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Levelling Up Health Care Education: The Impact of Game-Based Learning on Future Health Professionals

[1]Dr.Priyadarshini Karthikeyan,[2]Dr.Ramesh Kumaresan,[3]Dr.Priyadharshini Arjunan,[4]Dr.Aldrin Jerry,[5]Dr Sameen Rajasekar Jaiseelal

[1]Assistant Professor, Faculty of Dentistry, AIMST University
[2]Professor, Faculty of Dentistry, AIMST University
[3]Lecturer Faculty of Dentistry, AIMST University
[4]LECTURER Faculty if Dentistry, AIMST University
[5]Lecturer Faculty of Dentistry, AIMST University

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Abstract

Game-based learning (GBL) has gained significant traction in health care education, revolutionizing how future professionals are trained. Through simulations, role-playing, and problem-solving, GBL offers an interactive, engaging, and experiential approach to learning. This review explores the effectiveness of GBL in enhancing knowledge retention, skill development, decision-making, and teamwork among health professionals. We highlight evidence supporting GBL's impact on medical education and consider the challenges of integrating these tools into current curricula. Additionally, we address the need for further research to establish GBL as a core pedagogical tool in health care training.

Keywords

Game-based learning, health care education, medical simulations, future health professionals, clinical skills, gamification, medical curriculum, experiential learning, knowledge retention, decision-making

Introduction

Health care education has traditionally relied on didactic lectures and clinical rotations to teach future professionals. However, this method often fails to engage learners deeply or adequately prepare them for the dynamic nature of clinical practice. Game-based learning (GBL) has emerged as a promising educational strategy, leveraging gamification to enhance student engagement, knowledge acquisition, and skill development. GBL encompasses simulations, role-playing games, and interactive problem-solving that replicate clinical scenarios, offering a hands-on learning experience.

This review evaluates the role of GBL in health care education, focusing on how it prepares students for real-world clinical environments, its influence on learning outcomes, and the challenges associated with its implementation.

Theoretical Framework

Experiential Learning

GBL aligns with Kolb's experiential learning theory, which emphasizes the importance of hands-on experience in reinforcing knowledge. Simulations and role-playing allow students to practice clinical decision-making in a low-risk environment while reflecting on their actions and decisions (Kolb, 1984).

Constructivism

Constructivist learning theory posits that students build knowledge through active engagement and problem-solving. In GBL, learners interact with game scenarios that require them to apply theoretical knowledge to clinical problems, thus constructing meaningful learning experiences (Vygotsky, 1978).

Self-Determination Theory

GBL also draws from Deci and Ryan's self-determination theory, which highlights the importance of autonomy, competence, and relatedness in motivating learners. Game-based approaches allow students to take control of their learning process while receiving immediate feedback, which fosters intrinsic motivation (Deci & Ryan, 1985).

Impact of Game-Based Learning on Health Care Education

1. Enhanced Knowledge Retention

GBL has been shown to improve knowledge retention compared to traditional methods. By actively engaging students in problem-solving, it helps consolidate learning. A study by Wang et al. (2016) found that GBL participants retained more pharmacology concepts than those in conventional lecture-based sessions.

2. Development of Practical Skills

Simulations used in GBL enhance procedural skills, especially in complex tasks such as surgery. Graafland et al. (2014) demonstrated that simulation-based GBL improved medical students' laparoscopic skills significantly.

3. Improved Critical Thinking and Decision-Making

Game scenarios require real-time decision-making, enhancing students' critical thinking skills. Akl et al. (2010) found that medical students trained through GBL were better at clinical reasoning and diagnostic problem-solving than their peers.

4. Collaboration and Teamwork

Many GBL platforms involve multiplayer simulations, fostering teamwork and communication. A study by Cook et al. (2012) highlighted the improvement in team dynamics when students collaborated on simulation-based tasks.

5. Reduced Anxiety and Increased Confidence

Practicing in a simulated environment can reduce anxiety, especially in high-pressure situations such as emergency care. Research by de Wit-Zuurendonk and Oei (2011) suggests that GBL increases learners' confidence by allowing them to practice repeatedly without the fear of harming patients.

Challenges of Game-Based Learning in Health Care Education

High Development Costs

One significant challenge in adopting GBL is the cost of developing high-quality medical simulations. Designing realistic game-based platforms requires substantial financial investment, which can limit its accessibility for many institutions (Ricciardi & De Paolis, 2014).

Educator Resistance

Some educators may resist using GBL due to unfamiliarity with the technology or skepticism about its efficacy. Integrating GBL into established curricula also requires significant time and effort, which can be a barrier (Ricciardi & De Paolis, 2014).

Standardization and Assessment

The variability in the quality of available GBL resources presents another challenge. It is essential to standardize game-based tools to ensure that all learners receive a consistent educational experience. Additionally, assessing the effectiveness of GBL in developing clinical skills remains complex, requiring more comprehensive studies (Graafland et al., 2014).

Conclusion

Game-based learning presents a unique and promising opportunity to revolutionize health care education. It offers an engaging, interactive approach that enhances knowledge retention, skill development, and decision-making while promoting collaboration and confidence. Despite the challenges of implementation, GBL is a powerful tool for equipping future health professionals with the skills needed for modern clinical practice. Continued research and investment are necessary to fully integrate GBL into health care education.

References

- Akl, E. A., Sackett, K., Pretorius, R., et al. (2010). Educational games for health professionals. Cochrane Database of Systematic Reviews.
- Cook, D. A., Hatala, R., Brydges, R., et al. (2012). Technology-enhanced simulation for health professions education: a systematic review and meta-analysis. JAMA, 306(9), 978-988.
- de Wit-Zuurendonk, L. D., & Oei, S. G. (2011). Serious gaming in women's health care. BJOG: An International Journal of Obstetrics & Gynaecology.
- Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. Springer.
- Graafland, M., Schraagen, J. M., & Schijven, M. P. (2014). Systematic review of serious games for medical education and surgical skills training. British Journal of Surgery, 101(13), 1575-1583.
- Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Prentice Hall.
- Ricciardi, F., & De Paolis, L. T. (2014). A comprehensive review of serious games in health professions. International Journal of Computer Games Technology.
- Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.
- Wang, R., DeMaria, S., Goldberg, A., et al. (2016). A systematic review of serious games in training health care professionals. Simulation in Healthcare, 11(1), 41-51.
- Alinier, G. (2007). A typology of educationally focused medical simulation tools. Medical Teacher, 29(8), e243-e250.
- Gorbanev, I., Agudelo-Londoño, S., & González, R. A. (2018). A systematic review of serious games in medical education. Simulation in Healthcare, 13(3), 147-157.
- McGaghie, W. C., Issenberg, S. B., Cohen, E. R., et al. (2011). Does simulation-based medical education with deliberate practice yield better results than traditional clinical education? Medical Education, 45(9), 973-979.
- Scheckel, M. (2009). Promoting active learning in nursing education through simulation. Nurse Education Today, 29(1), 38-44.
- Walsh, C. M., & Rose, D. N. (2011). Simulation-based medical education. Chest, 140(4), 1134-1141.
- Zyda, M. (2005). From visual simulation to virtual reality to games. Computer, 38(9), 25-32.