



INTERNATIONAL JOURNAL OF
MODERN EDUCATION
(IJMOE)
www.ijmoe.com



KEY FACTORS INFLUENCING THE EFFECTIVENESS OF GAMIFICATION IN ACCOUNTING EDUCATION

Ros Amalina Zakaria^{1*}, Nik Zam Nik Wan², Azilawati Abdullah @ Abd Aziz³, Siti Nor Adawiah Hussin⁴, Nor Asmawani Che Hassan⁵

¹ Faculty of Accountancy, Universiti Teknologi MARA (UiTM), Cawangan Kelantan, Malaysia
Email: amalina86@uitm.edu.my

² Faculty of Accountancy, Universiti Teknologi MARA (UiTM), Cawangan Kelantan, Malaysia
Email: nikzam@uitm.edu.my

³ Faculty of Accountancy, Universiti Teknologi MARA (UiTM), Cawangan Kelantan, Malaysia
Email: azila430@uitm.edu.my

⁴ Faculty of Accountancy, Universiti Teknologi MARA (UiTM), Cawangan Kelantan, Malaysia
Email: stadawiah771@uitm.edu.my

⁵ Faculty of Accountancy, Universiti Teknologi MARA (UiTM), Cawangan Kelantan, Malaysia
Email: asmawani@uitm.edu.my

* Corresponding Author

Article Info:

Article history:

Received date: 27.03.2025

Revised date: 14.04.2025

Accepted date: 19.05.2025

Published date: 10.06.2025

To cite this document:

Zakaria, R. A., Nik Wan, N. Z., Abd Aziz, A., Hussin, S. N. A., & Che Hassan, N. A. (2025). Key Factors Influencing the Effectiveness of Gamification in Accounting Education *International Journal of Modern Education*, 7 (25), 381-389.

DOI: 10.35631/IJMOE.725026.

Abstract:

The integration of gamification in education has gained substantial attention in recent years, particularly in fields like accounting, where traditional teaching methods can sometimes fail to engage students effectively. This paper explores the factors that contribute to the effectiveness of gamification in accounting education. The problem lies in the challenge of engaging students in a subject that is often perceived as dry and difficult. Accounting educators face the ongoing task of creating dynamic, interactive learning experiences that enhance both understanding and motivation. This study aims to identify key factors that influence the success of gamification in accounting courses. A literature review methodology will be employed to gather and synthesize research findings from various sources, including academic journals, books, and case studies. The finding reveals gamification effectiveness is contributed by thoughtful design of gamification strategy which align with learning objectives, technological infrastructure, student motivation, educator involvement and the use of timely feedback mechanism. The benefits of this paper are twofold: first, it will provide educators with a clearer understanding of how gamification can enhance student engagement and retention in accounting courses; second, it will contribute to the broader discourse on innovative teaching methods in higher education, specifically within accounting. The findings of this study are expected to guide future pedagogical



strategies and inform curriculum development in accounting programs globally.

Keywords:

Gamification, Accounting Education, Educational Technology, Game Design Elements, Curriculum Development, Teaching Methods

Introduction

The integration of gamification into educational settings has emerged as a promising strategy to enhance student engagement, motivation, and learning outcomes. Gamification refers to the application of game design elements in non-game contexts, such as education, to foster a more interactive and enjoyable learning environment. In recent years, this approach has gained considerable traction across various disciplines, particularly in areas where traditional pedagogical methods may fall short in capturing student interest. Accounting education, known for its theoretical complexity and perceived dryness, stands to benefit significantly from such innovative teaching strategies.

In the Malaysian context, studies have highlighted the challenges faced by accounting students due to the complexity of subjects like the Malaysian Financial Reporting Standards (MFRS) and the reliance on traditional teaching methods. Alwi et al. (2017) noted that such conventional approaches often fail to engage Generation Z students, leading to poor academic performance. To address this, gamification has been proposed as an alternative method to make learning more engaging and effective. For instance, Abu Bakar (2024) implemented a gamified learning approach using QR codes and augmented reality (AR) in a Cost Management Accounting course, resulting in improved student engagement and academic performance.

Historically, accounting has been taught using conventional lecture-based approaches, often leading to passive learning and low levels of student engagement. With the advent of digital learning tools and a growing demand for student-centered instruction, educators are increasingly exploring gamification as a means to make accounting concepts more accessible and stimulating. Research indicates that when implemented effectively, gamification can enhance not only student engagement but also knowledge retention, critical thinking, and collaborative learning. A systematic literature review by Almuntsr et al. (2024) found that gamification positively impacts accounting education by making learning more interactive and enjoyable, thereby improving students' motivation and academic performance.

Despite the growing interest in gamification and its potential benefits, the effectiveness of gamified approaches in accounting education remains inconsistent and not fully understood. While some studies have reported positive outcomes such as increased engagement, improved academic performance, and greater conceptual understanding, others have noted minimal or no significant impact—often due to poor implementation, misalignment with learning objectives, or inadequate technological support (Almuntsr et al., 2024). This discrepancy highlights a critical gap in understanding what specific factors contribute to the success or failure of gamification strategies in accounting classrooms.

In the Malaysian higher education context, this issue is particularly relevant as universities push for more student-centered and technology-enhanced pedagogies. As Alwi et al. (2017) emphasized, the mismatch between traditional teaching styles and the learning expectations of digitally native students calls for innovative solutions. However, the success of such solutions depends on identifying and integrating key factors—such as game design quality, relevance to course content, feedback mechanisms, and educator involvement—into gamification initiatives.

Given these challenges, there is a pressing need to explore and synthesize the factors that influence the effectiveness of gamification in accounting education. A better understanding of these factors will help educators design more targeted and impactful learning experiences, ultimately improving student engagement, knowledge retention, and academic achievement in accounting programs.

Therefore, the objective of this conceptual paper is to identify and analyse key factors that contribute to the successful implementation of gamification in accounting education. This paper will contribute to accounting education by identifying key factors that influence the effectiveness of gamification, such as strategy design, alignment with learning objectives, technological support, and educator involvement. It offers practical insights for improving student engagement, motivation, and learning outcomes in accounting courses. The findings also support the development of more interactive, student-centered teaching strategies and contribute to the broader discourse on innovative approaches in higher education.

Literature Review

Gamification Effectiveness

Gamification effectiveness in education is best defined as the extent to which the application of game-like elements in non-game contexts (such as educational settings) enhances student motivation, engagement, learning outcomes, and overall academic performance. Research on gamification in education often focuses on how game mechanics, dynamics, and aesthetics (such as points, leaderboards, achievements, challenges, and rewards) can be used to make learning more interactive and enjoyable, while also promoting positive behaviours like persistence, problem-solving, and collaboration.

Gamification is considered effective when it increases student motivation, improves engagement, enhances learning outcomes, promotes collaboration and social learning, encourages mindset growth and can be tailored to individual student needs. Deterding et al. (2011) highlighted the positive impact of gamification in educational context on student motivation, while Lee and Hammer (2011) discussed how incorporating game mechanics into educational environments creates a more immersive experience, which leads to increased focus and participation. With gamification, students are more likely to share knowledge, communicate effectively and work together towards common goals when gamified collaboration is used (Kuo et al. 2014) and their mindset growth through game mechanics which applied iterative process of playing, failing, and improving in a gamified experience (Cauley and Hounsell, 2012). Furthermore, Anderson et al. (2015) underlined how game mechanics, such as adaptive levels and personalised feedback, help cater to the specific needs of individual learners, allowing them to progress at their own pace and receive tailored support.

Gamification in Accounting Education

Traditionally, accounting has been perceived as a subject that requires significant technical skills and attention to detail, which can sometimes lead to disengagement and lack of motivation among students. However, incorporating gamification into accounting education offers an innovative approach to make the learning process more engaging, interactive, and enjoyable. Game mechanics can be applied to help students better understand complex topics such as financial reporting, taxation, budgeting, and auditing, by transforming them into engaging and practical experiences. A study by Al-Montaser et al. (2024) presents a systematic literature review of gamification in accounting education, analyzing 17 articles published between 2017 and 2023. The review highlights that gamification positively impacts student engagement and motivation, leading to improved academic performance. However, it also notes the necessity of addressing challenges such as resource availability and ensuring alignment with educational objectives.

In another Malaysian context, Rosli et al. (2021) examined the influence of gamification on accounting lessons using tools like Kahoot!. The study found that gamification significantly increased students' enthusiasm and willingness to learn accounting, suggesting that incorporating game elements can make accounting education more engaging. Furthermore, Rassiah (2024) discusses the use of accounting case study games to blend theory with hands-on practice, helping students tackle real-world business challenges. This approach not only enhances understanding but also prepares students for the dynamic business environment. These studies underscore the potential of gamification to transform accounting education in Malaysia by making it more interactive and student-centred. However, careful consideration of implementation strategies is essential to maximize its benefits and address potential challenges.

Key Factors Influencing the Effectiveness Of Gamification In Accounting Education

Alignment of Game Design with Educational Objectives

The success of gamification in accounting education depends heavily on how well the gamified elements are designed to meet the learning objectives. This includes incorporating game mechanics such as rewards, leaderboards, and challenges in ways that align with the content of accounting courses. The design should foster student interaction with the subject matter and promote active learning. When gamification strategies are integrated into the curriculum with a focus on achieving specific learning goals, students are more likely to engage deeply with the content and develop the desired competencies. Misalignment between game mechanics and educational objectives can lead to student frustration and reduced motivation (Su, C. L., & Cheng, S. K. 2020). Koivisto, J., & Hamari, J. (2021) found that effective gamification strategies in education are those that incorporate tasks and rewards that map directly to the key learning outcomes. When the game encourages students to master specific skills or knowledge areas, gamification enhances both engagement and academic performance. In accounting education, the alignment of game-based learning elements with curriculum objectives, such as financial analysis and ethical decision-making, was found to increase both student motivation and their ability to apply concepts in real-world contexts (Goh, M. L., & Lim, E. H., 2023).

Student Motivation and Engagement

Student motivation and engagement plays a crucial role in the success of gamification. It was noted that students with higher initial motivation and engagement levels responded more positively to gamified learning environments, leading to improved academic performance and a deeper understanding of complex accounting concepts (Chukwuani, 2024). Besides, Almuntsr et al. (2024) found that students who were motivated and engaged showed significant improvements in academic performance when gamification techniques were applied. The study underscores the importance of student motivation and engagement as key factors that enhance the effectiveness of gamified educational approaches.

Technological Infrastructure and Accessibility

The availability of the right technological tools and platforms is essential for the successful implementation of gamification in accounting education. Platforms that support interactive simulations, quizzes, and real-time feedback are crucial for a gamified approach. Additionally, the ease of access and use of these platforms by students and educators plays a key role in the overall success of gamified learning environments. The accessibility and functionality of gamified platforms such as online simulations and virtual learning environments are critical for the smooth implementation of gamification in accounting courses. Technological limitations, such as lack of access to necessary software or slow internet speeds, could hinder the effectiveness of gamification (Cheong et al. (2014). Beside that, inadequate technological infrastructure, lack of access to necessary devices, and limited internet connectivity contributed to non-effectiveness of gamification implementation (Bai, H., & Zhao, M. (2022), and students with better technological accessibility were more engaged with the gamified elements of the platform, such as earning badges, achieving milestones, and interacting with interactive challenges which proved that technological accessibility is a crucial factor for gamification to be effective (Singh, A., & Sharma, S. (2021). Therefore, robust technological infrastructure is crucial for the effective implementation of gamification. Institutions that provided well-integrated systems for students to access gamified elements—such as points, badges, and leaderboards—had significantly higher levels of student engagement and academic performance (Huang, Y. M., & Liu, M. C.,2020).

Support and Involvement of Educators

The role of educators in the design, implementation, and facilitation of gamified learning experiences is critical to the success of gamification in accounting education. Educators must be trained in how to incorporate gamification effectively into their teaching and how to use it to enhance the learning experience. Additionally, their involvement in providing guidance, feedback, and encouragement is necessary for keeping students motivated.

The involvement of educators in guiding students through gamified activities and providing feedback during the learning process was crucial for maximizing the effectiveness of gamification. In the context of accounting education, educators helped students navigate complex accounting concepts through gamified case studies and challenges, making the learning experience more meaningful and productive (Kassim and Zainuddin, 2023). Besides, as per Benton, L., & Phillips, C. (2022), they agreed that educators who actively support gamification initiatives that is by offering guidance, encouragement, and personalized feedback, help sustain student motivation and involvement. It also has been revealed by Goh, T. T., & Lee, K. (2021) that the support provided by teachers as offering clear instructions,

feedback, and creating a positive classroom environment significantly increases the effectiveness of gamification. Teacher involvement helps students better understand the game mechanics, which in turn improves their engagement and learning outcomes.

Feedback Mechanisms

Immediate feedback is one of the fundamental principles of gamification, and it can significantly enhance the learning experience in accounting education. By providing timely, detailed feedback on student performance through gamified systems, educators can help students identify their strengths and areas for improvement, leading to better learning outcomes.

By giving clear and consistent feedback, especially when provided in a supportive manner helped increase student engagement and perseverance. The feedback not only motivates students but also provides a roadmap for improvement and mastery of learning objectives (Yuan, X., & Liu, D., 2021). Instant feedback such as score updates, badges, and progress bars, is crucial for keeping students motivated in gamified systems. This will helps to maintain engagement and allows students to track their learning progression (Feng, Z., & Zhang, W., 2021). This is supported by Tsai, Y. S., & Lee, H. L. (2021) where they found that students who received frequent formative feedback in the form of points, progress indicators, and narrative comments from instructors performed better in gamified learning activities.

Research Methodology

The purpose of this conceptual research study is to develop a comprehensive model that effectively captures the critical factors influencing the success of gamification in accounting education. To derive meaningful insights, the study employed a thorough review of current literature to identify and analyse these key factors.

Discussion

The objective of this conceptual paper is to summarize the existing research studies regarding the key factors that influence the effectiveness of gamification in accounting education. Therefore, the result from the thorough evaluation of the body of current literature and synthesis of concepts related to gamification effectiveness contributing factors are summarized in the Table 1 below:

**Table 1: Key Factors Influencing the Effectiveness of Gamification
in Accounting Education**

Key Factors	Descriptions
Game design aligned to educational outcomes	Incorporating game mechanics such as rewards, leaderboards, and challenges in ways that align with the content of accounting courses. The design should foster student interaction with the subject matter and promote active learning.
Student motivation and engagement	Commitment and involvement of students in the game activities.
Technological infrastructure and accessibility	The availability of the right technological tools and platforms that support interactive gamification,

	including access to necessary devices and internet connectivity.
Support and involvement of educators	Role of educators in the design, implementation and facilitation of gamified learning experiences. Example, providing guidance, feedback and encouragement.
Feedback mechanism	Immediate feedback such as providing timely, detailed, clear, consistent and frequent formative feedback, progress indicators and narrative comments from instructors.

Conclusion and Recommendation

From reviewing the previous research, this study has summarized five key factors that influence effectiveness of gamification in accounting education. Those factors are game design that aligned to educational outcome, student motivation and engagement, technological infrastructure and accessibility, support and involvement of educators and feedback mechanism. These factors collectively play a critical role in determining the overall effectiveness of gamification in accounting education. Therefore, accountancy educators, particularly in higher education institutions, must be mindful of these critical factors when incorporating gamification as a teaching tool, ensuring that students not only enjoy an innovative learning experience but also successfully achieve the intended learning outcomes.

Acknowledgement

The author wishes to express heartfelt appreciation to the Faculty of Accountancy, Universiti Teknologi MARA (UiTM) Cawangan Kelantan for their unwavering support, encouragement, and for providing the essential resources and facilities that greatly contributed to the development of this conceptual paper. Special acknowledgment is extended to the dedicated team members for their valuable insights, strong commitment, collaborative efforts, and moral support. Your contributions have been truly invaluable. Lastly, sincere thanks are due to my family for their patience, motivation, and steadfast support throughout the completion of this work.

References

- Abu Bakar, S. Z. (2024). The effectiveness of gamification learning in accounting courses with academic performance and student attitudes. *International Journal of Humanities Technology and Civilization*, 9(1), 82–88.
- Almuntsr, N. M., Muhamad, H. B., Ong, T. S., & Shah, S. M. (2024). Effects of using gamification on accounting students' motivation, enjoyment, and academic performance in learning introductory accounting at Libyan universities. *International Journal of Academic Research in Business and Social Sciences*, 14(5), 245–257.
- Almuntsr, N. M., Muhamad, H. B., San, O. T., & Shah, S. M. (2024). Using gamification in accounting education: A systematic literature review (2017–2023). *International Journal of Academic Research in Business and Social Sciences*, 14(2), 1119–1134.
- Alwi, F., Mansor, N., Shamsudin, S. M., Osman, A. H., & Mustapa, N. R. (2017). Formulating a game-based learning for accounting undergraduates as an alternative method of

- learning. *International Journal of Academic Research in Business and Social Sciences*, 7(11), 1356–1365.
- Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2015). *Violent video game effects on children and adolescents: Theory, research, and public policy*. Oxford University Press.
- Bai, H., & Zhao, M. (2022). Challenges in implementing gamification in accounting education: A review of technological infrastructure and accessibility. *Journal of Accounting Education*, 58, 100789.
- Benton, L., & Phillips, C. (2022). Educator support in gamified learning environments: Strategies for sustaining student motivation. *Teaching and Teacher Education*, 112, 103620.
- Cauley, F., & Hounsell, D. (2012). Enhancing teaching and learning in higher education through feedback and assessment. In *A Handbook for Teaching and Learning in Higher Education* (pp. 83–98). Routledge.
- Cheong, C., Filippou, J., & Cheong, F. (2014). Towards the gamification of learning: Investigating student perceptions of game elements. *Journal of Information Systems Education*, 25(3), 233–244.
- Chukwuani, C. (2024). Impact of gamification and simulation in accounting education. *Journal of Accounting and Financial Analysis*, 5(3), 1–10.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining "gamification". In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments* (pp. 9–15). ACM.
- Feng, Z., & Zhang, W. (2021). The role of immediate feedback in gamified learning environments: Enhancing student motivation and engagement. *Journal of Educational Technology & Society*, 24(3), 45–57.
- Goh, M. L., & Lim, E. H. (2023). Integrating gamification into accounting education: Aligning game elements with learning outcomes. *Journal of Accounting Education*, 62, 100748.
- Goh, T. T., & Lee, K. (2021). Teacher involvement in gamification: Impact on student learning outcomes in accounting education. *International Journal of Educational Technology in Higher Education*, 18(1), 45.
- Huang, Y. M., & Liu, M. C. (2020). The impact of technological infrastructure on the effectiveness of gamification in accounting education. *Computers & Education*, 144, 103709.
- Kassim, N. A., & Zainuddin, N. (2023). The role of educators in gamified accounting education: Enhancing student engagement through active facilitation. *Journal of Accounting Education*, 61, 100752.
- Koivisto, J., & Hamari, J. (2021). The rise of motivational information systems: A review of gamification research. *International Journal of Information Management*, 45, 191–210.
- Kuo, Y. C., Walker, A. E., Schroder, K. E. E., & Belland, B. R. (2014). Interaction, Internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *The Internet and Higher Education*, 20, 35–50.
- Lee, J. J., & Hammer, J. (2011). Gamification in education: What, how, why bother? *Academic Exchange Quarterly*, 15(2), 1–5.
- Rassiah, P. (2024, November 26). How to make learning accounting fun and students job ready. *360info*.
- Rosli, K., Khairudin, N., & Mat Saat, R. (2019). Gamification in entrepreneurship and accounting education. *Academy of Entrepreneurship Journal*, 25(3), 1–10.

- Singh, A., & Sharma, S. (2021). Technological accessibility and student engagement in gamified learning environments. *International Journal of Educational Technology in Higher Education*, 18(1), 45.
- Su, C. L., & Cheng, S. K. (2020). A review of gamification in education: Motivational and cognitive perspectives. *Educational Technology & Society*, 23(3), 1–14.
- Tsai, Y. S., & Lee, H. L. (2021). The impact of formative feedback in gamified learning: A study on student performance and engagement. *International Journal of Educational Technology in Higher Education*, 18(1), 30.
- Yuan, X., & Liu, D. (2021). Immediate feedback mechanisms in gamified accounting education: Effects on student learning outcomes. *Accounting Education Review*, 31(2), 112–125.