



## Original Article (Quantified)

# The Role of Research-Based Education in Improving Financial Literacy and Consumer Behavior of Elementary School Students

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**Abstract**

The main objective of this research is to investigate the role of research-based education in improving financial literacy and consumer behavior among elementary school students. Given the impact of research-based methods in controlling primarily irrational and emotional consumer behaviors, this study claims that possessing financial literacy can help reduce the consequences of these behaviors. For this purpose, the Science, Technology, Engineering, and Mathematics (STEM) approach has been considered. The statistical population of the research consisted of first-grade elementary school students in Yazd city, from whom 111 individuals with no prior familiarity with financial literacy topics were selected using simple random sampling. After completing a financial literacy introductory course, they were evaluated using a researcher-made questionnaire. The claimed relationships in this research were analyzed using structural equation modeling with SmartPLS4 software. The results show that among the four dimensions of financial literacy, two dimensions—credit management and savings and investment management—did not have a significant effect on consumer behavior. However, basic management knowledge and risk management had a significant direct and indirect impact. Risk management and basic knowledge help students make better financial decisions and are not influenced by factors such as advertising. Thus, strengthening these dimensions of financial literacy can help improve students' consumer behavior.

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## Extended abstract

### Introduction

The issue of financial literacy and students' learning capacities has attracted the attention of many domestic researchers, educational authorities, and families in the last decade (Ogbolu, 2019). From the early stages of life, students encounter financial issues; these issues can include managing pocket money, planning to buy necessary goods, or even understanding the market and prices. By teaching financial literacy in schools, students learn how to manage their money properly and avoid unnecessary expenses. This can significantly help reduce financial problems in adulthood (Imawati and Susilaningih, 2013). The financial literacy status of individuals not only affects personal well-being but also significantly impacts the country's financial health in the future (Sudakova, 2019). The quality of education in Iranian schools has faced a significant decline in recent years (Kazempour dizaji et al., 2020).

Furthermore, financial literacy strengthens resistance to social pressures and consumer advertising and helps in making more informed financial decisions and avoiding unnecessary purchases. Integrating financial literacy education into curricula and presenting it in a practical and engaging way not only helps foster a generation with financial independence but also leads to the creation of a more aware and responsible society (Nygaard and Hermansen, 2008). Therefore, this research examines the question of whether financial literacy can improve individuals' consumer behavior in the current consumerist society, especially through research-based education for elementary school students.

### Theoretical Framework

#### Research-Based Education

This type of education refers to a complete content, method, and activity that provides individual experience and supports the development of mindsets, attitudes, motivations, knowledge, and abilities (Lindiyatmi et al., 2022). The main goal of this type of education is to develop individual competencies, which include knowledge, abilities, and attitudes that affect the willingness and ability to engage in financial matters (Zahra and Anoraga, 2021).

The research-based learning model is an educational model with six important guidelines. RBL requires a contextual and realistic problem and includes at least four scientific studies: Science, Technology, Engineering, and Mathematics (STEM) (Sumarno et al., 2024). Learning using the RBL-STEM model generally has several indicators: 1) a problem posed by the group or instructor, 2) formulation and definition of hypotheses to achieve advancements, 3) data collection, 4) data analysis, 5) generalization/interpretation, and 6) discussion with the participation of class members (Mugo et al., 2024).

#### Research Methodology

This research, because the application of STEM-RBL in improving students' financial literacy for controlling consumer behavior was analyzed and investigated, is considered applicable, and due to the causal relationship between variables, it is a causal-comparative correlation type. Given the data collection using a researcher-made questionnaire, a quantitative survey approach was adopted. The sampling method was simple random and experimental. The statistical population included first-grade elementary school students in Yazd city, from whom 111 individuals with no prior familiarity with financial literacy topics were randomly selected from different schools and underwent a short-term financial literacy training course. Subsequently, their consumer behavior and characteristics were measured based on the students' self-assessment and the observations and reports of the research evaluator. Given the proposed model, structural equation modeling with the partial least squares approach using SmartPLS4 software was used to evaluate the hypotheses.

#### Research Findings

Among the 111 students surveyed, 55% were boys (61 individuals) and 45% were girls (50 individuals). The academic grade composition included 25% first grade (23 individuals), 36% second grade (33 individuals), and 49% third grade (55 individuals). To ensure the quality of the research instrument, face and content validity were confirmed by experts. Additionally, convergent validity with factor loadings above 0.7 and AVE above 0.5 for all variables, and discriminant validity through



the Fornell-Larcker test, were confirmed. The reliability of the questionnaire was also proven with Cronbach's alpha coefficient and composite reliability above 0.7 for all six variables. The results of the structural equation modeling test showed that research-based learning (STEM-RBL) has a significant effect on the dimensions of students' financial literacy (t-statistic values  $> 1.96$ ). However, this impact was not fully transferred to children's consumer behavior. Specifically, credit management and savings and investment management did not have a significant effect on consumer behavior (t-statistic coefficient value  $< 1.96$ ), which led to an insignificant mediating effect of these variables in the relationship between financial literacy and consumer behavior.

### Conclusion

Financial literacy, an essential skill in today's world, especially for students, plays a vital role in shaping consumer behavior. Understanding financial principles helps individuals manage their resources and avoid financial challenges. The student period is an appropriate time to begin this learning, as financial literacy education positively impacts consumer behavior and helps students make more informed decisions and develop healthy financial habits in adulthood. These trainings also strengthen analytical and logical skills.

The results of this research showed that the research-based education approach in a STEM environment (RBL-STEM) has a positive and significant effect on improving students' basic financial management knowledge, credit management, savings and investment management, and financial risk management. These findings are consistent with previous studies that link the integration of experiential learning with basic sciences to a deeper understanding of economic and financial concepts. RBL-STEM not only increases theoretical financial knowledge but also changes students' attitudes towards money and resource value, providing a foundation for responsible credit behavior and rational financial decision-making.

However, the impact of credit management and savings and investment management on students' consumer behavior was not confirmed. This could be due to elementary students' low level of understanding of complex credit and long-term investment concepts, as well as the influence of psychological and social factors such as peer pressure and media advertising. In contrast, basic financial management knowledge and risk management had a positive and significant effect on consumer behavior.

In summary, RBL-STEM improves financial literacy components through strengthening basic knowledge and analytical skills. Basic knowledge and risk management play a more effective mediating role in moderating consumer behavior. It is suggested that financial literacy education, especially with the RBL-STEM approach, be prioritized in school curricula to foster a financially aware, self-monitoring, and responsible generation and contribute to the sustainable development of society.