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Enhancing Understanding of Riba in Islamic Finance: An empirical study of a gaming intervention

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Abstract

In this paper, a card game called "Name the Riba Transaction!®" is introduced and used to enhance understanding of Islamic finance principles among students. With the rapid growth of the Islamic finance industry (15-20% annually), there is an urgent need to produce trained professionals to meet the industry's demand. This paper introduces an educational game on Riba and evaluates players' experience and performance after participation. Findings found that players' understanding of Riba improved after playing the game, indicating its potential as an educational tool to be part of a standard used in Islamic Finance programs.

Keywords: Islamic Finance; Riba; Game-learning; Financial Literacy

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1.0 Introduction

The global Islamic finance industry is experiencing remarkable expansion, with projections estimating assets to reach US\$6.67 trillion by 2027 (ICD-LSEG, 2023). This growth is driven by both Muslim and non-Muslim consumers who are drawn to the Islamic Finance ethical framework and resilience against financial shocks (Alisic, Salihi, & Dinc, 2024; Bitar, Madiès, & Taramasco, 2017; Shahariman, Asari, Sulaiman, & Marzuki, 2024). The critical need for qualified professionals in the Islamic finance industry necessitates the expansion of Islamic economics and finance programs at educational institutions worldwide, though there is still no exclusive teaching standard (Billah, 2022; Yilmaz, 2024). This lack of understanding surrounding Islamic finance may also significantly hinder the industry's growth and broader acceptance.

The fundamental understanding of Islamic finance principles, particularly the prohibition of riba (usury), remains limited among the general public (Alisic et al., 2024; Apriantoro, Faradilla, Putri, & Murtadla, 2024), especially when the terms used are in another foreign language, and in this case, Arabic (Zulkefli & bin Jamil, 2024). 'Ar-Riba', based on the verses in the Qur'an, stems from the Arabic word

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'Raba' which literally means 'to grow' or 'to increase'; and this equates to the premium charged above the lending amount based on the system practiced during the period before the revelation of Quran to the Prophet Muhammad SAW (Benazeer, 2025; Iqbal & Mirakhor, 2011). This paper addresses this critical issue by demonstrating how "Name the Riba Transaction!®," an engaging board game designed as part of a teaching method to help clarify the concept of riba to students (and players alike), can effectively promote understanding of the Islamic principles.

2.0 Literature Review

Islamic finance can be seen as a potential reform agenda for conventional finance, paving the way for significant monetary changes in existing economic systems (Basalma, 2024; Wahyuni & Soumena, 2025). Understanding the principles of Islamic finance is crucial, and this knowledge should be integrated into the higher education sector. However, difficulties in grasping the basic concepts of riba have posed challenges in applying Islamic finance in the daily lives of the general public. The key to overcoming these challenges is to develop educational tools that enhance undergraduates' understanding before they enter the real financial world.

Islamic finance is distinguished by its economic paradigm to abide by the belief system of one Creator, the lives of prophets sent to humankind and that everything will be accounted for and judged by the Creator during Judgement Day (Iqbal & Mirakhor, 2011); hence, the financial service rendered will have to comply to the Creator's law and principles, or Shariah in Arabic. The sources of the law must be derived from the Al Quran and the sunnah of the Prophet Muhammad (pbuh), while in the absence of these two primary sources, other secondary guidelines will be referred to such as by ijma (consensus of Islamic scholars), qiyas (analogical deduction), and more. It is understood that all Islamic financial businesses and transactions must be free from any elements of riba (interest), maysir (gambling), gharar (major ambiguity), and trading of prohibited products in Islam, such as pork and alcohol, risk-sharing, and equitable economic as well as ethical conduct (Awais, Öztürk, Bhatti, & Ellahi, 2024; Ghazilan & Mallow, 2024).

2.1 The concept of riba in Islamic finance

Generally, there are two types of riba, as explained by Chapra (1984), which are called riba al-nasi'ah and riba al-fadl. The term 'nasi'ah' is derived from the Arabic root 'nasa'a', meaning to postpone, defer, or wait, and refers to the additional time granted to a borrower to repay a loan, in exchange for a 'premium' or 'addition' to the principal amount; or in short the equivalent to the interest charged on loans. Riba al-fadl, on the other hand, is more complex to define in a single sentence. It involves a broad range of business transactions and practices where goods of the same type are exchanged, but the quantity or quality varies. Additionally, riba al fadl can also manifest in the form of injustices or exploitations, which require the absence of any manipulation, uncertainty, or speculation.

According to Islamic scholars, riba is a prohibited practice that exploits the borrower and violates the principles of equitable risk-sharing and profit-loss participation (Suharto, 2018). Riba is considered unethical and unjust because it allows the lender to earn a guaranteed profit without sharing in the risks or potential losses of the transaction. This contradicts the Islamic principles of shared responsibility and mutual benefit, where both the lender and borrower are expected to share in the outcomes, whether positive or negative. The prohibition of riba is rooted in Islamic teachings that aim to promote social and economic justice and prevent the accumulation of wealth among a few at the expense of the many. The Arabic term 'riba,' originating from the primary sources of Islamic literature, including the Al-Quran, is widely used in financial products globally, even outside Arab nations.

'And if you do not [give up demanding riba], then be informed of a war [against you] from God and His Messenger. But if you repent, you may have your principal-[thus] deal not unjustly and you shall not be dealt with unjustly.' (Al Quran, 2:279)

The challenges in understanding the different types of riba play a major role in how this concept is applied in everyday life. This lack of comprehensive knowledge about the different forms of riba has hindered the widespread adoption and application of the Islamic finance principles that prohibit such practices. To bridge this knowledge gap, it is crucial to introduce educational tools that effectively communicate the concepts of Islamic finance and riba. This need is especially urgent in global financial literacy, where traditional teaching methods have often failed to effectively engage and inform the public (Abdullah & Chong, 2014; Yilmaz, 2024).

2.2 The need for educational tools

The definition of gamification or game-based learning is to create a situation among the players of "game-like feelings" (Wiggins, 2018), in which the scenario will engage them directly in a specific way of what the game creator aims for (Dicheva, Dichev, Agre, & Angelova, 2015). Game-based learning has emerged as a promising approach to enhance the understanding of complex theoretical concepts, going beyond traditional classroom or explanation-based teaching methods. By incorporating interactive and engaging game elements, learners can actively participate in the learning process, fostering a deeper comprehension of the subject matter (Alamri, 2024; Krath, Schürmann, & Von Korflesch, 2021), even so when it involves the Arabic language (Zulkefli & bin Jamil, 2024). The interactive nature of game-based learning allows individuals to actively engage with the concepts, experiment with different scenarios, and derive insights through hands-on experience. This active participation promotes better retention of the information and a more nuanced understanding of the underlying principles, compared to passive learning approaches. Moreover, the element of fun and entertainment in game-based learning can stimulate learners' interest and motivation, making the process of acquiring complex financial knowledge more enjoyable and effective (Debit, Bacoba, Tabanao, & Walag, 2024).

A successful game-based learning framework must apply educational theories to game design. A paper by Shafii et al. (2018) on "Educating Children on Financial Management Using an Interactive Tool: A Case Study on Product Development Stages for Muamalat Interactive Game" states various elements in the development process of a muamalat game. The authors propose that the game development framework be conceptualised as a systematic learning system, incorporating key features such as learning theory, objectives, outcomes, instructional design, game mechanics, and sustainability factors. This holistic approach aims to enhance the effectiveness of the game-based learning experience. By incorporating these principles into an interactive gaming environment, players developed a more nuanced understanding of Islamic finance and its role in fostering inclusive economic development (Alamri, 2024).

This paper extends the research of Banchit, Zainuddin, and Lai (2021), who initially explored the "Name the Riba Game" with a small group of six students. Their focus group research suggested that the game-based learning approach improved participants' understanding and practical application of core Islamic principles through engaging case studies in a competitive setting. This study builds upon these findings by increasing the number of players and incorporating enhancements to the game design. The primary contribution of this paper lies in its expanded investigation of how this game-based approach can effectively address the persistent knowledge gap surrounding riba and other Islamic finance concepts, enabling players to confidently apply these principles in practical contexts.

3.0 Methodology

In this game, the method adapts the style of the 'cup and sticks' game, which was innovated by Zainuddin, Banchit, and Lai (2020) (Name the Numbers!). Further enhancement of the existing and replicating elements in the game for a more engaging experience (Banchit et al., 2021). To play the game, the players will pick up a card with the assigned numbers and then place it in the correct cup with sticks to attain marks. Ultimately, the player with the highest score will be declared the winner. In their pre- and post-analysis data of players playing this game, their findings have shown statistically significant differences in the players' results before and after playing the game, which suggests a better level of understanding of the concepts tested.

Name the Riba Transaction!® game has added another element of challenge where the game will not only require the active participation of players to understand the shariah concepts but also to apply the model of risks and returns as well as mathematics (negative and positive integers) skills in the quest of achieving higher marks by having different scores for the game: 1 mark for "Permissible" or "Non-Permissible", 3 marks for "Riba Duyun", "Riba Buyu", "Gharar Fahish" or "Gharar Yassir", and 5 marks for "Riba Fadhl", "Riba Jahiliyyah", "Riba Nasi'ah" or "Riba Qardh".

This study targets undergraduate students who took a finance course and have a foundational understanding of Riba. A judgmental sampling method was used to select voluntary participants who met this criterion, as playing the game requires a basic knowledge of Riba. This sampling technique was chosen to guarantee that the collected data would be pertinent and valuable for assessing the game's impact. However, this non-random sampling technique has restricted the diversity of the sample and hindered the ability to generalize findings to all case studies. The game may not be effective for students without foundational Riba knowledge. Before playing the game, participants were given a pre-test to complete within 15 minutes using a Google form with multiple-choice questions. The same set of questions was used for the post-test after the game. Also included in the Google form are 18 questions addressing their perception of the game on a scale of 1 (strongly disagree) to 5 (strongly agree).

An analysis of descriptive statistics was conducted in order to determine what the participants thought about the game and their gaming habits. As the data set consisted of less than 30 samples and was not normally distributed, a non-parametric analysis using Wilcoxon Ranked Tests was used to measure the difference between pre- and post-tests (Pallant, 2020). Meanwhile, the following formula (Rosenthal, 1986) is used in order to determine the further impact of this difference:

$$r = \frac{|z|}{\sqrt{N}} \quad (1)$$

The table below summarizes how the effect size, represented by the r value, was interpreted in this study.

Table 1: Interpretation of effect size
(Source: Cohen, 1988)

Effect Size	r
No Effect	0.0 < 0.1
Small	0.1 < 0.3
Medium	0.3 < 0.5
Large	0.5 < 1.0

Moreover, a non-parametric method (Kruskal-Wallis test) for comparing multiple groups was employed to analyse participants' involvement in non-digital and digital games and their use of games with the score difference obtained (pre-test minus post-test).

4.0 Findings and Discussion

The study's participant pool was drawn from 25 undergraduate students, aged 18 to 25, all enrolled in the Faculty of Business Management. This choice suggests a focus on assessing the game's effectiveness among individuals with some foundational business

knowledge, potentially making them more receptive to financial concepts like Islamic finance principles. A survey was conducted before and after gameplay to assess the game's impact. While all 25 students participated in the gaming session, only 24 completed both surveys, resulting in a high response rate of 96%. This high participation strengthens the reliability of the survey data collected.

The participant demographics also reveal a predominantly female sample. Of the 24 respondents, 21 identified as female and three as male. This gender imbalance is noteworthy and might reflect enrolment patterns within the faculty or a greater interest in the study's topic among female students. Additionally, the vast majority (23 out of 24) were pursuing degree programs, with only one participant enrolled in a diploma program. This indicates a relatively homogeneous group in terms of academic interests, which may affect their learning experiences and perceptions of the game's educational value.

4.1 Gaming experience

Most participants answered 'Strongly Agree' with the statements in Figure 1, which indicates that they generally perceive the game positively. Almost all participants agreed that the game was suitable for a wide range of ages ($n = 21$) and socially stimulating ($n = 21$). Seventeen of the twenty-four participants indicated a willingness to buy or pay for similar games. This suggests the game has potential commercial viability when offered at reasonable prices. Interestingly, participants' feedback ($n = 20$) agreed that the game could also serve as a tool for promoting Islamic Finance.

Furthermore, the participants were mostly satisfied with the gaming experience ($n = 21$) and met their expectations ($n = 21$). Additionally, there is strong agreement among respondents that the game is useful for learning about Riba and Islamic finance ($n = 20$) and that they enjoy using it ($n = 21$). Therefore, the game can be an effective educational tool for learning these concepts. In all statements, there are consistently two participants who strongly disagree with the statement. Meanwhile, no participants selected "Disagree" for any of the statements.

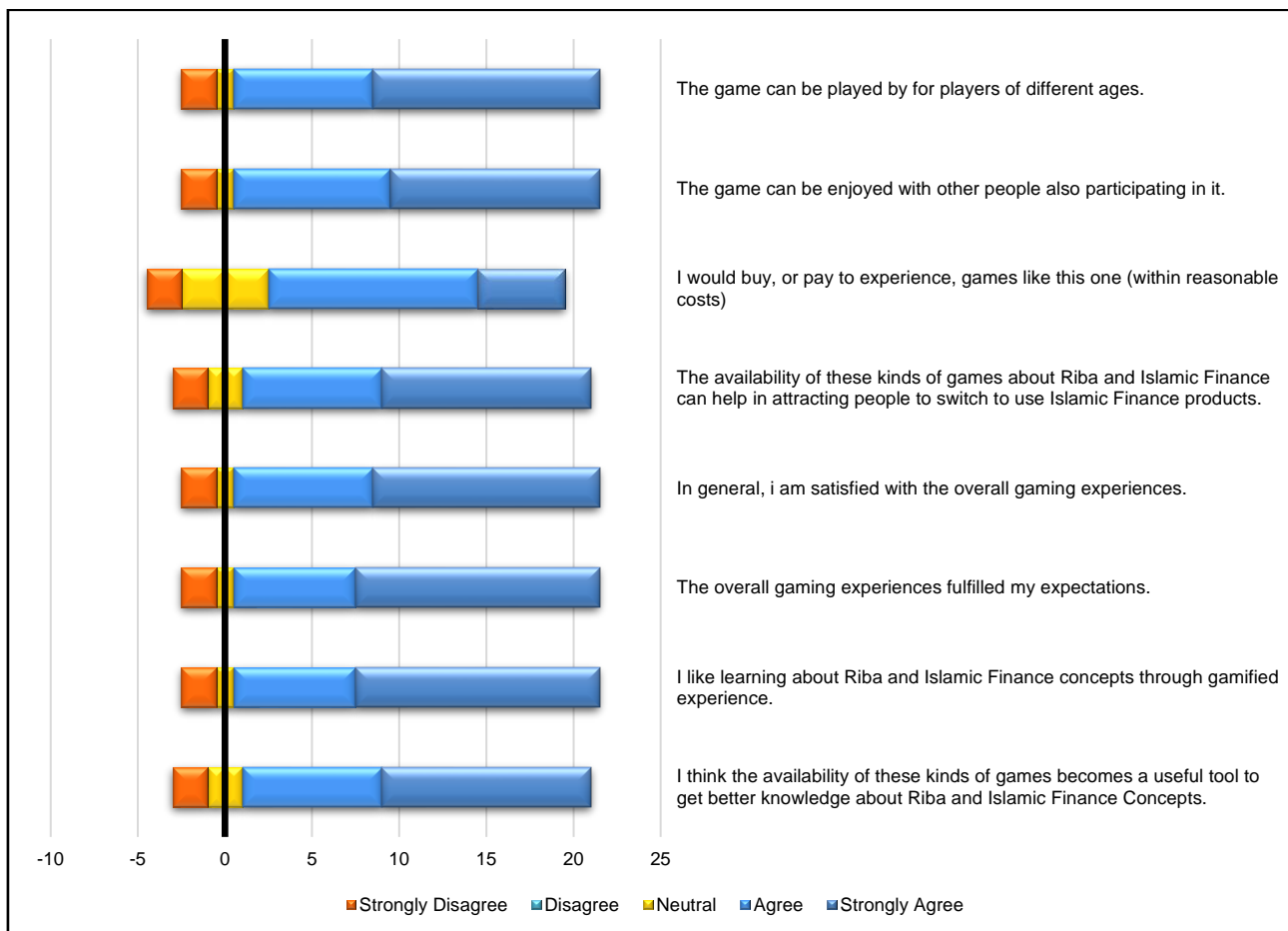


Fig. 1: Stacked bar chart of gaming experience
(Source: Own dataset)

Most participants are satisfied with the overall quality of the game by providing positive feedback on its clarity, engagement, complexity, involvement, duration, originality, and overall enjoyment, as shown in Figure 2. Among all the statements, participants have mixed feelings about being high-risk players, with the responses varying widely. Most players (14 out of 24) are "Strongly agree" and "Agree" with this statement. This demonstrates the diversity of risk preferences among the players. As a result of this diversity, the game caters to a broad audience with different gameplay strategies.

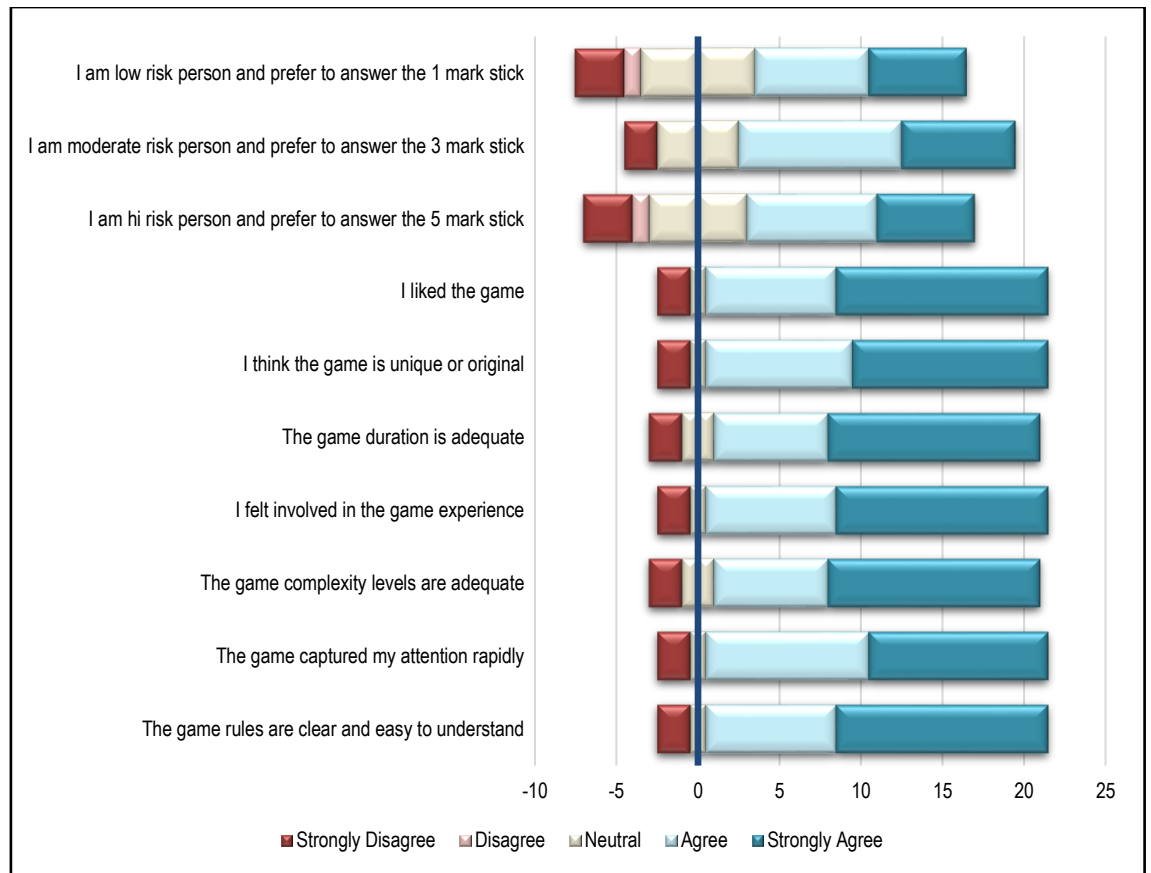


Fig. 2: Stacked bar chart of game experience
(Source: Own dataset)

4.2 Pre- and post-test results

Figure 3 shows the histogram showing the pre- and post-test scores, asking respondents about their knowledge level of riba before and after playing the game. Only 3 participants had identical scores, and 21 participants had negative differences between their pre-test and post-test scores, indicating that most respondents scored higher after they played the game

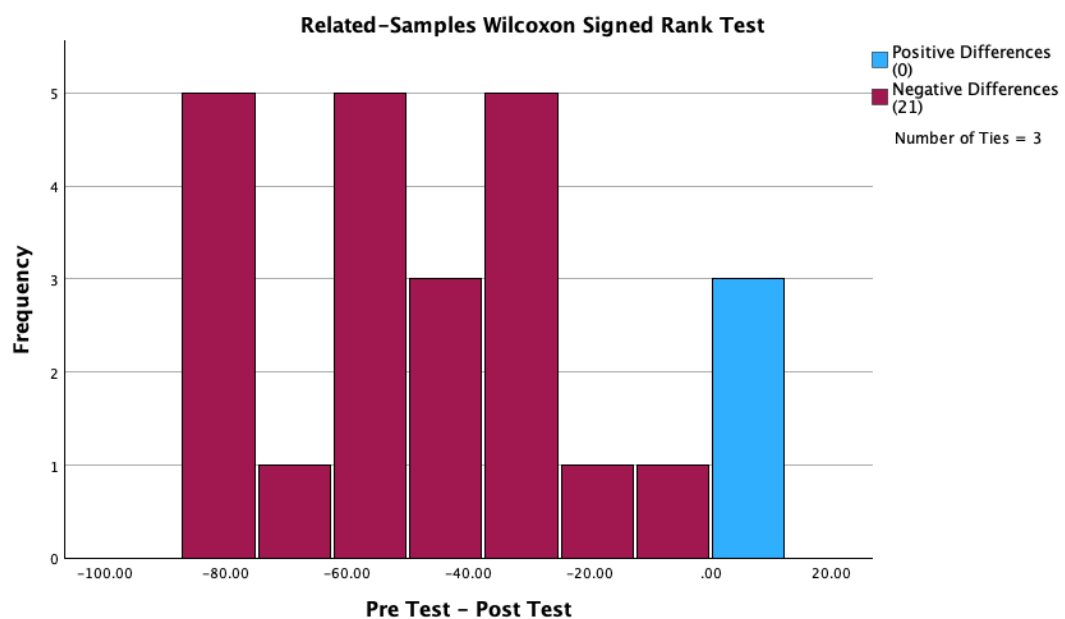


Fig. 3: Histogram of Difference Score
(Source: Own dataset)

Meanwhile, Table 2 shows the results using the Wilcoxon Signed tests, showing their scores before and after the game. The p-value is less than 0.05, indicating a significant difference before and after playing the game. It has been found that the median score after playing the game has risen from only 25 per cent before to 87.5% after playing the game. In this respect, the game has shown a positive impact on the participants' performance regarding the topic of riba. Furthermore, the calculated effect size is 0.823, which means the game has a large effect on the study participants' performance according to Cohen's classification.

Table 2: Pre-- and Post-Test Results
(Source: Own dataset)

Measure	Descriptive Statistics			Wilcoxon Signed Rank Test		
	Mean	SD	Median	Z	p	Exact Sig. (2-tailed)
Pre-Test	32.29	24.977	25.00	-4.034 ^b	<0.001	<0.001
Post-Test	82.29	10.371	87.50			

Note: N=24, b based on negative ranks

Table 3 below aims to capture whether the participants have different experiences with digital or non-digital gaming. The findings show that most participants play non-digital games at least once per month (9 participants or 37.5%), and one participant (4.17%) plays them daily. Moreover, most participants (12 participants or 50%) play digital games monthly, and one participant plays daily (4.17%). However, most participants rarely use games as a study tool (9 participants or 37.5%), and 2 participants play them daily. Nevertheless, Kruskal-Wallis's results show that all three categories of experience with digital and non-digital games did not significantly affect the difference in the score obtained (p-value > 0.05).

Table 3: Participation and experience using digital vs non-digital games
(Source: Own dataset)

	Participation in non-digital games (e.g., card or board games)	Participation in playing digital games (card or board games, etc)	Experience with using games (board or digital) as a study tool for tests
Never	4	2	2
Rarely, from time to time	9	6	9
Monthly, at least once a month	5	12	6
Weekly, at least once a week	5	3	5
Daily, Every day	1	1	2
Kruskal-Wallis H	8.270	5.638	4.049
p-value	0.082	0.228	0.399

5.0 Conclusion & Recommendations

This study explored the potential of "Name the Riba Transaction!®" as an engaging and effective educational tool for enhancing understanding of Islamic finance principles, particularly the concept of riba. The above findings have proven that a game-based approach engages the participants directly in an enjoyable manner and thus deepens their comprehension (Alamri, 2024; Krath et al., 2021), which otherwise would be more difficult in a normal classroom setting (Debit et al., 2024). The overwhelmingly positive feedback from participants suggests that the game successfully fostered an enjoyable learning experience. The summary of findings indicates that:

The game is well-received: Participants found the game engaging, socially stimulating, and suitable for a wide age range. The positive responses regarding clarity, complexity, and overall enjoyment demonstrate the game's effectiveness in delivering educational content.

The game enhances understanding of riba: The significant difference between pre- and post-test scores indicates a positive impact on participants' knowledge of riba after playing the game. This finding highlights the game's potential as a valuable tool for improving financial literacy within the framework of Islamic finance.

The game has commercial viability: The willingness of participants to purchase similar games suggests potential for commercial success, particularly if offered at reasonable prices. This further underscores the game's appeal and potential to reach a wider audience.

Overall, this paper provides strong evidence that "Name the Riba Transaction!®" is an effective educational tool for a broad audience, regardless of their prior gaming experience. Given the projected expansion of the Islamic finance industry, driven by increasing demand for Sharia-compliant financial products and services, this research also contributes to the call by many for developing skilled professionals and innovative teaching methods in the field (Yilmaz, 2024). By employing an engaging and interactive approach, the game successfully clarifies the concept of riba and promotes financial literacy grounded in Islamic principles, addressing a crucial need in this growing market. It is also noted that the limited sample size and the skewed gender distribution may limit the generalizability of the findings. Future studies should consider expanding the scope of participants to include different age groups and cultural contexts to provide a more comprehensive understanding of the study.

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Paper Contribution to Related Field of Study

The findings of this paper indicate that the use of 'Name the Riba Transaction!®' has enhanced participants' knowledge and interest in riba. As discussed in the previous section, the general public faces challenges in understanding the various types of riba, including riba al-fadl and riba al-nasi'ah, which significantly impact the implementation of this concept in daily life. To overcome the barriers to understanding and applying the concept of riba, an educational tool is essential to assist undergraduates in learning the basic concepts of Islamic finance before they enter the financial world.

A game-based learning tool has been shown to deepen the understanding of complex theoretical concepts, surpassing traditional classroom instruction and explanation-based teaching methods. This is further supported by the findings of this paper, which indicate that most participants reported that 'Name the Riba Transaction!®' helped them easily understand the concept of riba through the gamified experience. With further development of 'Name the Riba Transaction!®' by incorporating other fundamental concepts of Islamic finance, it is anticipated that the obstacles to learning and applying the principles of Islamic finance will be eliminated.

Moreover, most participants agreed that the availability of games focused on riba and Islamic finance could encourage the general public to adopt Islamic finance products. This shift can promote social and economic justice and prevent the concentration of wealth among a few at the expense of the many. Based on the findings, most participants reported that the game has enhanced their knowledge of riba and Islamic finance, which could also contribute to reducing poverty in the country.

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