Enhancing Learners' Financial Literacy Through Game-Based Learning: Pilot Testing at Two Primary Schools in Perak

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Abstract. This study aims to enhance primary school learners on the financial literacy through game-based learning and assess their efficacy of saving and spending in daily life. The participants were 77 learners from two selected primary schools in Perak, 42 from school A and 35 from school B, respectively. This study employed game-based learning integration through exploring Malaysian Ringgit notes, categorizing the needs and wants items, exploring various shopping catalogues, playing modified version of cash flow game, comparing the price between three stores, and carrying out quizzes related to payment cards, saving and spending. Data was gathered through assessments at each game station, question and answer sessions, observations, and interviews with the learners before and after the games. Upon four workshops with game-based learning integration conducted within ten months, the findings revealed that learners can differentiate between the needs and wants items. In addition, more than 95 percent of them know that each item has its own value and unable to be exchanged easily using other items, as well as able to compare the quantity with the item's value to ensure the items is value for money. In conclusion, feedback from the school was positive implying that game-based learning intervention is able to enhance learners with knowledge on financial literacy.

Keywords: Financial Literary, Game-based Learning, Cash Flow Board Game, Credit Card, Debit Card.

1 Introduction

In recent years, the importance of financial literacy has gained significant attention globally, with a particular focus on early education. Despite these efforts made by relevant parties, financial literacy remains a persistent challenge among learners in Malaysia. According to the Financial Industry Collective Outreach (FINCO, 2023), most upper secondary school learners demonstrate only low to medium levels of financial literacy, signalling a pressing need for improvement.[1]

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This concern was highlighted by Deputy Finance Minister I, Datuk Seri Ahmad Maslan, during the Financial Literacy Programme "Kembara Bijak Wang 2023" (KBW2023), where he emphasized the urgent need to enhance financial literacy efforts at the school level[2]. He asserted that improving financial literacy in schools is essential to prevent future generations from falling into financial instability. Furthermore, this initiative serves as a strategic approach to enable more Malaysians to achieve financial independence and avoid the low-income traps that have long-term socioeconomic consequences.

Game-based learning (GBL) has emerged as a promising pedagogical tool, providing an engaging method to simplify complex concepts and make learning more enjoyable for younger learners. The study suggests that the integration of games into the curriculum can significantly enhance learners' understanding and retention of financial knowledge[3]. Therefore, this study investigates the potential of GBL to improve financial literacy among primary school learners in Perak state, Malaysia with the aim to equip them with the critical skills necessary for managing personal finances effectively.

2 Literature Review

2.1 Financial Literacy

Financial literacy encompasses the skills and knowledge that enable individuals to make well-informed and effective financial decisions with their available resources[4]. A financial literate individual possesses a variety of abilities and attitudes, including an understanding of fundamental money management concepts, knowledge of financial institutions, systems, and services, and analytical skills[5]. Low levels of financial literacy among consumer credit users contribute to over-indebtedness analytical skill[6]. Those who exhibit impulsive spending habits are more likely to sacrifice their future financial security when confronted with sudden financial upheavals[7]. Having food financial literacy has a positive impact on saving and spending behavior[8]. Therefore, improved financial literacy positively influences better financial decision-making and fosters healthier saving and spending behavior[9]. Furthermore, individuals with higher financial literacy are more willing to effectively manage their finances and plan for future needs[10]. In addition, a financially literate individual can manage debt effectively and worry less about debt repayment[11]. This knowledge empowers them to make informed financial decisions and take control of their financial future[12].

2.2 Game-based Learning

Learning in the form of a game is one of the oldest and most useful pedagogical ideas that has been applied throughout the history of mankind[13]. It engages learners by making the process enjoyable and interactive, leading to better retention of information and skills[14]. This approach has been utilized in a variety of educational settings, from early childhood education to professional training programs, and remains as an effective method for promoting active learning[15,16]. In today's technologically advanced educational landscape, game-based learnings involve using digital or non-digital games to enhance student's knowledge and skill acquisition. However, there is no significant difference found between digital and non-digital game groups except learners of the digital game group who showed significantly higher self-efficacy than those of the non-digital game group[17]. One of the popular traditional game-based learning methods is role-playing, in which participants take on roles and enact scenarios by immersing themselves to practice communication, problem-solving, and decision making in a controlled environment[18]. Moreover, simulation games offer learners a valuable opportunity to gain insight into real-world situation and enhance their practical skills. By immersing themselves in simulated experiences, learners can apply theoretical knowledge to practical situation[19]. In this study, game-based learning incorporates various non-digital forms such as role play, the cash flow game, the comparison game, and the station game.

3 Methodology

3.1 Research Design

This study employs game-based learning as a gateway aiming to enhance learners' financial literacy at two primary schools in Perak, Malaysia. Various activities with integration of game-based learning and sharing sessions were performed from January to October 2023 with four workshops held in each school respectively.

3.2 Participants involved

Participants were 77 learners from two selected primary schools in Perak, 42 from school A and 35 from school B respectively, upon obtaining approval from the respective schools. The same group of participants attended the four workshops held from January to October 2023.

3.3 Intervention Procedure and Timelines

Game-based learning was implemented through various activities held with four workshops for each school respectively from January 2023 to October 2023. In January 2023, the first workshop started with an introduction to money, emphasizing the importance of personal financial management, the barter system, and an exploration of Malaysian Ringgit notes. In addition, an interview session was conducted with the learners to gather insights into their daily spending and saving habits. A role play activity was designed for the learners to enhance learners' understanding about the barter system. During the activity, several items, such as a cow, chili, rice, vegetables, and fish, were drawn on manila cards. These items were used as teaching tools for the role-play exercise.

Fig. 1: Introduction of Money

Fig. 2: System Barter and Exploring

Three months after the first workshop, in April 2023, the researchers conducted a follow-up visit to both schools for the second workshop. A recap session on the previous workshop was done, followed by an introduction to payment cards for the learners. Various games were designed for the second workshop including identifying needs and wants items and exploring various shopping catalogues to compare the prices, quality and quantity of the items within three to four shopping outlets. The workshop concluded with a reflective session where learners shared their thoughts and insights on the activities conducted during these two workshops. Items with price tags were displayed on two manila cards as part of the "Needs and Wants" game. Learners were given 10 minutes to choose the items they wish to purchase and write it on a piece of paper provided. Next, they were asked to compute the total expenses of the chosen items.

Next, an activity was conducted where participants compared the prices of several products across various grocery outlets, such as Lotus, Econsave, Aeon, Aeon Big, using catalogues obtained from these stores.

Fig. 3. Identify Needs and Wants

Fig. 4. Comparison in 3P

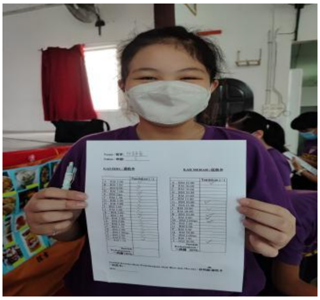
Third workshop was held after three months of the second workshop in July 2023. Similarly, a recap session of the previous workshops was held. Learners were allocated into five to six members in a group for a modified version cash flow game designed by the researchers. Observations was conducted by the researchers to assess how the learners reacted to the various situations presented in the cash flow game board. The game session concluded with the sharing session where the learners reflected on and shared their experience of playing the cash flow game. The playing boards were equipped with the components such as investments, earning income by helping parents, teachers, doing housework and engaging in charity work.

Fig. 5. Cash Flow Game

The final workshop was held in October 2023 in both schools. All the sharing session and activities performed throughout the programme were reconducted in a station game version. Learners were allocated into five to six members in a group for station game activities. Four station games were implemented, including identifying needs and wants items, comparing prices across three stores, computing saving and spending based on the situation given, and finally answering quizzes related to the lessons learned during the first to third workshops at the quiz station. Interview sessions were conducted to obtain learners' feedback on this financial literacy program.

Fig. 6. Station Game

Fig. 7. Interview Session



4. Discussion

There are few outcomes obtained throughout the game-based learning at two primary schools in Perak. As for the primary school learners, more than 90 percent of them have saved their pocket money in the coin box provided in the first workshop. Furthermore, more than 50 percent of the learners were able to differentiate between needs and wants items after the detailed discussion in the second workshop. They are also able to compare the value and worthiness of the purchase. Moreover, they understand the value of each item and recognize that these items cannot be easily exchanged for other items. Hence, they learned that money is important as a medium of exchange. The findings of this study are supported by Angela and Pamungkas (2022), highlighting the crucial role of financial awareness in enabling individuals to exercise self-control and make informed decisions about saving and spending[20]. This is particularly important as money is a limited resource that requires careful management. Therefore, being aware of financial situation and making conscious choices can lead to more effective money management. In the third workshop, learners acquired an understanding of the importance of saving, spending and investing through the modified version cash flow games designed by the researchers. The findings of this study are also supported by Setiawan et al. (2022), indicating that improved financial literacy leads to better financial decision-making and prudent saving and spending habits[21]. These findings highlight the essential role of improving financial literacy in attaining greater financial well-being and stability.

5. Implications and Conclusion

This study presents critical implications for key stakeholders, including the government, educators, and parents. The Ministry of Education, alongside Bank Negara Malaysia, plays a pivotal role in promoting financial literacy among primary school learners by initiating nationwide programs, such as providing savings boxes to cultivate early saving habits. Furthermore, the government should prioritize the development of a financial literacy syllabus, integrating it into the national curriculum. This ensures that all primary school learners receive comprehensive and consistent financial education from an early age, thereby establishing a strong foundation for future financial independence.

For primary school teachers, adopting innovative teaching methods, such as game-based learning, can be transformative. Hands-on and interactive activities in the classroom help learners grasp financial concepts more vividly and retain this knowledge long-term, as experiential learning has been shown to improve understanding and retention. In alignment with this research, primary school teachers could collaborate with universities to organize periodic financial workshops and seminars, allowing learners to access the latest financial knowledge.

Additionally, learners also play an essential part in shaping their own financial behaviors. By actively engaging in age-appropriate financial decision-making both in the classroom and at home, they can develop greater confidence and awareness in managing personal finances. Taking responsibility for their own savings, budgeting, and spending help learners cultivate a sense of ownership over their financial choices. This hands-on involvement not only reinforces their learning but also fosters the development of critical self-control and informed decision-making. With the proper support and opportunities, learners can build strong financial habits, ensuring a solid foundation for lifelong financial well-being.

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