Gamification in Learning: Students' Motivation and Cognitive Engagement in Learning Business Using Quizizz

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Abstract: Gamification has received extensive research attention within the context of language and scientific courses, involving the integration of game-based features into non-gaming scenarios to enhance user experience and engagement with technology. However, contradictory findings have emerged in students' perceptions of gamification across various aspects such as motivation and engagement, as noted in previous studies. Given the conflicting findings from prior research on students' perception toward gamification in learning, a need for further investigation becomes evident. Recognising the significance of broadening gamification exploration beyond language and science-oriented courses, this study aims to examine students' perceptions of gamification in learning. Additionally, it seeks to evaluate students' levels of motivation and cognitive engagement while studying Business using the Quizizz platform. To achieve these objectives, a mixed-method approach was employed. Data collection was conducted through online questionnaires and interviews. The quantitative data from the questionnaires underwent descriptive analysis, while the qualitative data gathered from online interviews were subjected to narrative analysis. The findings of the study suggest that students demonstrate a high level of motivation and cognitive engagement when employing Quizizz for Business studies. Participants expressed favourable opinions of Quizizz due to its interactive gamification components. Importantly, elements like points, rewards, leaderboards, and varying levels of difficulty within Quizizz emerged as crucial factors influencing students' motivation and cognitive engagement in the context of Business learning.

Keywords: Cognitive engagement, Gamification elements, Gamification in learning, Mixed-method approach, Motivation

1. Introduction

In recent years, technology has transformed education systems, placing increasing emphasis on learning through modern technological approaches rather than traditional methods (Alabbasi, 2018). Research indicates that a significant number of students lack interest and attention in learning due to the continued use of traditional methods whereby teacher conveys information through presentation based on lecture slides or textbooks, while students spend their time listening and taking notes (Munuyandi et al., 2021). Educators frequently encounter challenges in motivating students to learn, encouraging their active participation during learning sessions (Alabbasi, 2018; Pais et al., 2018; Rahayu et al., 2022). In traditional teaching methods, students mostly learned through repetition and memorisation which leads to boredom. Boredom and lack of interests towards learning stem from repetitive activities that lack complexity and cognitive stimulation (Rahayu et al., 2022). Learning

objectives can be better achieved by implementing suitable teaching approaches that align with the advancements in information and communication technology (Razali et al., 2020). One such approach within the realm of ICT that has begun to permeate educational contexts is known as gamification (Razali et al., 2020; Rahayu et al., 2022). The concept of gamification involves integrating game-based elements into non-gaming settings to enhance user experience and engagement with technology (Alabbasi, 2018; Gomez-Carrasco et al., 2019; Rahayu et al., 2022).

Gamification has found widespread application in diverse fields, including business, marketing, medicine, and is now emerging in educational contexts. Notably, gamification is increasingly being employed within educational settings to enhance student motivation and engagement, as evidenced by previous studies (Razali et al., 2020; Rahayu et al., 2022). Various gamification elements, such as points, difficulty levels, leaderboards, rewards, collaboration, and competitiveness, contribute as entertaining components of lesson plans, essential for motivating and engaging students (Alsawaier, 2018; Razali et al., 2020; Rahayu et al., 2022). Motivation represents a pivotal element in the teaching and learning process, closely intertwined with learning itself (Alsadoon et al., 2022). In parallel, engagement denotes an individual's enthusiasm and emotional commitment to learning activities (Alsawaier, 2018). These two components often converge, particularly in the realms of intrinsic motivation and cognitive engagement (Alsawaier, 2018; Rahayu et al., 2022). A key facet of engagement in learning contexts is cognitive engagement, characterised by students' earnest efforts to comprehend a subject matter and their sustained dedication to studying over extended periods (Rahayu et al., 2022). It is argued that a combination of robust motivation and high levels of cognitive engagement results in an effective learning experience (Alsawaier, 2018).

The primary objective of gamification lies in stimulating learners to adopt desired behavioural changes (Al-Dosakee et al., 2021). Gamification captures students' interest in learning materials, prompting enthusiastic participation in learning activities (Alsadoon et al., 2022). Through interaction with gamified learning activities, students immerse themselves in virtual challenges with the goal of deriving enjoyment, active participation, and learning (Alsawaier, 2018). Gamification in learning entails integrating gamified elements into educational activities to amplify motivation and engagement (Razali et al., 2020). These game elements contribute as entertaining components of lesson plans, essential for engaging students (Alsawaier, 2018). Various gamification elements, such as points, difficulty levels, leaderboards, rewards, collaboration, and competitiveness, can impact students' motivation and cognitive engagement (Pais et al., 2018; Razali et al., 2020).

Research have demonstrated that gamification may catalyse engagement and motivation, all of which are required to create great learning (Alsawaier, 2018). Previous studies have primarily focused on students' perceptions of gamification in learning within language (Fithriani, 2021; Cruz & Guayara, 2021) and scientific courses (Hursen et al., 2019; Jones et al., 2019; Rahayu et al., 2022). For example, Fithriani (2021) and Jones et al. (2019) uncovered that a majority of participants exhibited positive perceptions is using gamification tools such as “Kahoot” in learning English and Biology respectively. These findings highlighted that gamification integration able to heightened students’ interest and willingness to learn. In another study that involved learning computer science, it has been shown that an online gamified learning environment increased students’ motivations in learning (Alsadoon, 2022). When it comes to science education, students often grapple with understanding scientific subjects, contributing to elevated rejection and dropout rates (Kalogiannakis et al., 2021). Consequently, the incorporation of gamification elements and components into science courses is able to mitigate obstacles to science education by boosting students' motivation, cognitive and metacognitive achievements, and overall learning satisfaction (Kalogiannakis et al., 2021). However, it is worth noting that not all gamification approaches have proven effective in influencing students’ motivation and engagement. For instance, according to Hanus and Fox (2015), students who participated in gamified learning sessions experienced diminishing enthusiasm and engagement over time. The study by Hanus and Fox also revealed that the incorporation of gamification elements such as leaderboards, badges, and competitive elements has no significant impact on educational outcomes, and in some cases, may even adversely affect students' motivation. In another study by Kyewski et al. (2018), which employed the "Moodle" application for university students' learning, it was concluded that gamification elements such as badges had no discernible effect on students' enthusiasm for learning (Kyewski et al., 2018).

One of the gamification platforms used in past studies is Quizizz. Kalogiannakis et al. (2021) conducted a systematic review of gamification for learning, and identified "Kahoot" as the most