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What Do Children with Above-Average Abilities Understand About Financial Literacy?

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Abstract: Metaphors help to simplify complex concepts, making them more accessible and understandable for children. Children can build a more concrete understanding of these concepts by associating abstract financial ideas with familiar situations or objects. The present study aims to explore what children with above-average abilities understand by financial literacy, using words and images as tools of expression. During a workshop, 22 children with above-average abilities participated in two tasks, one individual and one group task. The results showed that "save" (90.9%), "money" (63.9%), "invest" (59.1%), and "bank" (54.5%) are the words most strongly associated with the concept of financial literacy among the children. Regarding images, money (M = 1.77), a clock or calendar (M = 2.50), a pig (M = 2.75), and a house (M = 2.84) were identified as the most representative symbols of financial literacy for this group of children. In the group task, children perceive financial literacy mainly as managing and using money to satisfy needs and desires. The results can inform educators about the need to adapt educational materials to match children's level of understanding better, promoting more effective and accessible financial education.

Keywords: financial education; financial literacy; decision-making; saving; money

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1. Introduction

The complexity of the financial decisions faced by families today has reached unprecedented levels (Rooij et al., 2011). The intensive development of the financial services market and the optimized financial relationships that characterize the socio-economic situation in the modern world require an improvement in the quality of education (Gerasimova et al., 2022). Literate individuals, even those with low levels of formal education, tend to have better financial performance compared to non-literate individuals (Giannouli & Tsolaki, 2021). In this sense, education plays an important role in promoting financial literacy, showing a strong positive correlation with the ability to manage and understand financial concepts, as highlighted by Huston (2010).

Based on the Financial Education Framework (Dias et al., 2013), the introduction of financial education in pre-school is essential to build a solid foundation for responsible financial decisions throughout life. Teaching basic financial concepts at an early age promotes familiarity and understanding, indispensable elements for healthy financial management in adulthood. Research has shown that people with high levels of financial literacy are more likely to avoid debt, manage money effectively, make informed decisions, and accumulate wealth (Lusardi & Mitchell, 2014). In this sense, early financial education contributes to the financial well-being of populations throughout the life cycle, enhancing behaviors such as saving and greater orientation toward the future (Destefani, 2015; Yuwono et al., 2023).

According to Saini and Rosli (2021), the main factors that influence students' financial education are teaching methods and strategies, parental socialization, and the school curriculum. Children need to be given knowledge, skills, and attitudes related to financial decisions, but when providing analogies, it is not always necessary to relate them to financial products. For example, teaching responsible behaviors can be achieved through approaches close to the child's world, such as how they care for their favorite toys (Srinahyanti et al., 2023).

The promotion of financial education initiatives at schools adapted to different educational levels has shown success in teaching children to manage resources and become more conscientious consumers (Lima et al., 2016). Promoting financial education for children contributes to improving future financial outcomes (Sabirin et al., 2023). Pocket money practices can indeed influence economic socialization, as shown in the study by Lewis and Scott (2000), where those who received regular pocket money during childhood were more economically competent between the ages of 16 and 18. In addition, in the study by Moreno-Herrero et al. (2018), the majority of students would save if they wanted to buy something for which they did not have enough money.

Cognitive development also plays an important role in understanding children's economic behavior, i.e., making decisions about how much and when to spend, and how to accumulate enough money to buy a desired toy, requires a certain level of mathematical reasoning competence (Webley, 2005).

Metaphors create images and evoke emotions, and emotions influence perceptions of risk and expectations of return (Prast et al., 2018). Moreover, the metaphorical nature of human thinking influences how individuals reason about abstract concepts, including money and different economic concepts (Gibbs, 2018). Therefore, it becomes pertinent to introduce metaphors using words or images in financial education for children. In this context, the present study aims to explore what children with above-average abilities understand by financial literacy, using words and images as tools of expression.

Although the importance of financial literacy is widely recognized, there are still gaps in knowledge about how children, especially those with above-average abilities, conceptualize these topics. Most studies focus on the impact of formal financial education programs, with a lack of research exploring the spontaneous, linguistic, and visual representations that children construct about financial concepts. This study aims to address this gap by identifying the mental images and symbolic associations that children form in relation to financial literacy. This approach is especially relevant as it could guide the development of more effective pedagogical strategies suited to children, promoting financial skills from an early age that will last a lifetime.

In addition to this introduction, the article comprises four further sections. The second section presents a literature review, which, in addition to discussing the importance of wealth building and financial growth, also introduces the tools and skills for financial management, decision-making and planning, diversification and risk management, as well as wisdom and knowledge. The third section outlines the methodology, followed by the results and their discussion in the subsequent section. Finally, the conclusions are presented.

2. Literature Review

Financial literacy and money management practices are fundamental aspects of economic growth (Rojas-Vargas & Vega-Mendez, 2020). Financial literacy, according to Lusardi

(2015), can be defined as the ability to process economic information and make informed decisions regarding financial planning, wealth accumulation, debt, and retirement.

2.1. Wealth Building and Financial Growth

According to Khan et al. (2020), financially literate individuals are more likely to invest in financial markets, which becomes important for maximizing return on investment and, consequently, family wealth. Financial literacy and wealth are positively correlated throughout a person's lifetime (Jappelli & Padula, 2011), i.e., individuals with greater financial literacy tend to accumulate more wealth throughout their lives, probably due to better savings, investment, and financial planning decisions.

This wealth building over time can be compared to cultivating a tree, where initially, growth may be slow and may not yield immediate results, but with time and proper care, the tree (investment) begins to bear fruit (financial return). It can also be compared to a germinating seed, symbolizing the start of a process. If the seed is well cared for, it grows and transforms into a plant (investment) that continues to grow over time.

Financial literacy acquired early in life affects future financial literacy (Jappelli & Padula, 2014). Just as a tree takes time to grow and bear fruit, starting to save and invest early can lead to greater benefits over time. This perspective highlights the importance of introducing financial education from a young age to spark interest in investments and solid financial practices (Khan et al., 2020).

The level of education and financial knowledge of investors has a positive impact on investment diversification (Abreu & Mendes, 2010). Just as different trees produce a variety of fruits, diversifying investments across different assets can promote a more sustainable and less risky financial yield, contributing to long-term financial stability. Today, most children simply ask their parents to buy whatever they want, which can be problematic for parents. In this sense, they should be taught the value of money and the importance of saving their own money to buy what they desire the most (Eng & Wee, 2021). According to Moreno-Herrero et al. (2018), promoting saving habits and providing access to financial services from a young age can offer opportunities to learn through experience.

Children can save using the classic piggy bank, but there are also more attractive ways to encourage saving, such as the Piggy Bank that allows children to set savings goals and alerts them with an alarm if they fail to save regularly (Eng & Wee, 2021). Additionally, young children enhance their financial capability when they have access to financial education and a savings account (Sherraden et al., 2011). Mansur et al. (2024) argue that by actively participating in saving activities, children not only acquire practical financial management skills but also develop a deeper understanding of financial concepts such as budgeting, goal setting, and distinguishing between needs and wants. Therefore, efforts should be made to teach people basic financial concepts (Lusardi & Mitchell, 2014).

The importance of financial socialization within the family context is noteworthy (Zhao & Zhang, 2020). Children who have the opportunity to talk with their parents about money tend to achieve higher scores in financial literacy (Moreno-Herrero et al., 2018). Parental involvement in teaching finance to their children forms a solid foundation for healthy financial understanding among family members (Sidiq et al., 2024). Individuals with financial literacy make better decisions for their families and enhance their economic security and well-being (Akhtar & Liu, 2018). In this context, the family home, perhaps the largest financial investment in a person's life, symbolizes the solidity and durability that good financial literacy can provide. It represents the various important dimensions of financial management, such as long-term planning, economic security, and the foundation for a stable and secure financial future.

2.2. Tools and Skills for Financial Management

Children can better understand financial concepts through the use of various strategies, such as game-based education, parental involvement, the introduction of saving, the assignment of financial responsibilities, and the introduction of financial priorities (Sidiq et al., 2024). Teachers also play a crucial role in developing children's financial literacy (Susanti & Kemala, 2023). As future mathematics teachers are responsible for cultivating fundamental knowledge, skills, and attitudes in the field of financial culture, it is important to incorporate elements of financial literacy into the content of mathematics courses; for example, the introduction of practical tasks with economic content is considered an effective tool (Moydinovich et al., 2024). Pashaei et al. (2024) recommend that policymakers, when updating higher education curricula, also consider the inclusion of financial literacy courses across all fields of study. In this context, the schoolbag can symbolize the preparation, planning, and organization needed to carry essential resources that can help navigate various financial situations.

To build a solid financial foundation, schools can plan the teaching of financial literacy by introducing playful activities or applying learning models suited to children's development (Ulfah & Asyiah, 2023). These strategies are expected to help close gender gaps and other knowledge inequalities among vulnerable groups, ensuring that financial education begins early at schools (Demertzis et al., 2024). When well implemented, financial education strategies can have a significant impact on financial knowledge (Kaiser & Menkhoff, 2020). In this context, the hammer can symbolize action, construction, and the ability to correct, thereby improving financial knowledge.

The collaborative partnership between schools and financial institutions is also important for the success of financial literacy programs, promoting the provision of resources, the sharing of expertise, and the implementation of the programs (Mansur et al., 2024). Financial literacy prevents over-indebtedness, ensures financial security, and contributes to the economic development of societies (Siyanbola, 2018). Therefore, making good decisions is like having the key to making the most of what one desires in life (Spetzler et al., 2016). In financial literacy, this key can symbolize access to knowledge, tools, and skills necessary to make informed decisions.

As financial services become increasingly digitalized, it is important to pay special attention to the interaction between financial knowledge and digital skills (Demertzis et al., 2024). Saini and Rosli (2021) suggest that future studies focus on the use of technology to support financial tasks. Additionally, it is crucial to consider online lending processes, which, due to their ease of access, may lead many people into practices that could be harmful (Ulfah & Asyiah, 2023).

According to Castellano et al. (2019), virtual games are effective in improving financial knowledge, increasing motivation, and making learning more engaging and hands-on for children aged 6 to 12. In this type of game, children learn about saving, spending, and interest rates by interacting with virtual characters and objects. Key advantages of this educational tool include: the opportunity to gain practical experience, the ability to make mistakes without real-world consequences, high levels of motivation and engagement, experiential learning, personalized learning paths with progress tracking, and the promotion of both collaborative and competitive learning (Oktaviani et al., 2024). Therefore, computers and smartphones are essential technological devices for accessing, managing, and understanding financial information, facilitating the application of financial literacy concepts in daily life.

Financial literacy and consumer literacy are crucial for developing a healthy, balanced, and responsible relationship with money, and also for raising students' awareness of the importance of his/her actions in society, in the economy, and in the environment, which are the three pillars of sustainability (R. Santos et al., 2024). In this context, the scale can represent the necessary balance for carefully weighing financial decisions, considering not only individual aspects but also social, economic, and environmental implications. Thus, the scale symbolizes the importance of making conscious decisions that promote both personal financial stability and collective well-being and sustainability.

2.3. Decision-Making and Planning

Decision-making is a complex process that requires a combination of knowledge, risk assessment, analysis of relevant information, and consideration of potential impacts when evaluating alternatives (E. Santos & Oliveira, 2024). To make appropriate financial decisions, a solid foundation in financial literacy is essential and an understanding of its principles (Pashaei et al., 2024). Furthermore, it is important to prevent cognitive deficits, as these, when associated with neurocognitive disorders, can significantly affect the financial capacity of individuals, making them, with advancing age, more vulnerable to financial abuse (Giannouli, 2024). In this context, there is an urgent need to implement effective strategies to improve financial literacy, monitor progress over time, and establish good practices (Demertzis et al., 2024). The clock and calendar represent time, one of the most important factors in financial management.

The light bulb can be seen as the illumination of financial knowledge necessary for making informed financial decisions, also representing concepts like creativity and innovation. With repeated practice, supported by adults, children can develop positive financial habits and skills in money management, goal setting, and financial research (Drever et al., 2015). According to Sidiq et al. (2024), the introduction of income, such as pocket money given by parents, helps children understand the value of earning money, develops financial decision-making skills, and builds discipline. On the other hand, the introduction of expenses, such as buying snacks or toys, helps children learn to choose between different options, understand the value of money, and take responsibility for their spending (Sidiq et al., 2024).

Promoting financial education should involve making learning as close to reality as possible and relating it to children's experiences (Birbili & Kontopoulou, 2015). A promising method for teaching financial literacy to children is experiential learning, where the key feature is "learning by doing" (Amagir et al., 2018). The project-based learning model should be applied to teaching financial literacy in childhood, as it teaches children to understand and practice various aspects of personal finance, such as the effort to control the use of money wisely (Hapsari et al., 2019).

Financial literacy should be regarded as an important component of early education, as it not only teaches children about money but also equips them with vital skills for the future, such as wise decision-making, responsible financial planning, and the development of a disciplined attitude toward money (Susanti & Kemala, 2023). As highlighted by Palaci et al. (2017), financial planning for retirement can and should be initiated in youth, as delaying this process until retirement age can significantly reduce the chances of success. In this context, binoculars symbolize the importance of strategic vision, anticipation, and careful analysis, enabling one to observe and plan the long-term financial landscape with clarity and precision.

A prosperous future is the desire of every individual, although, in reality, many adults end up in debt due to their inability to manage finances (Ulfah & Asyiah, 2023). The importance of financial skills for personal well-being is recognized among academics and policymakers (Lamboglia & Stacchini, 2022). Moreover, parents' financial behavior has a significant and positive influence on the development of their children's financial literacy, as well as on their decisions regarding retirement planning (Palaci et al., 2017). To promote this education early on, Susanti and Kemala (2023) recommend a more intensive integration of financial literacy into primary school curricula, alongside closer collaboration between schools and parents in educating children about financial management. Regarding the adult population, Palaci et al. (2017) suggest the creation of credit counseling programs that highlight the benefits of long-term savings to ensure financial security. The study by Cwynar et al. (2019) revealed low levels of debt literacy and a positive relationship between educational attainment and debt literacy. To avoid the dangers of debt and ensure a solid foundation for the future, it is crucial to be prepared for financial uncertainties. In this context, the umbrella symbolizes protection and awareness, representing the need to implement financial security measures, such as insurance and emergency funds, to safeguard against adverse situations.

2.4. Diversification and Risk Management

The financial world changes very rapidly, and each phase of life brings numerous financial challenges (Saini & Rosli, 2021; Lusardi & Mitchell, 2023). Therefore, financial preparation is essential for improving the quality of life in old age (Lee et al., 2023; Tavares et al., 2023) and reducing economic and financial inequalities in society (Tavares et al., 2023). It is during childhood and youth that we build the foundations for financial well-being in adulthood, acquiring the knowledge, skills, attitudes, and personality traits that enable us to manage finances in adult life (Drever et al., 2015). In this context, the bridge can be seen as a metaphor representing the connection, transportation, and transition of financial knowledge across different life stages, to promote security, quality of life, and well-being.

As young people mature, they face significant financial decisions, such as taking out loans for university tuition, buying cars and houses, managing credit cards, health insurance, and other types of insurance, as well as learning to live within a budget (Lusardi & Mitchell, 2023). The acquisition and ownership of a vehicle, for example, involve several important financial decisions that require a solid understanding of financial literacy principles, particularly given the constant depreciation of a car over time. In this context, a car symbolizes depreciation over time, unlike a house, which can gain value. Unlike a house, which often increases in value, a car loses value quickly, highlighting the importance of making informed financial decisions and managing resources responsibly.

Financial literacy programs should be strategically integrated throughout life, starting from basic education to adult continuing education. To ensure a consistent and effective approach, according to Agu et al. (2024), it is necessary to develop national curriculum standards that include clear objectives, competencies, and assessment criteria for all age groups. In addition, mandatory teacher training, both in their initial training and throughout their careers, is essential to ensure that they have the appropriate pedagogical knowledge and methodologies. Amagir et al. (2018) suggest that longitudinal studies are necessary to investigate the long-term effects of specific financial education programs on financial knowledge, behavior, and attitudes. In this context, the "STOP" traffic sign can symbolize the importance of pausing and carefully evaluating financial decisions before proceeding on the long road of life, which requires careful planning to achieve financial goals.

2.5. Wisdom and Knowledge

The owl is a symbol associated with wisdom and knowledge, which are essential elements for making informed decisions. According to Lusardi and Mitchell (2014), there are significant benefits associated with greater financial knowledge, such as smarter saving and investment decisions, better debt management, more effective retirement planning, higher participation in the stock market, and greater wealth accumulation.

Those with higher financial knowledge are less financially fragile, as they can cover their expenses in the event of a sudden loss of income and are more confident that they will have sufficient funds to sustain themselves during retirement (Demertzis et al., 2024). Financial knowledge and skills can enhance decision-making (Ward & Lynch, 2018).

Age and level of education improve financial literacy and the ability to manage financial risk (E. Santos & Tavares, 2020). Financial literacy is not something that can be learned all at once during the learning process; it must be taught continuously (Ulfah & Asyiah, 2023). To ensure ongoing learning, it should be a mandatory part of the school curriculum (Amagir et al., 2018). The owl can also symbolize the continuous learning of financial literacy throughout life in a complex and ever-changing financial environment. Financial education is essential for a successful adult life, but knowledge alone is not enough; it requires healthy and positive attitudes, a supportive social network that expects responsible financial behavior (such as parents), and the confidence to use that knowledge wisely (Shim et al., 2010).

Money can take on various symbolic meanings in its different forms of use and, in some cases, may be associated with problematic behaviors and psychopathological disorders related to financial consumption (E. Santos & Campos, 2019). The concept of financial education is typically used when referring to personal money management (Willis, 2021). Thus, the concept revolves around understanding, managing, and using money effectively to achieve financial goals and ensure economic stability.

It is crucial to provide children with financial education so that they can understand the functions and uses of money, as well as how to earn and manage it (Saputra & Susanti, 2021). Therefore, parents should take the time while their children are young, to teach them how to work with money (Danes, 2005), as the higher the parents' level of financial literacy, the higher the child's level of economic literacy (Gerasimova et al., 2022). Parental behaviors generally lead to higher self-efficacy beliefs, better self-regulation strategies, and more independent economic behavior (Otto, 2013). In addition to parents, Duyan and Labbutan (2020) recommend that educators, families, and communities teach children to recognize money from an early age.

3. Materials and Methods

3.1. Sample

The sample of this study consists of 22 children identified as having above-average abilities, who were attending primary schools in the municipality of Leiria (Portugal), and who took part in a financial literacy workshop developed as part of this study. The ages of these children range from 8 to 10 years (M = 8.86, SD = 0.71); specifically, 31.8% (n = 7) are 8 years old, 50% (n = 11) are 9 years old, and 18.2% (n = 4) are 10 years old. Of these, 81.8% (n = 18) are boys and 18.2% (n = 4) are girls.

3.2. Measurement Instruments

Due to the lack of validated instruments that explore children's linguistic and visual representations related to financial literacy, it was necessary to develop an instrument consisting of two tasks, one for individuals and one for groups, in line with the exploratory objectives of this study. Before implementation, the activities were reviewed by three elementary school teachers.

The first task involved completing a questionnaire individually. This questionnaire was divided into four parts. In the first part, in addition to collecting sociodemographic variables (gender and age), the children were asked whether they had a piggy bank or any savings, what they usually bought with their money, and if they received pocket money or an allowance (if they answered affirmatively, they had to indicate who usually gave them this pocket money or allowance).

Following this, in the second part, the children were asked to reflect on (i) what they would do if they wanted to buy something but did not have enough money, and (ii) what they would do if they received 100 euros. In the third part, the children were presented with various words (save, budget, education, earn, invest, money, knowledge, spend, expenses, make decisions, take a chance, lend, objectives, plan, bank, and exchange) and were asked to select the 5 words that best represented the meaning of financial literacy for them. The words used were selected based on the literature review as well as the Financial Education Framework (Dias et al., 2013). In the last part of the questionnaire, 18 images are shown in Figure 1. The children must look at the images and rank them from 1 to 5, in the order that best represents what financial literacy means to them. The images used, designed by the authors themselves specifically for this study, were also based on the literature review, ensuring their relevance to the concepts covered.

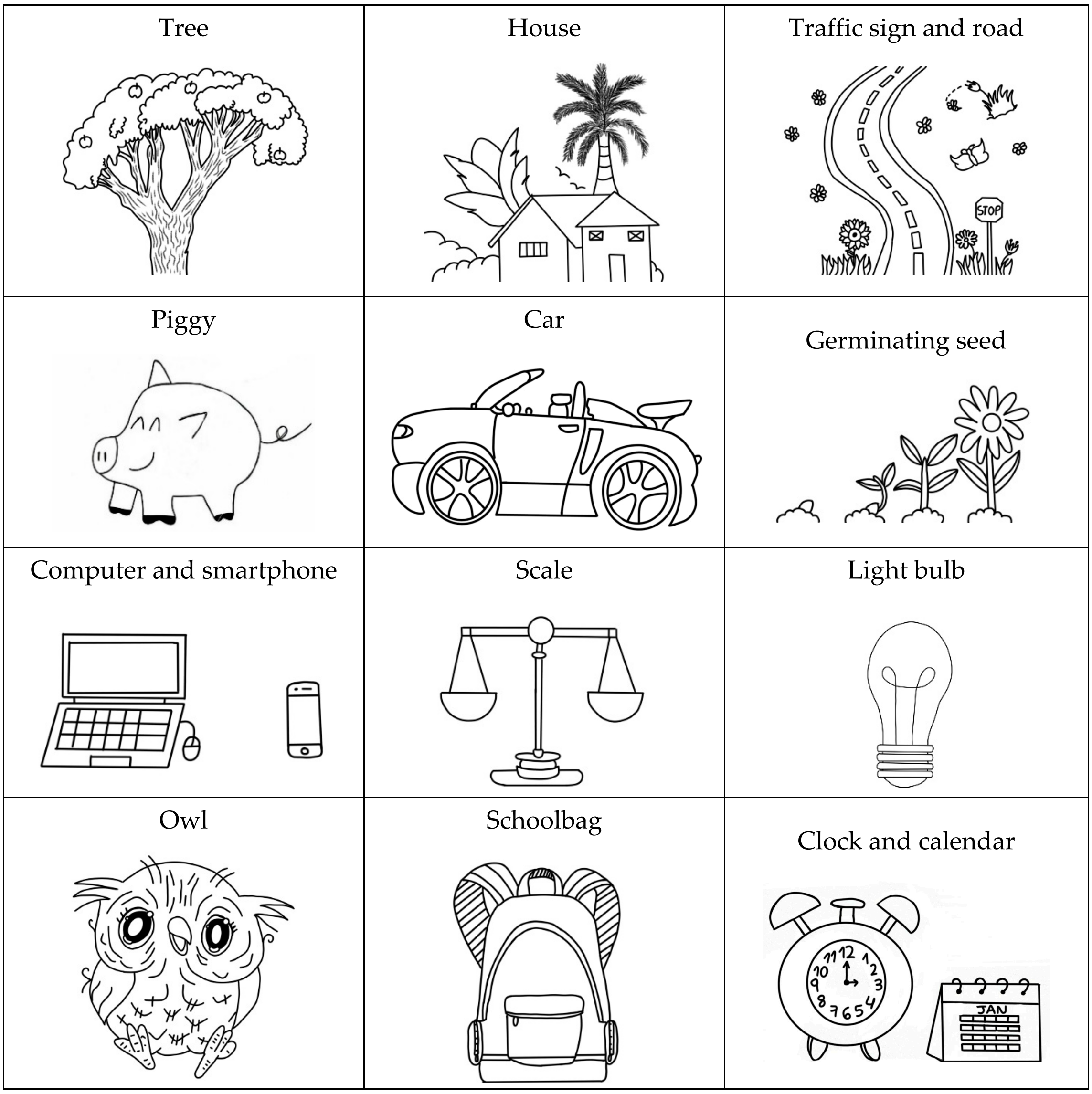

Figure 1. *Cont.*

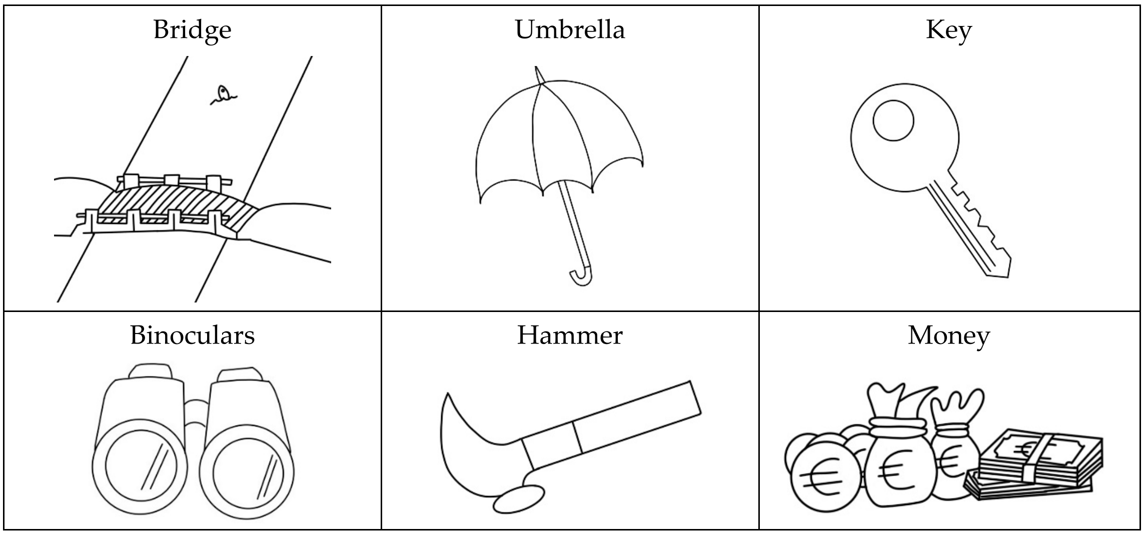

Figure 1. Representative images of financial literacy concepts.

The second task was carried out in groups of five or six elements. In this task, the children had to come together as a group and indicate and justify which of the 18 images presented best represented the concept of financial literacy. The purpose of this task was to generate discussion among the group members to ascertain group dynamics and behavior.

3.3. Procedures

The tasks took place during a workshop titled "An Adventure in the Financial World—Introduction to Financial Literacy Education", held on 17 February 2024 at the Escola Superior de Educação e Ciências Sociais (ESECS) of the Polytechnic of Leiria. The workshop was organized as part of the Enrichment Activities Program, known as the Investing in Capacity Program (PIC—Programa Investir na Capacidade). The PIC was developed through a partnership between the Municipality of Leiria, the Portuguese Association for Gifted Children, and ESECS. It involves the participation of children identified as having above-average abilities who are attending primary schools in the Leiria municipality (Município de Leiria, 2023). According to the Município de Leiria (2023), the PIC offers a diverse program of recreational–pedagogical activities aimed at developing the cognitive, emotional, and interpersonal potential of children and young people, encouraging their motivation for learning that aligns with their cognitive level. At the same time, it seeks to raise awareness and inform society about the educational needs of these children.

Over the eight editions, the PIC has promoted a diverse range of activities in the areas of Science and Mathematics, Robotics, Sports and Movement, Arts, Creative Writing and Communication, and Personal and Social Development. Notably, in this latest edition, the topic of financial education was addressed for the first time in the municipality under study.

During the workshop, the children were accompanied by three employees from the Leiria Municipal Council, and not by their teachers. During the workshop, the children began the task individually by filling in the questionnaire. They were accompanied by students from the Degree in Basic Education, who provided support and clarified any doubts that arose during the process. The groups were then organized. The children were randomly assigned: each participant wrote their name on a piece of paper, which was folded and placed in a bag. Each of the five Basic Education students was responsible for moderating a group. To form the five groups, a rotating process was followed: each student alternately drew a paper from the bag until everyone had their first member, repeating the procedure until all participants were assigned. After the groups were formed, the three Leiria Municipal Council employees who accompanied the children during the workshop were asked about the group dynamics, and they confirmed that there would be no conflicts and that the functioning would be positive.

It should be noted that the participation of students with a Degree in Basic Education was also important in terms of monitoring the discussion of the tasks carried out in each group.

4. Results and Discussion

4.1. Savings and Pocket Money

Regarding having a piggy bank or some form of savings, 86.4% (*n* = 19) of the children stated that they had, highlighting the importance of promoting saving habits and facilitating access to financial services from an early age (Moreno-Herrero et al., 2018). Table 1 outlines the purchases that children typically make with their money, with books (40.9%, *n* = 9), games (31.8%, *n* = 7), clothes and shoes (27.3%, *n* = 6), and sweets or ice creams (22.7%, *n* = 5) being the most frequently purchased items. Table 1 shows the most common purchases made by children with their money, particularly books (40.9%, *n* = 9), games (31.8%, *n* = 7), clothes and shoes (27.3%, *n* = 6), and sweets or ice cream (22.7%, *n* = 5). Managing spending allows children to learn to make financial choices, understand the value of money, and take responsibility for their spending (Sidiq et al., 2024).

Table 1. Items that children usually buy with their own money.

Items	*n*	%
Books	9	40.9
Games	7	31.8
Clothes or shoes	6	27.3
Sweets or ice creams	5	22.7
School material	4	18.2
Toys	3	13.6
Technology	2	9.1
Food	1	4.6
Sports equipment	1	4.6

It was found that only 18.2% (*n* = 4) of the children receive a weekly or monthly allowance. Among them, one indicated that she received it from her parents, another only from her father, one from her grandfather and another said it was from someone else. This suggests that only two of the children understand the concept of an allowance, while the others possibly interpret the act of receiving money as a gift. Please note that, according to the records of the Basic Education undergraduate students, five of the children asked for clarification on the meaning of “weekly allowance” or “monthly allowance”. Allowance practices can influence economic socialization and help to make children more financially competent (Lewis & Scott, 2000). On the other hand, the introduction of a weekly allowance given by parents helps children understand the effort required to earn and manage their money, as well as develop financial decision-making skills and promote discipline (Sidiq et al., 2024).

4.2. Solutions for Buying Something Without Enough Money

Table 2 provides a summarized and categorized analysis of the children’s reflections on the question, “What would you do if you wanted to buy something but didn’t have enough money?”. The most prominent categories are “Ask others for money” (*n* = 8) and “Save or economize” (*n* = 6). Saving was also the option chosen by the majority of students in the study by Moreno-Herrero et al. (2018). However, it is important to work on the concept of debt with children, as highlighted in the study by Cwynar et al. (2019), which emphasizes the need to personalize debt literacy education.

Table 2. Solutions for purchasing when there is not enough money.

Categories	*n*	Most Relevant Responses
Ask money from others	8	"I would ask for money from my parents".—This highlights the common dependence children have on their parents for money. "I would lend some money".—This reflects a practical approach to obtaining what is needed through loans.
Save or economize	6	"When I don't have enough, I save until I can buy it".—This highlights the importance of the habit of saving to achieve financial goals.
Earn Money	3	"I would do work to earn money".—This reflects the willingness to work and actively earn money. "I would become a footballer, earn more than a thousand euros, and buy it".—This shows an ambitious dream and a long-term goal.
Not buy	3	"Not buying it".—Reflects the acceptance of not being able to acquire something without the necessary resources.
Access savings or bank	2	"I would go to the bank and ask for my money".—Indicates a basic understanding of using banking services.

4.3. Solutions for Using Received Money

The children were also asked to reflect on the question, "If you received 100 euros, what would you do with that money?". Table 3 presents a summarized analysis of the different categories resulting from this question. The categories with the highest frequency are "*Games or toys*" (n = 8) and "*Save or keep the money*" (n = 7). Children should be taught about the value of money and the importance of saving their own money to purchase what they desire most (Eng & Wee, 2021). However, it is equally essential that they learn to distinguish between what is essential and what is superfluous (Dias et al., 2013).

Table 3. Solutions for using the 100 euros received.

Categories	*n*	Most Relevant Responses
Games or toys	8	"I would spend the money on a PlayStation and games for it".—Demonstrates a common desire for leisure and entertainment among children.
Save or keep the money	7	"I would save it up to spend later on books and still have money left".—This shows a practical approach and future planning, highlighting the importance of saving and reading.
Clothes and Books	4	"I would spend it on clothes, shoes, and books".—This combines practical needs (clothes and shoes) with the educational and entertainment value of books.
Essential goods	2	"On essential items".—Reflects the priority of meeting basic needs, a fundamental concern.
Gifts or family	2	"In the family, because my mother said to share it".—Indicates values of generosity and sharing, highlighting the importance of family relationships.
Investments	1	"I would spend it on bitcoins".—Shows an interest in technology and financial investments, highlighting a modern and forward-thinking mindset.
Experiences	1	"A night at a 5-star hotel".—Reflects an appreciation for unique and luxurious experiences, an uncommon perspective.

4.4. Financial Literacy Through Words

Through the analysis of Table 4, it can be observed that the words with the highest frequency are: save (90.9%, n = 20), money (63.6%, n = 14), invest (59.1%, n = 13), and bank (54.5%, n = 12). These words best represent the meaning of financial literacy for children. It should be noted that, according to the Basic Education students' undergraduates, some children asked for help with the meanings of the terms "budget", "to save", "to invest", and "to lend". An effort should be made to teach children basic financial concepts (Lusardi & Mitchell, 2014), promoting their active participation in saving activities as a way of developing skills for effective money management (Mansur et al., 2024).

Table 4. Words that best represent the meaning of financial literacy.

Words	n	%
Save	20	90.9
Money	14	63.6
Invest	13	59.1
Bank	12	54.5
Budget	10	45.5
Make decisions	8	36.4
Earn	7	31.8
Expenses	5	22.7
Knowledge	4	18.2
Spend	4	18.2
Objectives	4	18.2
Plan	4	18.2
Lend	3	13.6
Take a chance	1	4.5
Education	1	4.5
Exchange	1	4.5

4.5. Financial Literacy Through Images

To establish a hierarchy of preference among the images, the mean position for each image was calculated, as shown in the graph in Figure 2. Thus, the lowest mean position can be interpreted as the most representative image of financial literacy. Therefore, it can be stated that money (M = 1.77), the clock or calendar (M = 2.50), the pig (M = 2.75), and the house (M = 2.84) are the images that best represent financial literacy for the children. Notably, none of the children chose the images of the owl, the umbrella, the binoculars, or the bridge. Money management is one of the fundamental aspects of economic growth (Rojas-Vargas & Vega-Mendez, 2020). Achieving this knowledge requires active participation in saving activities (Mansur et al., 2024). A solid foundation in financial literacy, developed over time (symbolized by the clock or calendar), enables the making of sound decisions (Pashaei et al., 2024), ultimately leading to the fulfillment of the dream of owning a house.

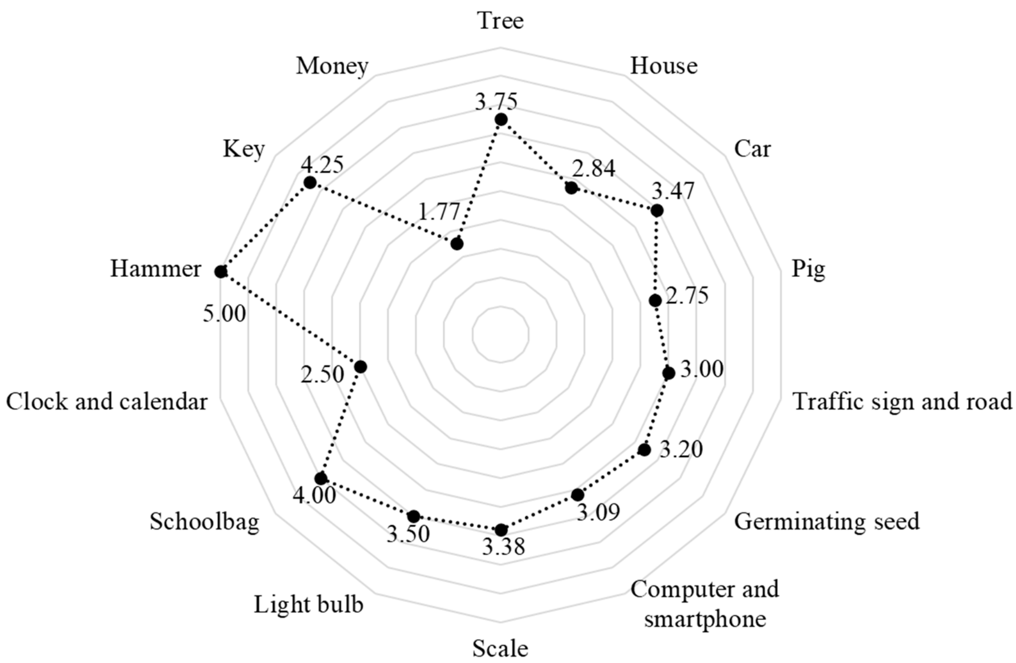

Figure 2. Images that best represent the meaning of financial literacy.

The children's responses to the group task (see Table 5) reflect a centralized understanding of the fundamental role that money plays in daily life and financial literacy. Most of them associate financial literacy directly with the ability to purchase goods and services, emphasizing that without money, it is impossible to survive, acquire products, or pay for basic needs. Some children mentioned the importance of saving money and recognized the value and utility of money. Overall, the analysis reveals that the children primarily perceive financial literacy as the management and use of money to meet needs and desires. These findings align with what Saputra and Susanti (2021) highlight regarding the importance of financial literacy in helping children understand the functions and uses of money. Eng and Wee (2021) also reinforce that saving money is essential for fulfilling future desires. It is highlighted that during the group task, the undergraduate students in Basic Education reported that the children found it difficult to explain and express their ideas on paper. In some groups, it became challenging to reach a consensus, which led to the recording of multiple opinions (Groups I and III).

Table 5. Responses to the group task.

Group	Group Responses
I	"It's the scale because one side represents the wages that workers receive, and the other side represents what they have to give to the state from those wages". "If we don't have money, we can't survive". "Without money, you can't buy anything". "Without money, financial literacy doesn't exist".
II	"Money is what gives us picanha and other foods". "Money is the material we use to buy everything we want". "If we didn't have money, we couldn't save it". "Money is essential and important to us". "Money is used to buy things". "Money is very valuable".

Table 5. *Cont.*

Group	Group Responses
III	"Money represents things similar to financial literacy". "I would choose the house because we have to pay property taxes". "I would choose the light bulb because we also have to pay for electricity". "I would choose the car because we need to pay for petrol or diesel".
IV	"It's money because, without it, you can't have anything". "Without money, you can't buy anything". "Because without money, you can't live". "Without money, there are no purchases, and without purchases, you have nothing".
V	"We choose money because, without it, we wouldn't be able to buy anything".

5. Conclusions

This article aimed to explore what children with above-average abilities understand about financial literacy through words and images. It can be concluded that these children already exhibit some saving habits, which are important for their knowledge and development in financial literacy and education. These children have clear ideas that in order to have money to spend, one must save until enough is accumulated, or one needs to borrow. Despite being children, some of them understand that to have money, it is necessary to work and actively earn it.

As children, many show a natural inclination to spend money on games and toys related to leisure activities. However, an almost equivalent number of them opt to save instead. Some children also choose to spend money on essential and durable goods. It is evident that for these children, the words that best represent the meaning of financial literacy are saving, money, investing, and bank. These are indeed key terms frequently used when discussing financial literacy.

Regarding images (objects), those that best represent financial literacy for the children are money, a clock/calendar, a pig, and a house. Here, too, children have clear ideas about what financial literacy entails. The pig is culturally associated with a "savings box" in most Portuguese households. Money and time are two of the three variables in the interest calculation (with the interest rate being the third), and the house represents the most significant investment for most families.

In conclusion, children with above-average abilities already possess the fundamental knowledge and concepts of financial literacy. They also show a tendency to manage money with balance and prudence, in line with sound financial management practices. However, it is considered important to work better on some concepts, such as distinguishing between what is essential and what is superfluous, and debt literacy.

One of the limitations of the present study was the sample size, which included only 22 participants, all from the same municipality. This limitation is largely because this was the first time that the topic of financial education was addressed in the eight editions of the PIC, as well as to the organizational characteristics of the program itself, which is developed in collaboration with different higher education institutions and does not consistently address the same topics across regions. For future studies, it is proposed, in the first phase, to ask teachers in primary schools in different regions of Portugal to identify gifted children and, in the second phase, to apply the instruments used in the present study. Carrying out a study of this nature will also make it possible to involve parents and collect additional information from families, particularly on their level of financial literacy. Additionally, we suggest collecting information on the existence and type of financial education activities carried out in the children's schools of origin, in order to better understand the educational context in which they find themselves.

This study also points to some practical implications. Based on the results obtained, the importance of systematically integrating financial education into school curricula from the first cycle onwards is highlighted, ensuring that financial literacy is promoted continuously throughout the entire educational process. To achieve this, it is essential to invest in the initial and continuous training of teachers, both in financial literacy and in the technologies associated with its promotion, in order to enable them to work on this topic with children in an effective and up-to-date way. The results also reinforce the need to involve families in this process, which is why it is recommended that practical guidelines be drawn up for parents to support them in promoting savings and financial management habits from an early age.

Furthermore, the relevance attributed by children to certain images and objects, such as the piggy bank, money, the calendar, and the house, suggests that these symbols can be strategic in the creation of awareness campaigns and educational materials. The use of mascots or visual elements associated with these concepts could boost children's interest and understanding, facilitating their emotional and cognitive engagement with the content addressed in financial literacy initiatives.

It is also worth highlighting the need to update the Financial Education Framework currently used in Portugal, which has not been revised since 2013 so that it can better reflect the social, technological, and economic changes in recent years. While a mandatory financial literacy subject does not exist at all levels of education, it is recommended to develop programs and projects promoted by governments and municipalities, to support the population in acquiring lifelong financial skills.

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