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ADVANCING LIFELONG LEARNING FOR EMPOWERED WORLD

ENHANCING TAX EDUCATION THROUGH MULTI-FORMAT GAMIFIED LEARNING TOOLS

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ABSTRACT

A gamified learning platform has been developed to make the study of taxation more engaging and accessible for undergraduate students. Featuring a range of interactive games, the platform includes a journey-based progression game where a character advances by answering tax questions correctly, as well as drag-and-drop tasks, fill-in-the-blank activities, and real-life scenarios enhanced with AI characters and voice interaction. These games cover various tax topics; each tailored with different levels of difficulty based on the topic's complexity and intended learning outcomes. By transforming technical tax content into interactive and relatable experiences, the platform helps students grasp complex concepts more effectively while encouraging active participation and critical thinking. The enjoyable and student-friendly design reduces learning anxiety and supports deeper understanding and practical application. With its potential for use not only in classrooms but also in professional training, this gamified approach offers a fresh and innovative solution for improving tax education through technology.

Keywords: *Gamified learning, Taxation, Undergraduate students, Interactive games, Education innovation*

INTRODUCTION

Traditional methods of teaching tax topics are often perceived as dry, technical, and difficult to grasp, leading to disengagement and lack of motivation among learners (Pillai et al., 2025). The integration of interactive games into tax courses within accounting education represents an innovative pedagogical approach that enhances learning engagement, retention, and application (Kao, Yuan & Wang, 2023; Anwar & Mulyadi, 2025). Interactive educational games that utilize formats such as drag and drop, progressive journey, fill-in-the-blank, and real-life scenarios have been widely acknowledged for their

capacity to support active learning. Incorporating AI-driven characters and avatars with voice capabilities, visual animations, and sound effects further enhances the learning experience by catering to diverse learning styles; auditory, visual, and kinesthetic.

Despite the importance of tax literacy, students often struggle with understanding tax principles due to the abstract nature of tax laws and calculations. Existing educational tools lack interactivity and real-world relevance, resulting in passive learning and limited knowledge retention. There is a clear gap in the availability of gamified learning tools tailored specifically to the Malaysian tax system and aligned with local syllabus. Moreover, current solutions do not adequately address the needs of learners with different cognitive preferences and learning styles.

Gamification has been increasingly accepted as a teaching tool in higher accounting education (Queiro-Ameijeras et al., 2019) and in continuing education for accounting professionals (Surgent, 2022). Gamification provides an engaging learning environment that enhanced perception of the knowledge and improved performance (St Bernard, 2023). The most impactful features of gamification are that it provides immediate feedback, allows experimentation and freedom to fail, interactive user interface, and enhanced understanding through visual representation of process (St Bernard, 2023). Among the gamification benefits to the accounting students are higher levels of satisfaction as compared to traditional methodologies, the development decision making and teamwork skills and higher awareness accounting application due to immediate feedback provided on their decisions (Queiro-Ameijeras et al., 2019). In addition, gamification also creates an interesting accounting teaching and learning environment, encourages and subsequently increases critical thinking skill and increases comprehension on accounting knowledge (Rosli, Khairudin & Saat, 2019). It is suggested that an effective game should be part of different teaching methods such as introductory lectures and must be contextualized and integrated with prior-session and post-session information and activities (Scurati et al., 2023).

Prior studies have emphasized the effectiveness of gamification in higher education, highlighting improvements in student motivation, engagement, and performance. Research on tax education has also suggested that interactive learning methods improve conceptual understanding and real-life application of tax rules. For example, the use of simulations and role-plays has shown positive outcomes in accounting and finance education. Similarly, Novianto et al. (2024) mentioned that applying gamification, board games, metaverse and AI in tax education is a long-term process. Therefore, stages and processes are needed to develop the system. However, few studies have developed or tested comprehensive gamified tools with multiple formats tailored to tax education.

Therefore, this project introduces a multi-format gamified approach to tax education that uniquely blends pedagogy with technology. It is among the first to integrate a variety of interactive formats including AI avatars with voices, animations, and structured levels into one cohesive tax learning platform. The design addresses multiple learning styles, making it more inclusive and effective. Unlike single-format games, this product offers flexibility and diversity in learning paths, thus accommodating the varied preferences and cognitive needs of learners.

METHODS

This innovation project followed a design-based research (DBR) methodology. The development phase involved creating a suite of interactive games based on core tax topics such as personal income tax, business income, capital allowances, and Real Property Gains Tax (RPGT). The games were designed using various formats such as drag and drop, fill in the blank, progressive journey with obstacles, and real-life scenarios using AI characters and voices. Each game was structured into levels of difficulty, enabling scaffolded learning. The research method employed in this study involved the distribution of questionnaires to gather feedback regarding the game. The measurements in the questionnaires were adapted from the previous research conducted by Scurati et al. (2023). There are four sections involved in the questionnaire. Section A asked about the basic demographic profile of the students. Section B asked about the respondents' perception towards the tax game that consists of five components separately, with five questions each, rated on a 5 Likert scale ranging from (1) Strongly Disagree; (2) Disagree; (3) Neutral; (4) Agree; (5) Strongly Agree. These five components included gaming experience, system thinking, knowledge, awareness/attitude as well as openness and collaboration. Section C asked about the respondents' satisfaction towards the tax game while the last section asked about any comments from the respondents regarding the game for future improvement. A total of 101 responses were received from the participants. The descriptive analysis was used to summarize the data.

RESULTS AND DISCUSSION

Table 1 presents the demographic profile of the respondents involved in the survey. Based on this table, most of the students consist of female students, aged between 20 to 29 years old and have CGPA above 3.00 pointer.

Table 1.: Demographic Profile of Respondents

Gender of respondents:	Frequency	Percentage (%)
Male	29	28.7
Female	72	71.3
Age of respondents:		
Under 20 years old	0	0
20 – 29 years old	101	100
30 – 39 years old	0	0

40 years old and above	0	0
CGPA:		
Below 2.00	3	3.0
2.00 – 2.49	7	6.9
2.50 – 2.99	13	12.9
3.00 – 3.49	51	50.5
3.50 – 4.00	27	26.7

Figure 1 illustrates the feedback obtained from the students regarding their perception towards tax games. Based on these results, most of the respondents (95%) agreed and strongly agreed that they have experienced enjoyable and fun for the game. Besides that, they also agreed that the game was able to improve their level of understanding and increase their knowledge about taxation. In addition, many of them (93%) also believe that this game made them more aware and concerned about the importance of taxation for the country. In terms of openness and collaboration, most of the respondents (94%) agreed that the game allowed them to foster their collaboration skills, and they are also willing to share the experience with other students either from different or same course.

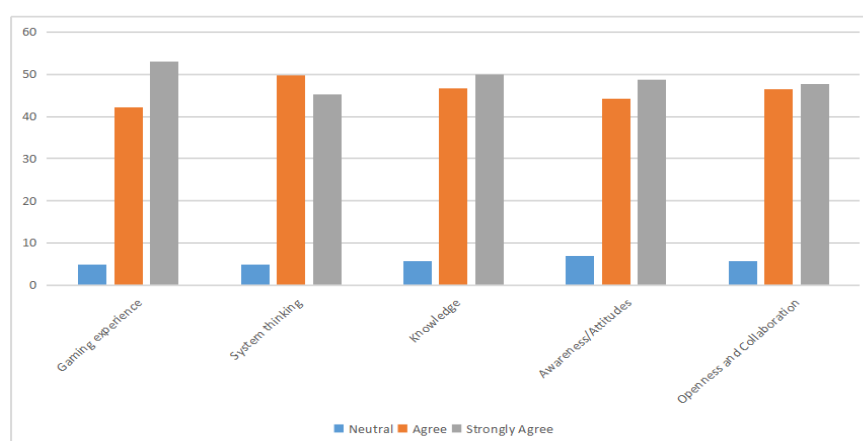


Figure 1.: Students' Perception Towards Tax Game

Figure 2 presents the results about the level of satisfaction among the respondents towards the game. Based on these results, it can be concluded that most of the respondents (88.1%) were satisfied with the game. However, there were some comments that we managed to gather throughout this survey. Among

of these comments include: (1) *I love how the game was created since it has a lot of information, and it was given in infographic types which makes students excited and easier to understand the topics. I would like to suggest putting the correct answer or information if the player choose the wrong answer so that they can learn and know the correct answer directly and learn from it,* (2) *The objective of the game is very clear, and it makes me easier to understand about tax. Other than that, by playing the game, it helps me to memorize better about the taxation topic,* (3) *This game is very fun, and the animation is very impressive. I personally think that I've learned so much regarding tax just from playing the game.* All these comments were important for us to improve the game in the future, especially in terms of design and content.

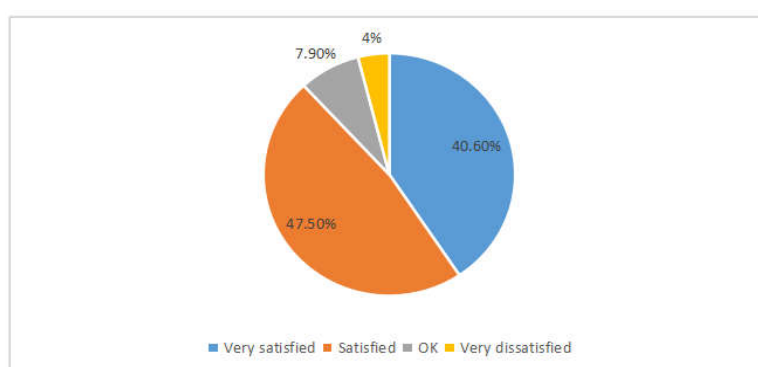


Figure 2.: Level of Satisfaction Towards Tax Game

CONCLUSION

This innovation project successfully demonstrates that tax education can be transformed into an engaging, interactive, and effective learning experience using multi-format gamification. By integrating game-based learning strategies, AI elements, and sensory-rich features, the platform addresses common learning barriers in tax education. The positive learning outcomes and enthusiastic feedback from students affirm the project’s impact and potential for broader application across educational institutions.

Integrating gamification into tax courses may address the challenges faced by students in studying tax, including the complexity of the subject matter and the lack of engagement. By offering an interactive and immersive learning experience, this multi-format tax game enhances understanding, promotes practical application, increases engagement and interest, encourages critical thinking, and facilitates knowledge retention. This innovative approach has the potential to revolutionize tax education, making it more accessible, enjoyable, and effective for students.

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REFERENCES

- Anwar, Y., & Mulyadi, M. (2025). Exploring gamification approaches in accounting courses: A systematic review. *Journal of Accounting and Finance*, 25(2), 24-33. <http://dx.doi.org/10.33423/jaf.v25i2.7610>.
- Kao, M. C., Yuan, Y. H., & Wang, Y. X. (2023). The study on designed gamified mobile learning model to assess students' learning outcome of accounting education. *Heliyon*, 9(2), 1-15. <https://doi.org/10.1016/j.heliyon.2023.e13409>.
- Novianto, S., Gayamanto, I., Sundjaja, A. M., Mailangkay, A. B. L. (2024). Smart Tax – The concept of gamification, board game & metaverse inside tax profiling to make taxpayers comfortable. *Media Jurnal Informatika*, 16 (2), 196-205. <https://doi.org/10.35194/mji.v16i2.4705>.
- Pillai, B., Pinge, H., Pol, A., Tembe, Y., Naware, R. (2025). Gamified learning as a tool for enhancing financial literacy among diverse age groups. *International Journal of Scientific Research in Science Engineering and Technology*, 12 (2), 612 -621. <https://doi.org/10.32628/IJSRSET25122178>.
- Queiro-Ameijieras, C. M., Martí-Parreño, J., Seguí-Mas, E., & Summerfield, L. (2019). A literature review of the use of gamification in accounting education. *Proceedings of the 12th International Conference of Education, Research and Innovation* (pp. 7662-7667). IATED. <https://doi.org/10.21125/iceri.2019.1822>
- Rosli, K., Khairudin, N., & Saat, R. M. (2019). Gamification in entrepreneurship and accounting education. *Academy of Entrepreneurship Journal*, 25(3), 1-6.
- Scurati, G. W., Kwok, S. Y., Ferrise, F., Bertoni, M. (2023). A Study on the potential of game based learning for sustainability education. *Proceedings of the International Conference on Engineering Design (ICED23)*, Bordeaux, France, 24-28 July 2023. <https://doi.org/10.1017/pds.2023.42>
- St Bernard, F. (2023). *Examining the impact of game-based learning on student engagement and performance in an introductory computer programming course at the University of the Southern Caribbean (USC)* (Doctoral dissertation, Lancaster University). <https://eprints.lancs.ac.uk/id/eprint/197286>.
- Surgent (2022). *Game-based CE courses make learning fun for professionals*. <https://www.surgentcpe.com/blog/gamified-ce-learning>