Chapter 12
The Double-Edged Sword of Gamification:
Navigating the Challenges and Ethical Concerns of Gamification in Higher Education

Noreen Zahra
https://orcid.org/0000-0001-8977-3760
Virtual University of Pakistan, Lahore, Pakistan

Aisha Ismail
https://orcid.org/0000-0003-4458-4311
Virtual University of Pakistan, Lahore, Pakistan

ABSTRACT

The integration of virtual learning environments in higher education has revolutionized engagement and personalized learning. However, these technologies also present practical and ethical challenges. This chapter explores the integration of gamification elements in higher education, focusing on challenges and ethical concerns. The authors argue that studies on gamification adoption in higher education are biased and overly focused on learners. This chapter also highlights the need for the readiness of key actors, such as higher educational institutions, educators, and game developers. The authors also highlight the ethical issues of gamification, including data privacy, skewed algorithms, cheating codes, and pedagogical integrity. Based on the literature survey and primary research, the chapter finally proposes a strategy framework for HEIs preparing to adopt gamification as a learning tool, highlighting the importance of considering the perspectives of all key actors to prevent value co-destruction.

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INTRODUCTION

Higher education has undergone a significant pedagogical shift over the past few decades, primarily driven by advancements in educational technology. Initially, it was marked using fundamental tools, including overhead projectors, computers, and various educational software applications. However, following the Fourth Industrial Revolution (4IR) or Education 4.0, educational institutions have progressively adopted more digitized tools and platforms to enhance interactive learning experiences (Ab Rahman et al., 2019; Cheong et al., 2014). Although the rapid pace of innovation, digitization, and artificial intelligence (AI) is often overemphasized as a primary driver of educational technologies (EdTech) progressive adoption, it is only a partial reality. Higher educational institutions (HEIs) are progressively adopting EdTech because it caters to the learning preferences of Generation Z (Gen Z), the first cohort to grow up in a fully digital world. Born in the mid-1990s and early 2010s (Gen Z) with inherent tech-savviness and digital fluency, they prefer *multimodal learning*, integrating various formats such as videos, images, engaging visuals, and interactive content.

The Association for Educational Communications and Technology defines EdTech as "*the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources*" (Januszewski, 2008). Hence, EdTech encompasses learning management systems (LMS), video conferencing, authoring tools, screen-casting, recorded lectures, virtual reality (VR) simulations, and gamification, which create a virtual learning environment (VLEs). The plurality of VLEs in HEIs is attributed to several interrelated factors, reflecting the transformation brought about by digitization, innovative approaches to learning, redefined roles, and revised instructional design. For instance, 4IR has created a digitized or cloud space for quick, interactive, and flexible learning experiences. Moodle, Blackboard, and Canvas have emerged as the most widely adopted digital platforms, offering centralized course materials, assessments, and communication spaces. The COVID-19 pandemic also accelerated the integration of VLEs in HEIs to ensure educational continuity through remote learning. Furthermore, service institutions, including HEIs, have digitized their infrastructures and instructional designs to provide cost, operational, and service efficiency, thereby remaining competitive in an increasingly interconnected world.

Cloud-based technologies have enabled the adoption of scalable VLEs to integrate diverse EdTech; thus, concepts like "EdTech-as-a-Service" (EaaS) gained popularity, reflecting how cloud computing allows HEIs to access cutting-edge technologies. To date, VLEs powered by EdTech and AI have transitioned from basic content delivery systems to sophisticated and engaging learning experiences through gamification. Literature supports the adoption of gamification as an educational tool