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MIX & MATCH: COST ME IF U CAN

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ABSTRACT

Game-based learning has emerged as a significant educational strategy that incorporates game elements into the learning process, thereby improving student engagement, motivation, and academic performance. In contrast with traditional classroom approaches, it encourages active engagement and experiential learning via structured challenges, prompt feedback, and rewards. This study aims to create an interactive game-based learning tool, named Mix & Match: Cost Me if U Can, intended to assist students in the process of learning. Mix & Match: Cost Me if U Can is an educational tool that employs game-based learning to help students understand the fundamentals of cost accounting, particularly cost classification, through clear definitions and relatable examples. The game enhances the learning experience by incorporating images and vibrant colours that capture students' attention and make the process more engaging. This visual appeal ensures that learners are not limited to word-by-word memorization but are also stimulated by an exciting, interactive environment. The game also promotes the enhancement of problem-solving and decision-making abilities by engaging learners in goal-directed scenarios. Aimed at both accounting and non-accounting students enrolled in cost accounting courses, Mix & Match: Cost Me if U Can reflects how advancing technology can support personalized, student-centered learning aligned with the needs of 21st-century education.

Keywords: Game-based learning, education, student engagement, critical thinking, active learning

INTRODUCTION

Game-based learning (GBL) is generating significant interest as an innovative method of teaching that integrates game components such as rewards, challenges, and immediate feedback into the learning environment to enhance student engagement and learning outcomes. Studies indicate that GBL works better than the traditional methods of learning. First, it results in enhanced learning and improved academic performance across many subjects (Ding and Yu, 2024). Next, it enhances engagement, especially among millennials who are familiar with interactive entertainment (Nadeem, Oroszlanyova

& Farag, 2023). In addition, it increases student motivation in educational environments by including interactive components that align with students' preferences for engaging and enjoyable learning experiences. Research indicates that the incorporation of game mechanics, such as leaderboards, points, and badges, fosters a competitive spirit and a sense of achievement, which in turn boosts intrinsic motivation and encourages active participation in the learning process (Kuang, Agustina & Monalisa, 2024).

In the context of higher education, particularly in accounting education, students often struggle to stay engaged due to the abstract and technical nature of the content. To address this issue, this study introduces an interactive learning tool called the Mix & Match: Cost Me if U Can, a game-based learning platform designed to improve student engagement and facilitate better learning in cost accounting courses. The framework for this study draws on two key theoretical models: the Student Course Engagement Questionnaire (SCEQ) developed by Handelsman et al. (2005) and the Technology Acceptance Model (TAM) by Davis (1989).

METHODS

The research method employed in this study involved the distribution of questionnaires to gather data. We adapted the measures in the questionnaires from the Student Course Engagement Questionnaire (SCEQ) (Handelsman et al., 2005) and the Technology Acceptance Model (TAM) (Davis, 1989). There are three sections involved. The first section asked about the basic demographic profile of the students. Next, section two about SCEQ to measure student engagement across four dimensions: skills, emotional, participation/interaction, and performance. Lastly, the third section is the questionnaires on TAM to assess perceived usefulness (PU) and perceived ease of use (PEOU) on the game-based tool. Section two and three are rated on a 5-point Likert scale ranging from (1) Strongly Disagree; (2) Disagree; (3) Neutral; (4) Agree; (5) Strongly Agree.

The primary goal of the questionnaires was to determine the elements that influence the student's engagement and acceptance of the game-based learning, which will serve as the basis for the product's development. The targeted respondents were students enrolled in the Faculty of Accountancy at UiTM Perak Branch, Tapah Campus. A total of 83 responses were received from the participants. We used descriptive statistics to summarize the data. This approach provided an overview of students' engagement levels and their perceptions of the usefulness and usability of gamified learning. The results were presented and interpreted to identify overall trends and patterns in student responses.

RESULTS AND DISCUSSION

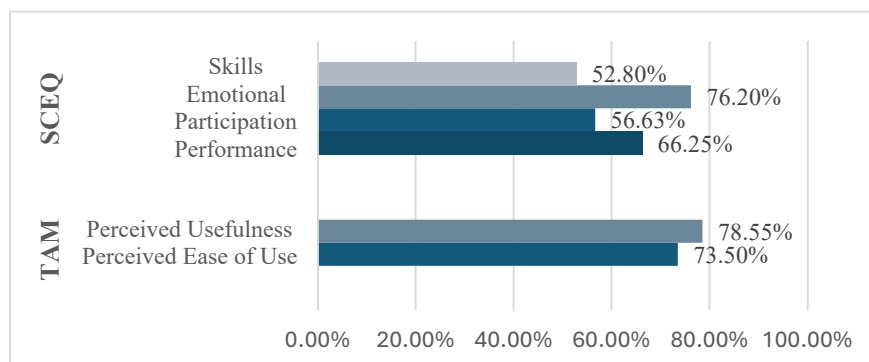


Figure 1.: Student Course Engagement Questionnaire (SCEQ) and the Technology Acceptance Model (TAM) towards Game-based Learning

Figure 1 illustrates the feedback obtained from students regarding their engagement and acceptance towards GBL. The data is segmented into two main categories: SCEQ and TAM. Each category contains several statements rated on a scale, with the total rating percentage of agreed and strongly agreed for each statement displayed. A total of 83 students responded to the survey (72.3 % are female and 27.7% are male). The findings indicate generally positive student engagement and perceptions of game-based learning among the respondents. First, The SCEQ findings revealed that students exhibited the highest engagement in the emotional dimension (76.20%), indicating strong interest and motivation toward gamified learning. This was followed by performance engagement (66.25%), showing a moderate level of effort and achievement orientation during game-based tasks. Meanwhile, participation/interaction engagement was moderate (56.63%), suggesting that students were somewhat involved in peer interaction and discussions. The lowest score was recorded for skills engagement (52.80%), indicating that students applied fewer academic strategies such as note-taking and time management during gamified activities. These findings align with previous research by Handelsman et al. (2005), which suggests that tools enhancing active learning can positively influence multiple aspects of engagement.

Second, in terms of technology acceptance, students demonstrated a positive perception toward game-based learning. Perceived usefulness (PU) scored 78.55%, indicating that students believed gamification improved their academic performance and learning outcomes. Similarly, perceived ease of use (PEOU) recorded a strong score of 73.50%, reflecting that students found gamified tools easy to use and accessible. This result is consistent with research by Ramesh et al. (2025), which indicated that gamifying improves student participation in the classroom since students had a favourable view of the approach. Hence, these findings affirm the potential of gamified learning in higher education, particularly in enhancing motivation and perceived learning benefits. Furthermore, it also supports the Technology Acceptance Model (Davis, 1989), which highlights the importance of both PU and PEOU in technology adoption.



Figure 2.: Interface of the Mix & Match: Cost Me if U Can

In summary, the findings from both SCEQ and TAM indicate that interactive and accessible game-based learning can enhance meaningful engagement and encourage acceptance among learners. Educators who want to improve digital learning practices in the classroom will find these ideas very helpful. The introduction of Mix & Match: Cost Me if U Can is believed to be able to integrate game-based learning strategies to make use of these advantages. It is an innovative game-based learning tool because it combines several well-known game mechanics into a single, cohesive experience. Instead of focusing on just one type of gameplay, we creatively integrate multiple mini games such as Tic Tac Toe to challenge strategic thinking, Hidden Object to improve attention to detail and Matching Items to Answers to reinforce learning of key cost accounting concepts. This multi-game approach keeps learners engaged by offering variety and interactivity, reducing the risk of boredom or fatigue during learning sessions. Furthermore, the game enhances the learning experience by incorporating images and vibrant colours that capture students' attention and make the process more engaging. This visual appeal ensures that learners are not limited to word-by-word memorization but are also stimulated by an exciting, interactive environment. In addition, the Mix & Match: Cost Me if U Can's target market includes accounting and non-accounting students who register for cost accounting courses. Rosmaria et al. (2024) found there is an increase in student engagement and enthusiasm, indicating that games can make learning accounting more accessible and enjoyable for all students, including the non-accounting students, who reported that the game helped them understand the topic.

CONCLUSION

This study examines the feedback that students provide in response to the need for integrating game-based elements into educational practices. It uses a sample of 83 respondents among accounting students. Given this finding, it becomes evident that integrating game-based learning into educational programs can significantly enhance student engagement and support technology acceptance in cost accounting education. The combined use of SCEQ and TAM provides a robust framework to assess both educational effectiveness and user experience. With the primary objective of integrating a digital game into education, the Mix & Match: Cost Me if U Can transforms complex management accounting topics into a fun, immersive, and interactive learning experience. It's more than just a game but it represents promising for a smart educational tool designed to make learning effective, engaging, and enjoyable.

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