability of a lesson through facilitated decision-making.

Clinical decision making: Clinical reasoning, information retrieval, and diagnostic acumen can be practiced using games and virtual simulations for medical education. This can then provide opportunities for demonstrating competence and receiving feedback. Importantly, risk-free practice of reasoning and technical skills can be accomplished as well.

Distance training: Distance learning, an important part of modern medical education curricula, can be augmented through gamified platforms and can support learning competencies through interactive experiences. Some platforms can be integrated into learning management systems.

Learning analytics: Using advanced analytics offered by these platforms, educators can track every decision a student makes during a session and focus on the review of observed deficits.

After reviewing end-of-game reports, instructors are also able to provide feedback to individuals or groups and evaluate key learning takeaways.

Swift feedback: Part of the appeal of gamification is feedback in the form of dashboards, meters, and reward schedules that may be instantaneous. Through a trial-and-error process, learners are prompted to review information tailored to the clinical scenario when mistakes are made. This may encourage more reading than in a traditional question and answer format.

In the final pages of the article, the authors outline a variety of past, published, or established mobile applications, electronic games and virtual patient simulations linking them back to each of the potential advantages listed above. They also list a few platforms with published pilot reports from 2008 to 2015.

Although the literature is evolving, the future of medical education may include elements of electronic games and other platforms that could complement traditional educational offerings as well as play to the strengths and experiences of the current generation of students who have increased comfort and experience with advanced technologies.