Chapter 5
Gamification of E-Learning in African Universities:
Identifying Adoption Factors Through Task-Technology Fit and Technology Acceptance Model

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ABSTRACT

Gamification in education is a strategy of motivating and engaging students by integrating game design features into the instructional process. Although there is a growing body of scientific evidence supporting the effectiveness of gamification in the educational setting, some of the evidence is inconclusive and insufficient, especially in developing nations. The purpose of this study is to integrate the technology acceptance model and task technology fit to investigate instructors' intention to use gamified online learning. A sample of 50 participants across various African institutions was involved in this study. Structural equation modelling implemented via partial least squares (PLS) is used to test the research hypotheses. The results revealed that intention to use gamified online learning was significantly and positively influenced by task technology fit, perceived usefulness, and attitude. Notably, subjective norms, facilitating conditions, and computer anxiety failed to predict behavioural intention. The authors discuss the implications of the findings and propose future directions.

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INTRODUCTION

Described as a strategic attempt to enhance organisations, systems, and services, gamification harnesses game elements and utilises them in a non-game context. (Deterding et al., 2011). Albeit there is no extensive list of game elements, the most commonly utilised ones are points, badges, levels, leaderboards, challenges, and badges (Manzano-Leon et al., 2021; Deterding et al., 2011; Mustafa et al., in press). Applying these game elements in the classroom aims makes learning more appealing while inspiring young learners in the modern age of interactivity and games (Glover, 2013). In its most basic form, gamified learning approaches enhance an existing learning system and transform it into a game-like experience. The strength of interactive gamified learning lies in its potential to influence behaviour towards an intended goal.

Most significantly, in the Coronavirus pandemic (COVID-19) age, gamifying online learning platforms can offer students a degree of commitment to compensate for the lack of classroom activities. This becomes more important, especially that many institutions have implemented blended learning or exclusively online instruction to avoid disruptions in student learning. Nevertheless, in addition to coping with unexpected technical issues, instructors face challenges adapting their lessons to the online environment effectively. A principal challenge with the present online learning systems for educators is encouraging and motivating students to use the system effectively (Cable & Cheung, 2017).

Accordingly, gamification has gained prominence in the education context and is actively being explored (Rodrigues et al., 2021; de la Pena et al., 2021). Several scholars argue that when gamification is designed and implemented appropriately, it can improve students' learning performance through a behavioural change (Sailer & Homner, 2020; Aldemir et al., 2018; Adukaite et al., 2017).

Furthermore, using game elements in online learning can significantly improve educational environments (Antonaci et al., 2019; Alabbasi, 2018). In the case of African universities, however, many are still not ready to gamify their educational programs and, failed to completely leverage the market opportunities of the digital gaming industry (Sawahel, 2020; Ofosu-Ampong et al., 2020). Nevertheless, the World Economic Forum reported that providing adequate education and employment to sub-Saharan citizens will attract an additional USD 500 billion to the region's economy over 30 years (Myers, 2016). Literature also shows that gamifying a university course can improve students' engagement and academic achievement (Manzano-Leon et al., 2021), critical to achieving a high-quality education. A recent study found that teachers have a favourable attitude toward gamification (Martí-Parreño et al., 2016; Sánchez-Mena & Martí-Parreño, 2016). Hence, gamification strategy in learning can motivate students, engage them in the learning process, and minimise dropout rates.

Despite the many potentials of gamification when integrated into online learning, only a limited number of African universities in Kenya, Nigeria, and South Africa currently utilise gamified learning environments (Sawahel, 2020; Ofosu-Ampong et al., 2020). Accordingly, African nations are yet to fully explore the potential of gamification in an online learning platform and its positive impact on students' engagement and performances. In this regard, it becomes crucial to understand factors that will affect the adoption of gamification-based online learning in various African institutions. Determining these factors will provide education leaders with the necessary knowledge to create strategies to encourage more adopters of such modern pedagogy. To make a robust model, and because only a few researchers have integrated information systems (IS) theory in investigating e-learning adoption, Technology Acceptance Model (TAM) was extended by utilising Task Technology Fit (TTF). The study findings