

Unlocking Learning through Play: A Cross-Modal Analysis of Player Behavior in Game-Based Health Education

T. Mzikamwi

MidlandsState University, Gweru, Zimbabwe

O. Muzurura *

MidlandsState University, Gweru, Zimbabwe

Abstract

This paper examines the application of game-based learning (GBL) as a transformative approach to health education in Zimbabwe, addressing the pressing challenges faced by health training personnel. The Zimbabwean health sector is currently grappling with significant issues, including inadequate training resources, high staff attrition rates, and a skills gap that undermines healthcare delivery (Makonese et al., 2021). By integrating video, audio, and text data from gameplay, we conduct a cross-modal analysis of player behavior in health education games. This research aims to uncover how health workers engage with critical content, strategize in clinical scenarios, and collaborate effectively within these immersive environments. The findings highlight the potential of GBL to enhance knowledge retention, improve clinical skills, and foster teamwork among health workers (Gee, 2003). The challenges in Zimbabwe's health sector, such as insufficient funding, lack of infrastructure, and a brain drain of skilled professionals, demand innovative educational solutions (Chopra et al., 2020). Existing training programs often fail to meet the evolving needs of healthcare delivery, resulting in a workforce that is ill-prepared for the challenges they face (Mutsvangwa et al., 2019). Our research aims to bridge this gap by providing actionable insights for educators and developers in creating effective health education games tailored to the needs of Zimbabwean health professionals. Through a detailed exploration of player interactions and learning processes, this study demonstrates how GBL can reshape the training landscape for health personnel, ultimately contributing to improved health outcomes in communities. We will explore the intersection of AI, gaming, and health education, and illustrate the potential of a multi-faceted approach to enhance training effectiveness in Zimbabwe's health sector.

Keywords

Health Workforce Training, Player Behavior Analysis, Clinical Skills Development, Innovative Training Solutions.

