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A Board Game for The Study of Employment Income

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Abstract
This paper discusses on the needs and the process of developing a board game for employment income, which is a topic in a taxation course in an accounting program. The employment income is a complicated topic and has significant marks allocated in the syllabus. Therefore, it is vital for the accounting students to have a good comprehension in this topic. The board game is known as Spin N Go Board Game 2.0 uses the Serious Game Design Assessment Framework (SGDA Framework), established by Mitgutsch and Alvarado (2012) in its development. Six components make up this framework: the objective, the content, the framing, the mechanics, the fiction or story, and the aesthetics or graphics. In order to test for its validity, a number of students were invited to play the board game. A five-Likert-Scale survey using the SGDA Framework was constructed in order to sought feedback from the students. Among the feedbacks were this game was enjoyable and able to engage students more to learn the employment income. However, there was also a suggestion to make this game to be more complicated which indicates that this board game was too simple for undergraduates. In the future, more improvements will be carried out before the Spin N Go Board Game is suitable for commercialisation.
Keywords: Employment Income, Board Game, Taxation, Malaysia

Introduction

In a taxation paper for an accounting course at a public university in Malaysia, employment income is a topic that is covered. The topic is complicated since there are numerous items involved that are categorised under several Income Tax Act 1967 acts. Depending on the specific the employee's role and employment status, the topic also requires a complex computation. The student's comprehension is crucial to ensure they score on this topic because the employment topic makes up a significant component of the mark allocated to the Taxation paper. A board game called Spin N Go Board Game 2.0 for Employment Income was designed as a result of the teaching team's search for an alternate teaching strategy to improve students' understanding of the particular subject matter. In order to get input for improvement, the teaching staff also took the initiative to test the board game on a group of students.

Currently, many educators have developed and used games as a part of their teaching methods, but there is limited board game on the market for the subject of the Malaysian Budget, specifically employment income. Thus, this board game serves to fulfil the gap with the main goal is to develop a teaching tool that will assist students better understand the concept of employment income. The Spin N Go Board Game 2.0 for Employment Income can be used to teach employment income in interesting ways and help students learn and remember the material. Additionally, there may be opportunities for Spin N Go Board Game 2.0 to be commercialised in order to generate income. According to Kim et al (2020), who found that the market for board games with thematic and strategic elements was relatively underserved. From their analysis, the market of board games between the year 2013 and 2018 showed an exponential growth of popularity ranging between USD30,000 to USD80,000. Therefore, there is a potential for the commercialisation of this product once it is completed and ready to be used by the students.

Literature Review

Many previous studies showed the benefits of the use of game-based learning regardless of countries and type of courses. In general, students who used game-based learning in their learning activities had a better engagement, more motivated and had a better academic outcome. Luci et al (2019) developed a muscular system physiology among veterinar and pharmacy students in a university of Brazil. The samples were divided into tested and control groups. The researchers found that students who involved game-based learning in their learning activities improved their learning which was reflected in higher scores. Cardinot, and Fairfield (2019) also reported similar findings. They used game-based- learning on their students in the subjects of physics and astronomy in Ireland. Among the outcomes was enhanced knowledge among the samples after the game-based learning was implemented. Additionally, a positive attitude towards learning astronomy. The researchers also found that the game-based learning implemented had promoted social skills among students.

A study performed by Bangalee et al (2020) in a university of South Africa. A group of pharmacy students were used as samples. The researchers reported that there was an improved understanding as well as the students were able to apply their knowledge better. Additionally, other outcomes reported were the game also promoted knowledge sharing and collaboration among the students. Another positive outcome reported by Severengiz et al (2020) was an increased motivation in learning. The researchers used factory planning as the subject matter and the samples were bachelor students of a German university. Last but not least, Chen et al (2021) reported that the use of game-based learning improved creative problem-solving skills among their samples who were taking a course for chemistry in Taiwan.

However, an earlier study performed by Hanus and Fox (2015) had the opposite findings. The study showed that the students' academic performance was poor although game-based learning was used as part of the learning activities. The game involved all students and was implemented in the whole semester. Its rewarding system provided badges to the players. The plausible explanation for the contradict finding was the students' intrinsic motivation to learn deteriorating over time due to the rewarding system. Additionally, Chan et al (2021) reported that the students lack immersion in the game-based learning due to the trivia/quiz format being adapted in the game.

The positive output of game-based learning has been scrutinised by several researchers whether they really project the real situation. Pohl et al (2009); Marklund and Taylor (2016) argued that winning does not necessarily mean that the students had reached a mastery level

in the subject matter taught. Yet, it might only reflect their level of gaming proficiency. For instance, Pohl et al (2009) observed that a student who had a low level of gaming proficiency scored less than his counterparts. This was because he did not know how to play the game and not that he did not understand the subject matter. Additionally, Marklund and Taylor (2016) reported that students changed their tactic during the game-based learning for the sake of winning.

The Development of Game-Based Learning for Employment Income

Since there were mixed findings for the outcome of game-based learning, therefore the design of the game-based learning and its implementation must be executed carefully. Several adjustments have been made on our board game which is known as Spin N Go Board Game 2.0 for Employment Income. Nevertheless, the same framework was used in the later version, which is the Serious Game Design Assessment Framework (SGDAF) (Mitgutsch and Alvarado, 2012).

The SGDAF measures the effectiveness of a serious game according to six domains. They are purpose, content and information, framing, mechanics, fiction/narrative, and aesthetic/graphics. The purpose of serious games is to promote learning by means that players need to strategize and apply their knowledge to perform a specific task. Therefore, the design of the game is vital to achieving such objectives.

The Application of SGDAF in Spin N Go Board Game 2.0 for Employment Income

The application of SGDAF in this board game is summarized as follows:

Table 1
Application of SGDAF

Domain	Application in Spin N Go Board Game 2.0 for Employment Income
Purpose	The objective of the game is focused on improving students' knowledge and skills on the topic of Employment Income only.
Content and information	The information in the question cards is carefully examined to make sure it complies with the provisions for employment income as per Malaysian Income Tax Budget for the Year of Assessment 2021.Technical terms have to be used in the questions to ensure all information is valid and accurate.
Framing	The population for this game is Taxation students who already learned the topic of Employment Income.
Mechanics	Detail instructions are provided to the players as a guidance.
Fiction/narrative	Multiple characters and storylines are used in the questions.
Aesthetic/graphics	Colourful game board, cards, and pawns are designed.

Materials and Methods

This game consists of the Master and four players (maximum). The Master, a non-player, is responsible for reading aloud the game's rules and regulations, ensuring that everyone plays by them, shuffling the distraction and question cards, giving each player two distraction cards at random, and keeping the distraction and question cards used during play until the game is over. The game's components, rules, and restrictions are as described in more detail below:

Materials

The board game consists of pawns, a game board, a roulette, distraction cards, question cards and answers of the questions.

Pawns

Each player is represented by a pawn that is put on the game board.

A game board

There are 50 boxes on the game board, numbered from 1 to 50. Its design also has a lot of strokes of luck and bad luck. The purpose of the luck and misfortunes placed in the game board is to speed up or slow down how quickly players complete the game.

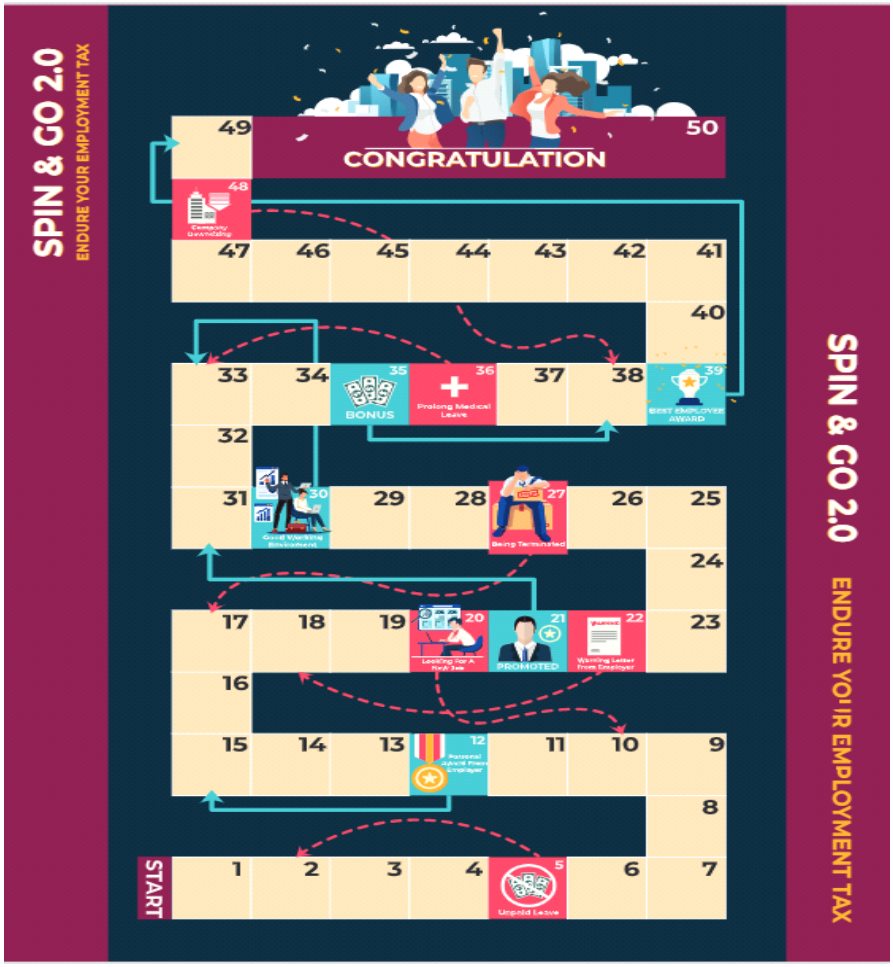

Figure 1: Game board of Spin N Go Board Game 2.0 for Employment Income

A roulette

There are two objectives for the roulette. Before the game starts, it is first used to assign turns to the players. The roulette is also used to decide how many boxes of pawns should be sent as incentives for right replies.

Distraction Cards

Eight distinct types of distraction cards are available. In general, players can utilise these cards to plan out their game-winning plans. In order to increase their chances of winning the game and to stall other players, they can use the cards.

Table 1
Distraction Cards

DISTRACTION CARD	QTY (UNIT)	PURPOSE
Freeze! Halt!	1 1	To inhibit a player from answering his question hence losing his turn.
U-Turn!	1	To reverse the prohibition on using the Freeze! or Halt! distraction cards when answering a question. The player who issued the Freeze! or Halt! distraction card will likewise receive the consequence from this distraction card.
Indestructible!	1	Immune to misfortune on the game board but can be used only once.
Double Luck!	1	Whenever a player correctly responds to a question, they are granted another turn.
Hello, 911?	2	If a player can't answer a question correctly, they are allowed to ask a non-player for assistance or consult any reading materials.
Disappointment!	1	A different player may reject a player's request for outside assistance in the same manner as described above.

Question cards

There are 60 question cards which contain questions in relation to the employment income as per Malaysian Income Taxation (Budget Year, 2021). The questions have two levels of difficulty which are beginner and expert.

The questions are printed on sturdy papers and the cards measure 7 cm x 3 cm. The questions are printed on one side of the cards, while the number of questions and a label indicating how difficult they are printed on the opposite side (beginner or expert).

Answers of the Questions

The players are not allowed access to the answers, which are printed separately. The solutions will only be available to The Master.

Methods to Play the Game

Rules and regulations of the game are as followed:

How to Determine Turns Among the Players

Each player must spin a roulette wheel before the game starts. Randomly chosen numbers between one and six will cause the roulette to stop. Player One will be the player with the highest number, and so on. Players will be seated so that the second player sits to the right of the first player, and so on.

How to Play the Game

The Master will begin by reading the rules aloud to each participant. The Master will next shuffle the distraction cards and deal two cards at random to each participant. Each player is required to keep their distraction cards out of reach of the other players. In order to identify Participants One, Two, Three, and Four, and their seating arrangements, The Master will later tell all players to spin a roulette.

The question cards will be put to the side of the board game after being shuffled by the Master. The rewards for the right response will be decided by Player One spinning the roulette. How many boxes he can advance his pawn on the board game will determine the prize. Player One will then select the highest card from the stack of question cards.

Before Player One responds, Player Two, Player Three, or Player Four may prevent Player One from responding by using the distraction cards Freeze! or Halt! In this case, Player One could choose not to respond to the question, in which case the question card will be put back into the stack of question cards. The Master must also receive the distraction card that reads "Freeze! or Halt!". The penalties may also be reversed and returned to the player who issued the Freeze! or Halt! distraction card if Player One possesses the U-Turn! distraction card. Player One may answer the question if neither Player Two, Three, nor Player Four uses the Freeze! or Halt! distraction card. Whether Player One's response is right or wrong, The Master will hand over and hold onto the question card until the game is over.

The Master would verify if the response was accurate or not. If the response is accurate, Player One may advance his pawn in accordance with the rewarding mechanism. If the response is incorrect, Player One may use his Hello, 911? distraction card to get assistance from a third party or consult any reading material in order to answer correctly on his subsequent try. Other players who have the Disappointment! distraction card may supersede the Hello, 911? distraction card. If Player One fails his second attempt or does not use/have the Hello, 911? distraction card therefore his pawn will stay on the same box on the game board.

If Player One gets a right answer on his first try in Round One, he can also utilise the Double Luck! distraction card to get another chance.

Players Two, Three, and Four must adhere to the same rules and guidelines until all players have reached the board's finish (box no. 50), or until all question cards have been answered.

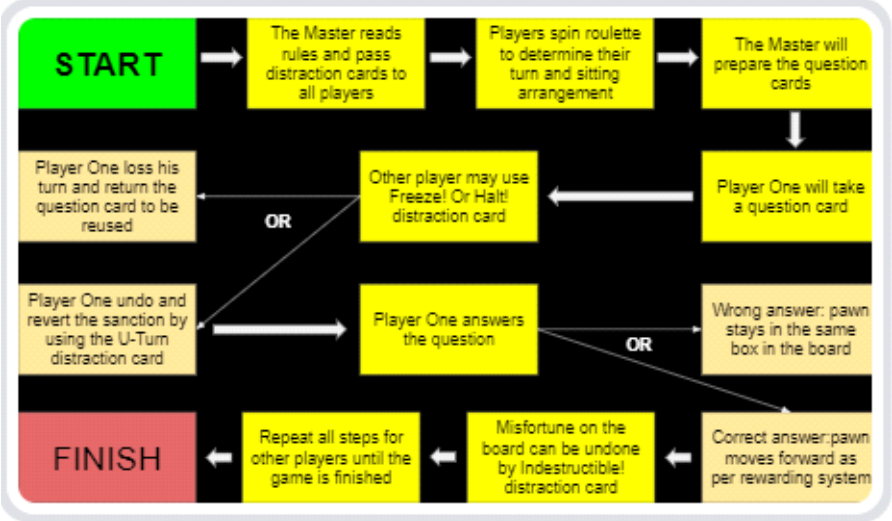

Figure 2: The Summary of Flow of the Spin & Go 2.0

Rewarding System

Correct responses, the difficulty of the questions, and the value achieved after the roulette wheel has been spun are taken into account in the rewarding system.

When their answers are accurate, players are only permitted to advance their pawns. They will keep their pawns in the same box on the board game if their replies are incorrect.

How to Determine the Rewards

Prior to answering the questions listed on the question cards, players must first spin the roulette. Any number between one and six will be displayed on the roulette wheel's dial. This will affect how many boxes a player's pawn can advance in the board game.

Players are permitted to advance their pawns in accordance with the number displayed in the roulette if they are able to correctly respond to a question from the beginning level. The players may, however, move their pawns according to the number given in the roulette with one additional box on the board if they properly respond to a question from the expert level.

How to Determine a Winner

The winner of the game is the first person to reach box number 50, or the game is end. Until all question cards have been answered or until all other players have taken their turns, the game may continue.

Methodology of Data Collection

A survey with five-Likert-Scale was constructed with the range between 1 (strongly disagree) to 5 (strongly agree). Six domains of the SGDA Framework were measured in this survey. They were purpose of the game, content and information, mechanic of the game, fiction/narrative, framing and aesthetic/graphic of the board game.

Convenience sampling was used in the selection of samples. They consist of students who already passed the taxation paper in the previous semester Students of the current semester were not available for sampling because by the time the data were collected, they had not learned this particular topic yet.

Results and Discussion

Playing games enables kids to take ownership of their own learning and develop a sense of teamwork. Studies have shown that students that play games are more inclined to study, pay attention, and take part in assigned tasks. Additionally, they can also be an excellent tool for managing the classroom and inspiring the students. Therefore, the Spin N Go Board Game 2.0 for Employment Income was created to provide students with a fun approach to learning about employment income. The game was created using the following criteria: purpose, content and information, mechanics, fiction/narrative, framing, and aesthetics/graphics.

Purpose of the game

This game is competitive and tough since players must use their knowledge and skills in order to advance and win. The students that took part in the game testing provided encouraging feedback and expressed excitement about achieving the right answer to move on. According to the results of the survey, the majority of the respondents conclude that this game, as opposed to the conventional approach, can help people learn and grasp the subject of employment income. This is consistent with the game's goal and the study done by (Luchi et al., 2019).

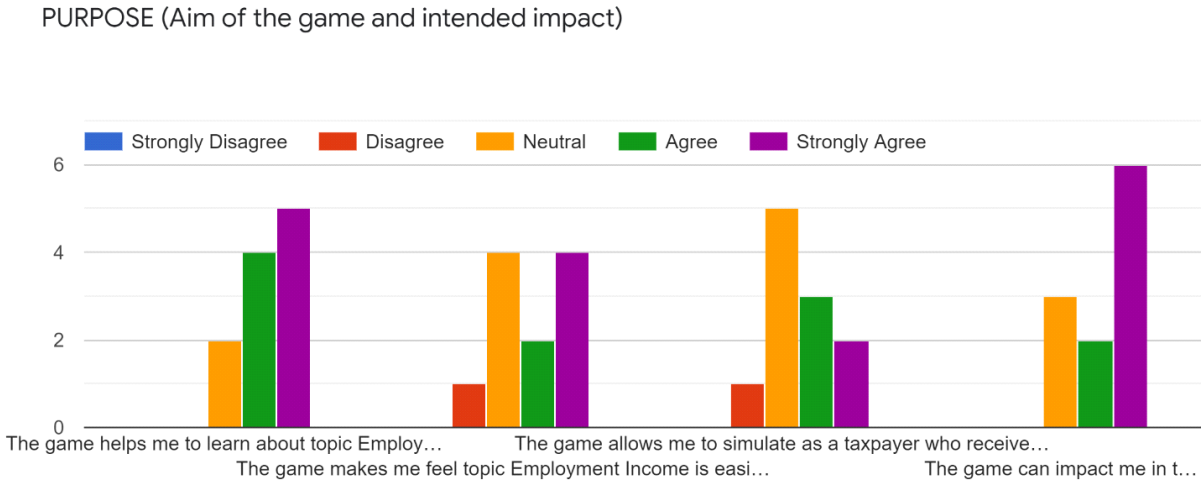

Figure 3: Purpose of the game

Content and Information

The Government of Malaysia presents federal budgets every year in Malaysia in order to outline planned government income, and expenditures, and forecast economic circumstances for the following year as well as its fiscal strategy for the years ahead. The government's projected revenue and expenditures are included in the federal budget, which may also incorporate new policy initiatives. Therefore, this game's content was created using the most recent budget provided by the Inland Revenue Board of Malaysia (IRBM). In general, the questions are separated into two groups: beginner and expert. This game's question covers the course material listed in the syllabus, which calls for students to calculate and make decisions. Additionally, the content includes details that are crucial for the learner to learn and master the subject of employment income. According to 91% of the respondents, the game instructions' content is simple to understand and the language is approachable for players, which is consistent with earlier studies (Mitgutsch and Alvarado, 2012; Luchi, Cardozo and Marcondes, 2019). Nevertheless, some of the respondents discovered that some of the words used in the question needed to be simplified to fit their level of comprehension.

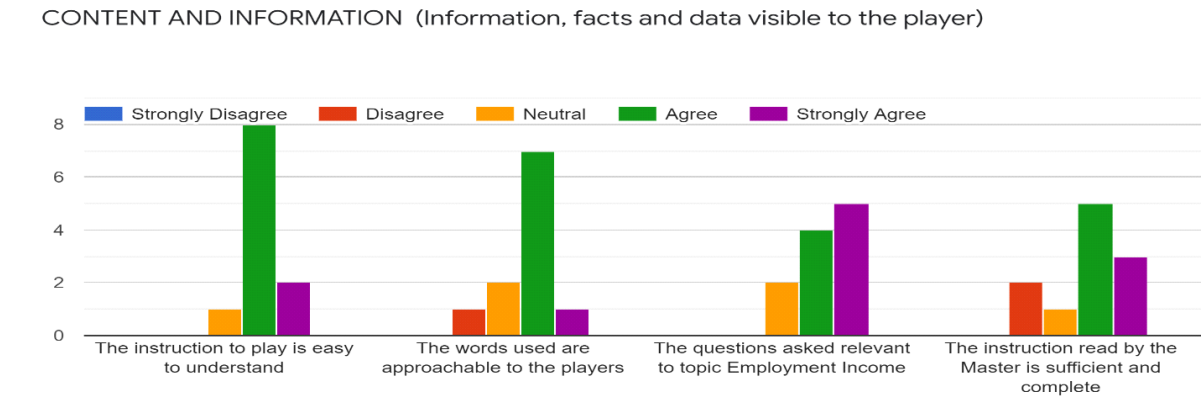

Figure 4: Content and information of the game

Mechanic

Alwi et al (2020) assert that a game's mechanics include its rules, reward structure, and challenges. The game will be designed with more rewards and obstacles as it becomes more difficult. The players will be inspired when they receive rewards since they can advance more quickly than the other players, but they will become discouraged when they encounter barriers. In other words, compared to playing games where the result is predetermined, the game will be more fascinating when the players must abide by the game's rules and probabilities. The results showed that the respondents approved of the game's flow and reward structure. 90% of respondents felt that the distraction cards employed in this game made it more adventurous and demanding, according to the chart in Figure 5.

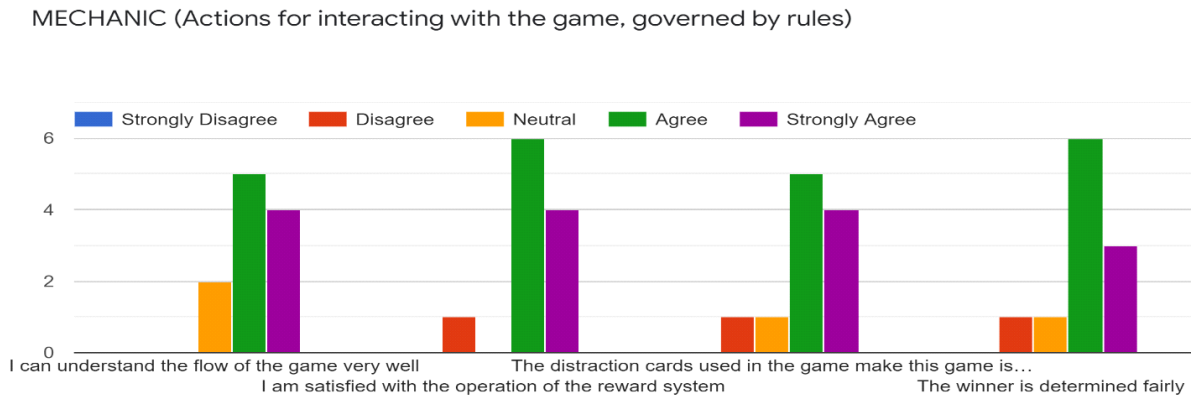

Figure 5: Mechanic of the game

Fiction/Narrative

Figure 6 shows that 80% of respondents concurred that the game accurately depicts the environment of employment income in real life, including the calculation of salary, bonuses, and other benefits obtained during employment time. The other 20%, however, disagreed that the game's point of view accurately depicts a real-world scenario. Therefore, the questions created in the future might be enhanced by taking into account the most recent and updated facts to replicate real-life circumstances.

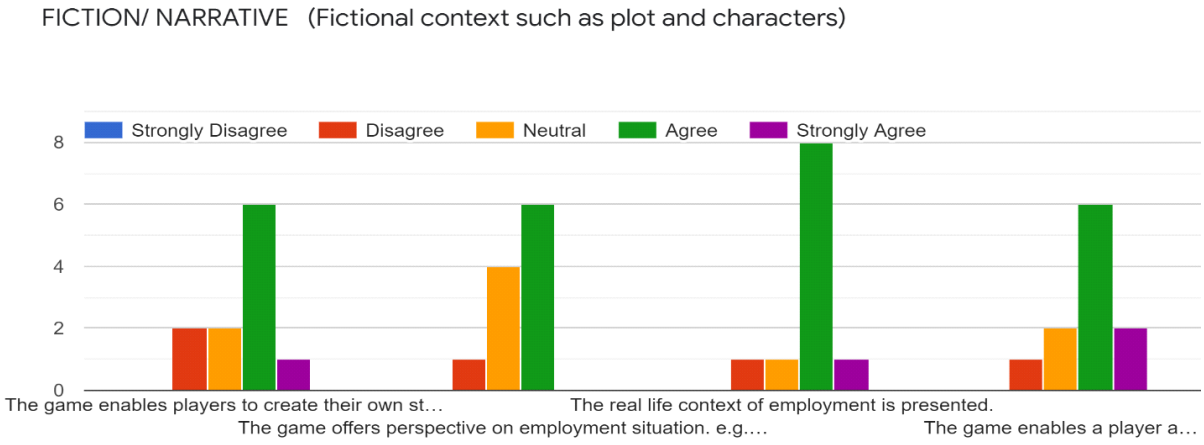

Figure 6: Fiction/Narrative of the game

Framing

The framing of a game indicates how effectively it caters to the intended audience and their level of play literacy. Because their level of literacy is so important, choosing the right target group will help the game's goal (Alwi et al, 2020). The study's findings showed that 91% of respondents concurred that this game gives taxation students a fair and enjoyable gameplay experience. The game is most critically appropriate for their level of knowledge regarding employment income.

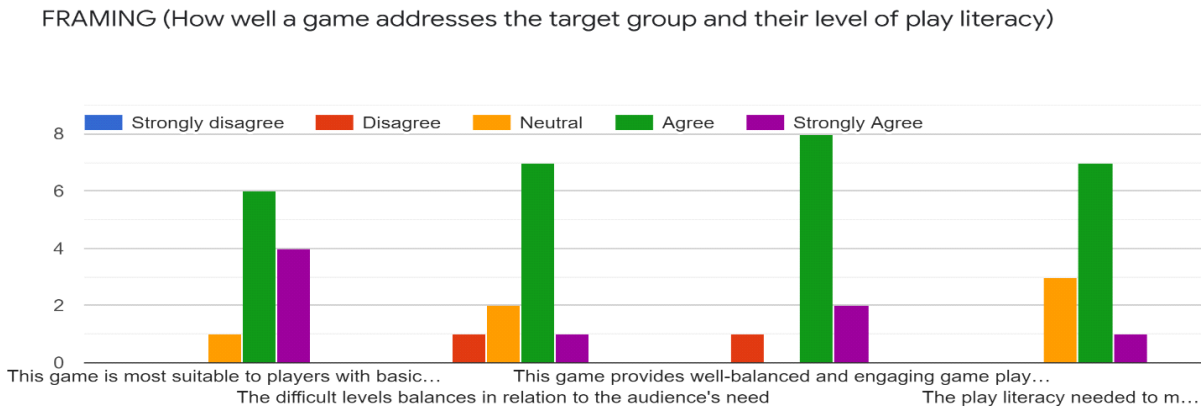

Figure 7: Framing of the game

Aesthetic/Graphics

In accordance with Mitgutsch & Alvarado (2012), aesthetic refers to graphic design, which is significant since it has the ability to reflect the game identity and motivate players to decide why they are playing a certain game. Only 50% of respondents agreed with the conclusion that the game's design is attractive, while the other 50% disagreed. This suggests that the existing game's sensory representation is not engaging enough to draw players in. As a result, this discovery may be applied to future iterations of game graphics.

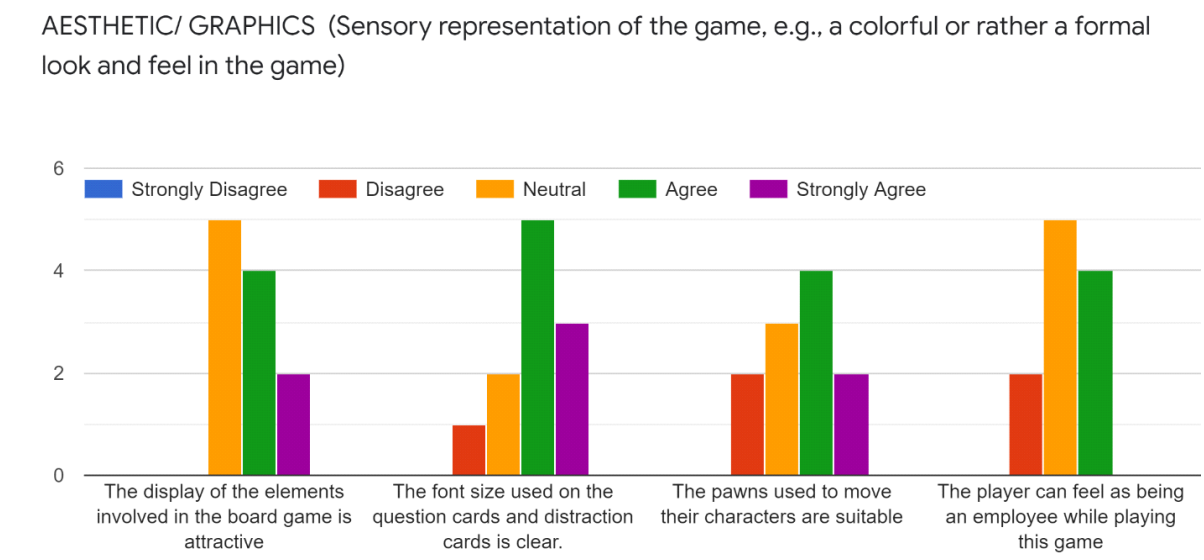

Figure 8: Aesthetic/Graphics of the game

Students' Feedback

Both the favorable and unfavorable comments received from respondents are crucial for the game's future development. Figure 8 demonstrates that 90.9% of those surveyed were pleased with the game. Following are some comments made by the students regarding the game:

- "This is a fantastic method for students; however, it depends on someone's learning style,"
- "This game, in my opinion, is a pleasant approach to discuss employment income. Please prepare the appendix so that it can be used to calculate advantages that call for us to consult the appendix table."
- "I believe this game needs more barriers to make it harder," the player said.

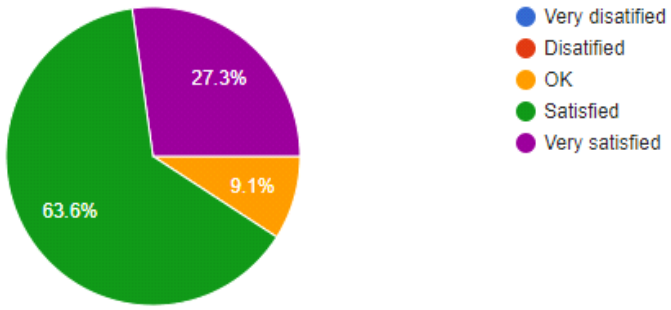

Figure 9: Overall students' feedback

Conclusion

Individual income tax has significantly increased Malaysia's revenues. Given the significant impact that employment income has on Malaysia's tax system, individual taxpayers must be aware of the extent of their employment income whether it is taxable or not. Gaming can be utilised in education as a learning tool because it can increase students' motivation and visual skills and allow them to apply what they have learned in a real-world environment. Spin N Go Board Game 2.0 for employment income is based on a real-life lesson to instruct and inspire students to use the concept of employment income in the context of the board game. This game was created using the Serious Game Design Assessment Framework (SGDA Framework), which was introduced by (Mitgutsch and Alvarado, 2012). The purpose, the substance, the framing, the mechanics, the narrative or tale, and the aesthetics or visuals are the six elements that make up this framework. The ability to calculate taxable employment income and differentiate between taxable and non-taxable income will be recognized by the participants. According to student feedback and learning assessments, using this game as a light-hearted replacement for the traditional method of learning about employment income is a great idea. In the future, there are more studies need to be carried out for several issues. For instance, further studies using the game need to be carried out in order to test the effectiveness of the board game in enhancing students' understanding and to obtain suggestions for improvement. This is also to address the conflicting findings on game-based learning that previously stated.

References

Alwi, F., Mansor, N. A., Shamsudin, S. M., Baharom, S. N., & Khalil, M. I. (2020). The Design of Spin N Go Board Game as a Game-Based Learning for Employment Income, Proceeding of the 36th International Business Information Management Association (IBIMA), 5446-5455.

Bangalee, V., Oosthuizen, F., Perumal-Pillay, V. A., Suleman, F., and Walters, F. (2020). Pharmacy Students Experience with PharmacyPhlash - A Pilot Educational Board Game. Currents in Pharmacy Teaching and Learning Vol. 13, pp. 292-301.

Cardinot, A., and Fairfield, J. A. (2019). Game-Based Learning to Engage Students with Physics and Astronomy Using a Board Game. International Journal of Game-Based Learning (IJGBL), 9(1), pp. 42-57. doi:10.4018/IJGBL.2019010104

Chan, K., Wan, K., and King, V. (2021). Performance Over Enjoyment? Effect of Game-Based Learning Outcome and Flow Experience. Original Research, Vol.6. pp. 1-10. doi: 10.3389/feduc.2021.660376.

Hanus, M. D., and Fox, J. (2015). Assessing The Effects of Gamification in The Classroom: A Longitudinal Study on Intrinsic Motivation, Social Comparison, Satisfaction, Effort and Academic Performance.

Chan, K., Wan, K., and King, V. (2021). Performance over Enjoyment? Effect of Game-Based Learning on Learning Outcome and Flow Experience. Frontiers in Education, Vol. 6. pp. 1-10.

Kim, J., Wi, J., Jang, S., & Kim, Y. (2020). Sequential Recommendations on Board-Game Platforms. Symmetry, Vol. 12(2), 1-15.

Luchi, K. C. G., Cardozo, L. T., and Marcondes, F. K. (2019). Increased Learning by Using Board Game on Muscular System Physiology Compared with Guided Study. AJP Advances in Physiology Education. 43(2), 149-154.

Marklund, B. B., and Taylor, A-S.A. (2016). Educational Games in Practice: The Challenges Involved in Conducting A Game-Based Curriculum. The Electronic Journal of e-Learning Vol. 14(2). pp. 122- 136.

Mitgutsch, K., & Alvarado, N. (2012). "Purposeful by Design? A Serious Game Design Assessment Framework," Proceedings of the International Conference on the Foundations of Digital Games, 121-128.

Pohl, M., Rester, M., and Judmaeir, P. (2009). Interactive Game Based Learning: Advantages and Disadvantages. Springer. pp.92-101.

Severengiz, M., Seliger, G., KrUger, J. (2020). Serious Game on Factory Planning for Higher Education. Procedia Manufacturing 43, 239–246.