



Improving Financial Literacy as an Effort to Achieve Economic Equity through Educational Board Games

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Abstract

This study aims to analyze the effectiveness of educational board games in improving people's financial literacy as an effort to promote economic equity. The research employs a quasi-experimental approach with a pre-experimental one-group pretest-posttest design, involving 30 respondents aged 20–35 years. Data were analyzed using the Paired Sample T-test. The results show that the use of educational board games has a significant effect on improving people's financial literacy. This is evidenced by an increase in the average posttest score of financial literacy after the educational intervention through the board game. These findings support the use of educational board games as a tool to enhance financial literacy, which is essential for making economic decisions, thereby contributing to economic equality and poverty alleviation in Indonesia.

Keywords: *Financial Literacy; Educational Board Games; Economic Equality*

Introduction

Money is one of the most essential assets in life, needed to carry out today's economic activities. However, money can be either beneficial or harmful to its owner, depending on how it is managed. The knowledge and art of managing money that affects both individuals and organizations is called finance (Sundjaja & Barlian, 2003). According to Sundjaja dan Barlian (2003) finance is related to the activities, institutions, markets, and instruments involved in the transfer of money between individuals or between business sectors and the government. Finance plays an important role in managing and organizing households (Prakoso et al., 2019). Therefore, financial limitations are one of the factors contributing to the persistence of poverty (Hidayat & Amar, 2020). According to the Macro Poverty Outlook by the World Bank (2025), in 2024, 60.3% of Indonesia's population lived below the poverty line. Although this data is based on the upper middle-income poverty rate (US\$ 6.85 per capita per day for upper-middle-income countries), the percentage remains higher than that of other ASEAN countries such as Vietnam (18.2%), Thailand (7.1%), and Malaysia (1.3%). This indicates that Indonesia still faces a major challenge

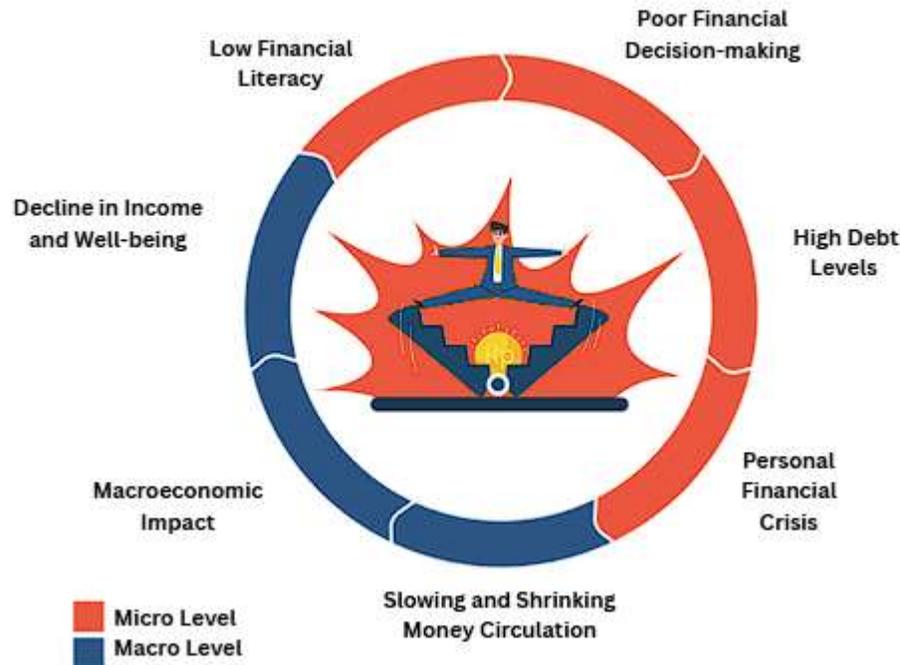
in achieving economic equity and poverty alleviation. The financial sector is one of the most effective ways to address poverty (Pulungan, 2017).

According to Pulungan (2017), the persistent poverty rate is closely linked to poor financial behavior among the population in managing their finances. This condition arises from the low level of financial education in society. A low level of financial literacy strongly correlates with high poverty rates (BSKAP, 2024). In fact, since 2016, the government has been actively promoting the National Literacy Movement (Gerakan Literasi Nasional / GLN) as part of the implementation of Minister of Education and Culture Regulation No. 23 of 2015 concerning the Development of Character (Koesoema et al., 2017). GLN consists of three main components: (1) Family Literacy Movement (Gerakan Literasi Keluarga / GLK) – focusing on developing basic literacy within families; (2) School Literacy Movement (Gerakan Literasi Sekolah / GLS) – focusing on cultivating literacy skills in schools; and (3) Community Literacy Movement (Gerakan Literasi Masyarakat / GLM) – focusing on developing basic literacy at the community level. One of the core forms of basic literacy emphasized in this movement is financial literacy.

Financial literacy refers to an individual's understanding, knowledge, skills, and confidence that enable them to manage their personal finances effectively (BSKAP, 2024; OJK & BPS, 2024; Wicaksono, 2015). Financial literacy is closely linked to an individual's level of well-being; thus, the ability to manage personal finances is essential in everyday life. According to Krishna et al. (2010), financial literacy helps individuals avoid financial difficulties. Financial problems are not solely caused by low income but also by poor financial management. Bhushan, P., & Medury (2013) explain that individuals with good financial literacy are better equipped to face financial challenges because they tend to have savings, insurance, and diversified investments.

In fact, data from the Organization for Economic Co-operation and Development (OECD) in 2023 show that Indonesia's financial literacy score remains below the global average, ranking 57th out of 60 countries (OECD, 2023). Even compared to neighboring countries, Indonesia's score still lags far behind Thailand and Malaysia (OECD, 2023). The OECD uses three indicators to measure the financial literacy index: financial knowledge, financial behavior, and financial attitude. The financial knowledge indicator assesses individuals' understanding of basic financial concepts and their ability to apply that knowledge in making wise and efficient financial decisions. The financial behavior indicator evaluates responsible financial actions such as budgeting, saving regularly, and avoiding excessive debt. Meanwhile, the financial attitude indicator reflects one's outlook on the importance of long-term financial planning, self-control in spending, and the habit of saving for the future (BSKAP, 2024). The Standard & Poor's Global Financial Literacy Survey (2018) also showed that the financial literacy rate among Indonesians was only 32% (Klapper et al., 2015). However, more recent data from the 2024 National Survey on Financial Literacy and Inclusion (SNLIK) conducted by the Financial Services Authority (OJK) in collaboration with Statistics Indonesia (BPS) indicate a significant improvement. Indonesia's financial literacy index reached 65.43%, while the financial inclusion index stood at 75.02% (OJK & BPS, 2024).

Nevertheless, low financial literacy can lead to financial problems rooted in issues such as online loans (pinjol) and online gambling (judol). Data show that in 2023, the highest rate of default on online loans occurred among those aged 19–34, the country's most productive age group (OJK & BPS, 2024). This situation poses a threat to the vision of Golden Indonesia 2045. Based on this phenomenon, low financial literacy negatively affects financial decision-making, leading to problems such as excessive borrowing through online loans and gambling addiction, which in turn increase personal debt levels. When debts accumulate, individuals may face a personal financial crisis. Such crises not only threaten individuals' mental well-being but also endanger economic stability. On a broader scale, the circulation of money slows down, producing macroeconomic effects such as decreased income and reduced societal welfare (see Figure 1).

Figure 1. The Chain Trap Cycle of the Impacts of Low Financial Literacy

Source: BSKAP (2024)

The low level of financial literacy in Indonesia is caused by the public's limited understanding of basic financial concepts. Nidar & Bestari (2012) explained that the national economy would not be affected by the global financial crisis if people understood the financial system. This means that public understanding of financial literacy has an impact on the national economy. The higher the level of financial literacy among the population, the better the economy of a country will be. Therefore, efforts to improve public financial literacy are necessary. According Tong (2018), there are four basic components in financial management designed to be easily understood, namely save, spend, donate, and invest. Cultivating a culture of financial literacy can begin by getting used to practicing these four basic components.

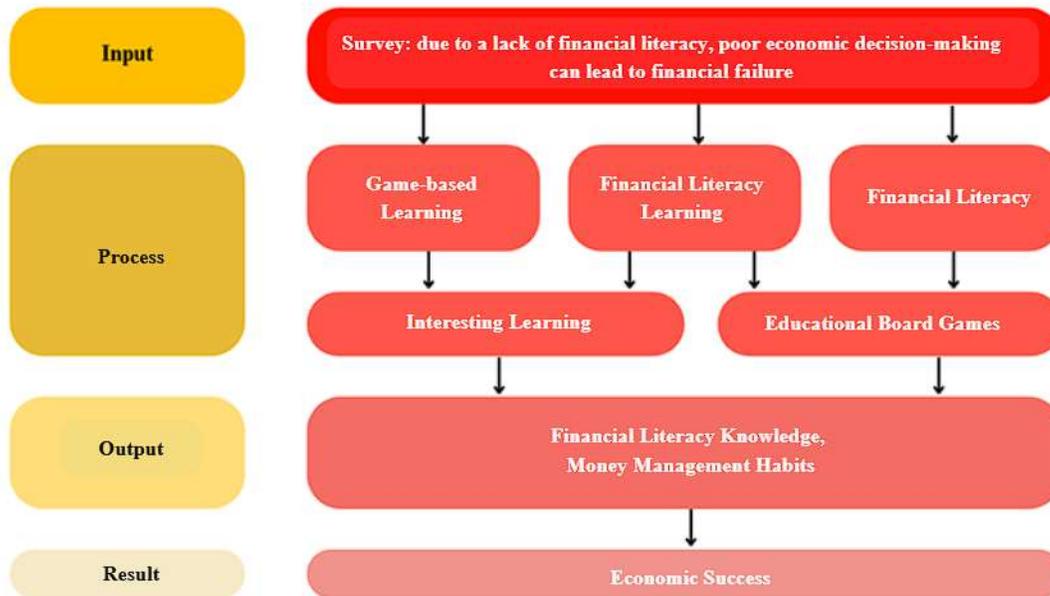
However, when financial literacy education is delivered through seminars or workshops that focus solely on one-way material delivery, many participants feel bored and less interested. According to Amaliah et al. (2014), the use of the lecture method—where explanations are provided only by the speaker—is considered boring and makes the audience passive in participating in the activity. Therefore, one alternative way to understand financial literacy concepts is through games. A game is something enjoyable that is used for entertainment (Santrock, 2008). Game-Based Learning (GBL) has emerged as a term in the field of education that seeks to develop the learning process using games as media (Gunanto, 2021). Game-based learning is not merely about creating games for students to play, but about designing learning activities that gradually introduce concepts and guide learners toward a final goal (Pho & Dinscore, 2015). Based on a literature review conducted by Divjak & Tomić (2011), out of 52 journal articles reviewed, 43 concluded that game-based learning has a positive effect on motivation and achievement. This game-based learning method has proven to be highly effective for teaching various concepts. This is in line with Mu'min (2013), who stated that games are often used as media capable of engaging learners voluntarily and enjoyably. This aspect of voluntary and active participation makes the

learning process more effective. Financial literacy can be learned in many ways, one of which is through educational games (Chung & Wu, 2017). There are many international board games that teach financial management skills, such as Monopoly, The Game of Life, and Gobs of Jobs. However, there is also an educational board game developed by a company from Yogyakarta, Indonesia, called Muara Kuin, which teaches financial management skills as well (see Figure 2).

Figure 2. Muara Kuin Educational Board Game



The habit of playing games that teach financial literacy concepts can shape an individual's behavior in managing finances. This is because a person's behavior is formed through habits. For example, someone who routinely sets aside a portion of their salary for charity will make this activity a part of their financial behavior. Conversely, an individual who is accustomed to borrowing money whenever they run out of funds will make this action an automatic response to unstable financial conditions. Halim & Astuti (2015) stated that if such actions are repeated continuously, they create a behavior. Habits in financial management and knowledge of financial literacy can help individuals achieve economic success, which in turn contributes to economic equality and poverty alleviation. Therefore, a roadmap has been developed, as illustrated in Figure 3.

Figure 3. Research Roadmap

Based on this background, the research question is formulated as follows: How effective is an educational board game in improving the public's financial literacy skills as an effort toward economic equality? Therefore, this study aims to answer this question by analyzing the effectiveness of an educational board game in enhancing the public's financial literacy skills as a means of promoting economic equality.

Method

This study is a quasi-experimental study with a pre-experimental one-group pretest-posttest design, involving 30 respondents aged 20–35 years. In the research design (see Table 1), subjects were placed in an experimental group and given an initial test or pretest (T_1) regarding the variable of financial literacy skills. Treatment X was administered to the group in the form of an educational board game activity called Muara Kuin. Afterward, the dependent variable was measured through a final test or posttest (T_2).

Table 1. Research Design

	Pre-Test	Treatment	Post Test
Experimental Group	T_1	X	T_2

The instruments used for data collection were the pretest and posttest of financial literacy skills. These instruments had undergone validity and reliability tests, ensuring that they could represent the data accurately. The treatment was given by playing the educational board game “Muara Kuin”, which is considered capable of teaching financial management skills. Muara Kuin instills concepts in money management, such as giving, saving or investing, and spending. Through this game, players can practice managing their finances, whether to donate, save as a form of savings or investment, or use for daily needs. Another unique aspect of this board game is that it incorporates the cultural background of South

Kalimantan society, namely the floating market. Thus, the game not only teaches financial literacy but also introduces local wisdom to the players. In the game, players take on the role of both seller and buyer, requiring them to manage their finances wisely. This scenario prompted the researcher to further investigate the impact of the “Muara Kuin” board game on the financial literacy skills of the community.

Next, data analysis was conducted using IBM SPSS 25 with a significance $\alpha = 5\%$. The first step was to test the normality of the data using the Shapiro-Wilk formula to determine whether the data were normally distributed. If the data were normally distributed, a Paired-sample T-test was conducted to determine whether the use of the educational board game had a significant effect on improving financial literacy skills. However, if the data were not normally distributed, the hypothesis was tested using the Mann-Whitney test. Based on the description above, the hypothesis proposed in this study is: There is a significant difference between the mean pretest and posttest scores of financial literacy skills.

Result and Discussion

Table 2. Descriptive Statistics

	Pre-Test	Post-Test
Maximum Score	100	100
Highest Score	90	100
Lowest Score	40	60
Minimum Score	0	0
Mean	68	91
Standard Deviation	13,49	12,69

Descriptive statistical analysis (see Table 2) shows that the pretest scores for financial literacy skills had a highest value of 90 and a lowest value of 40, with a mean of 68. The standard deviation for the pretest was 13.49, indicating the spread of the data around the mean. Meanwhile, the posttest results showed an improvement, with a highest score of 100 and a lowest score of 60. The mean posttest score reached 91, with a standard deviation of 12.69.

Before conducting a hypothesis test to determine the significant effect on financial literacy skills after the treatment, a prerequisite test, namely the normality test, was first carried out. Normality testing is an important step in statistical analysis to ensure that the data used follow a normal distribution. If the data come from a normally distributed population, the hypothesis test can be conducted using a Paired Sample T-test. Conversely, if the data are not normally distributed, a non-parametric test, specifically the Mann-Whitney Test, is used. The normality test in this study was conducted with the assistance of IBM SPSS version 25. The results of the test are presented in Table 3.

Table 3. Normality Test Results

Normality Test	<i>p-value</i>	W	Decision
Result of Pretest Financial Literacy Skill	0,057	0,932	H_0 accepted
Result of Posttest Financial Literacy Skill	0,054	0,928	H_0 accepted

Based on Table 3, the Shapiro-Wilk normality test shows that the pretest data for financial literacy skills had $W = 0.932$ with a p -value of 0.057. Since the p -value > 0.05 , the null hypothesis (H_0) is accepted. This means that the pretest data come from a normally distributed population, so the normality

assumption is met. Similarly, the posttest data for financial literacy skills had $W = 0.928$ with a p -value of 0.054. The p -value, also greater than 0.05, indicates that the null hypothesis is again accepted. Therefore, the posttest data are also normally distributed. Based on these results, it can be concluded that the normality assumption is met for both pretest and posttest data, allowing the analysis to proceed using the parametric Paired Sample T-test.

After the normality assumption was met, the next step was to conduct a hypothesis test to determine whether there was a significant effect on financial literacy skills after the treatment, which involved the use of an educational board game. The hypothesis test was conducted using a Paired Sample T-test and analyzed with the help of RStudio software (RStudio Team, 2023). The results of the hypothesis test are presented in Table 4.

Table 4. Paired Sample T-test Results

Max.	Min.	df	<i>p</i> -value	t	t_{table}
-17,104	-28,896	29	< 0,000	-7,978	-3,467

Based on Table 4, the Paired Sample T-test results show that, with a significance level (α) = 0,05 and degrees of freedom (df) = 29, the calculated t -value $t_{value} = -7,978$ and the p -value < 0,000. Since the p -value < α (0,000 < 0,05) and $t_{value} = -7,978 < t_{table} = -3,467$, the decision is to reject H_0 . This means there is a significant difference between the mean pretest and posttest scores of financial literacy skills. The mean pretest score of 68 increased to 91 in the posttest, indicating that the average pretest score was lower than the posttest score ($\mu_1 < \mu_2$). Therefore, it can be concluded that the use of an educational financial literacy board game has a significant effect on improving financial literacy skills.

The main idea of this research is to analyze the effectiveness of educational board games in improving financial literacy among communities as an effort to promote economic equality. Based on the research findings, there is a significant influence of using educational board games on enhancing people's financial literacy skills. This finding is highly relevant in the context of national efforts to promote financial literacy and inclusion, as outlined in the National Strategy for Financial Literacy and Inclusion (SNLKI) 2021–2025, initiated by the Financial Services Authority (Otoritas Jasa Keuangan, OJK) and fully supported by Bank Indonesia.

As the monetary authority, Bank Indonesia plays a strategic role in promoting sustainable financial system stability (Rohmah et al., 2024). One of the key foundations of such stability is individuals' ability to manage their finances wisely and intelligently, thereby avoiding high-risk financial practices such as consumptive debt, fraudulent investments, or impulsive spending. Therefore, improving public financial literacy has become an urgent necessity, especially amid the rapid digitalization of the economy and the increasing inclusion of formal financial services.

The game-based learning approach, as applied in the "Muara Kuin" board game, has been empirically proven to enhance people's understanding, interest, and awareness in financial management. This aligns with Widiana (2022), who emphasizes that game-based learning media can foster high levels of cognitive and emotional engagement, thus creating effective and memorable learning experiences. Furthermore, Rahayu et al. (2019) and Ristanto et al. (2020) highlight that learning media contextualized to individuals' experiences can affect affective aspects and improve overall comprehension. This game simulates real-life situations in society, such as giving (give), saving or investing (save and invest), and spending money (spend). Through these simulations, participants learn from experience rather than theory, enabling them to internalize financial management principles in a practical way. Moreover, the use of a board game with a local cultural setting (the floating market of South Kalimantan) not only enriches the learning context but also strengthens cultural identity, allowing the community to feel more

connected to the learning material. This is consistent with the culturally relevant pedagogy approach, where learning tied to local cultural contexts tends to be more meaningful and effective in fostering behavioral change (Situmorang, 2015).

The social interactions that occur during the game—such as discussions, cooperation, and the exchange of experiences among players—also contribute to deepening financial understanding. Hafisah (2017) and Sukardi et al. (2025) indicate that community-based group learning can create collaborative spaces that accelerate the process of knowledge transfer and the formation of positive habits. This activity simultaneously serves as a participatory means of empowering communities to understand and manage their finances more effectively.

Nevertheless, this study has several limitations. First, the limited number of samples and the research location—conducted within only one community group—may restrict the generalization of the findings to a broader population. Second, the quantitative approach employed does not fully capture the learning dynamics that occur during gameplay, such as decision-making strategies or in-depth changes in financial behavior. Third, the short duration of the board game intervention limits the ability to observe its long-term effects on the development of sustainable financial habits.

The findings of this research have important implications for the field of education and for policymakers in financial literacy. First, educational board games can serve as an innovative and engaging alternative strategy for financial literacy learning, applicable in both formal (school) and non-formal (community) contexts. Second, the government and financial institutions can adopt this approach within national financial education programs, particularly targeting communities that are less reached by conventional training. Third, these results open opportunities for developing culturally based learning media, as demonstrated by the “Muara Kuin” board game, which incorporates the context of South Kalimantan’s floating market—thereby simultaneously strengthening financial literacy and cultural preservation.

Conclusion

Based on the research findings, it can be concluded that the use of educational board games has proven effective in improving the financial literacy skills of the community. Participants reported that playing the educational board game helped them practice financial management strategies and reminded them to always divide their finances into three main categories: give, save, and spend. Therefore, this board game can be recommended as an innovative solution to support the national financial literacy and inclusion programs, while simultaneously contributing to the enhancement of community welfare and economic independence.

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