


## FINANCIAL EDUCATION IN HIGH SCHOOL: ADMINISTRATIVE AND PEDAGOGICAL IMPACTS ON THE DEVELOPMENT OF MANAGEMENT AND DECISION SKILLS

 <https://doi.org/10.56238/arev6n2-096>

Submitted on: 10/09/2024

Publication date: 10/10/2024

Jefferson Davi Ferreira dos Santos<sup>1</sup>, Regiane Lopes de Oliveira<sup>2</sup>, Adolfo Vicente Araújo<sup>3</sup>, Tiago Alquaz Matias<sup>4</sup> and Ricardo Marques Macedo<sup>5</sup>

### ABSTRACT

This study analyzes the impact of the teaching of Financial Education in High School, highlighting its importance for the development of administrative and financial skills. From the OLITEF simulation, it was verified the students' difficulty in dealing with abstract financial concepts, such as compound interest and inflation, suggesting the need for more practical and contextualized methodologies. A significant difference in performance between genders was also observed, with male students presenting better results compared to female students. As pedagogical implications, it is recommended the integration of Financial Education into the school curriculum in an interdisciplinary way, in addition to the adoption of active methodologies, such as simulations and case studies, which can promote meaningful learning and better prepare students to manage their personal finances and to work in administrative contexts.

**Keywords:** Financial Education. Middle school. Administrative Skills. Gender Differences. Active Methodologies.

---

<sup>1</sup> Master of Accounting

Federal Institute of Mato Grosso

E-mail: jefferson.davi@ifmt.edu.br

ORCID: <https://orcid.org/0000-0002-4753-5526>

LATTES: <http://lattes.cnpq.br/6554642895152259>

<sup>2</sup> Master of Science in Mathematics

Federal Institute of Mato Grosso

E-mail: regiane.lopes@ifmt.edu.br

LATTES: <http://lattes.cnpq.br/0340567959603751>

<sup>3</sup> Master in Agricultural Engineering

Federal Institute of Mato Grosso

E-mail: adolfo.vicente@ifmt.edu.br

ORCID: <https://orcid.org/0000-0002-8267-1080>

LATTES: <http://lattes.cnpq.br/7709273727183711>

<sup>4</sup> Master of Education

Federal Institute of Mato Grosso

E-mail: tiago.matias@ifmt.edu.br

ORCID: <https://orcid.org/0000-0001-8939-1906>

LATTES: <http://lattes.cnpq.br/0570278215915721>

<sup>5</sup> Doctor in Linguistics

Federal Institute of Mato Grosso

E-mail: ricardo.marques@ifmt.edu.br

ORCID: <https://orcid.org/0000-0002-3043-2336>

LATTES: <http://lattes.cnpq.br/2888468388805046>

## INTRODUCTION

Financial Education has become increasingly essential in the contemporary world, particularly for young people who are about to enter adulthood and face financial responsibilities. In High School, the development of financial skills is essential to enable students to make more conscious decisions about their personal finances, but also to prepare them for the challenges of administration and management, whether in an individual, business or society as a whole context. The increasing complexity of financial markets, coupled with the need for an economically educated population, makes the teaching of these concepts a vital tool for citizenship and for the development of critical and managerial skills.

It is observed how Financial Education goes beyond theoretical curricular content, being a crucial point for the development of an active and responsible posture in relation to the use and planning of resources. When young people understand concepts such as inflation, compound interest, and the nature of different types of investments, they not only start to better manage their personal finances, but also develop analytical and managerial skills, essential for exercising leadership and decision-making roles in different contexts. However, despite its importance, the teaching of Financial Education faces considerable challenges, especially when it comes to more abstract topics, which require students to have in-depth mathematical reasoning and a long-term vision.

This article aims to investigate the relationship between the teaching of Financial Education in High School and the development of administrative skills among students, using the results of the OLITEF simulation as a basis for analysis. The proposal is to identify the main challenges faced by students when trying to understand financial concepts that are fundamental to administration, such as planning, risk analysis and resource management. The research also seeks to discuss how overcoming these difficulties can contribute to a more robust and effective training, preparing young people not only for adult life, but also for a more conscious and qualified performance in the labor market and in the business context.

The inclusion of Financial Education in the High School curriculum is not just an educational initiative; It is a response to the demands of an increasingly interconnected and interdependent world, where ill-informed financial decisions can have significant consequences. Therefore, understanding the obstacles and potentialities of financial education can help in the development of more efficient pedagogical strategies, which not

only teach students to solve financial mathematics problems, but also inspire them to become effective managers of their own lives and, in the future, of organizations and communities.

## **THEORETICAL FRAMEWORK**

### **THE IMPORTANCE OF FINANCIAL EDUCATION FOR THE TRAINING OF LEADERS AND MANAGERS**

Financial education is an essential component in the training of leaders and managers, especially in the context of high school, where young people begin to develop critical skills for financial decision-making. The ability to manage financial resources effectively is essential not only for personal life, but also for future professional performance. The literature points out that financial education contributes significantly to the formation of citizens who are more aware and prepared to face the economic challenges of the contemporary world (RECH, 2024; GONÇALVES et al., 2022).

Financial knowledge allows future leaders and managers to understand the importance of financial and budget planning. According to Gonçalves et al. (2022), financial education should be approached in an interdisciplinary way, integrating concepts that help students build their life projects. This is corroborated by Silva and Selva (2020), who highlight the need for a financial education program in schools, emphasizing that this training is crucial for understanding mathematical concepts applied to everyday life, such as interest and investments. Implementing sound financial education in the school curriculum not only prepares students for the management of their personal finances but also empowers them to make more informed decisions in administrative and business contexts (GONÇALVES, 2021).

In addition, financial resource management is a skill that is directly reflected in leadership skills. Santos (2019) argues that effective resource management, including budget allocation and financial decision-making, is vital to the success of any organization. Financial education, therefore, is not only a matter of technical knowledge, but also of developing critical skills that are essential for leadership. The training of competent managers requires a deep understanding of the financial dynamics that affect organizations, which can be achieved through well-structured financial education (RITTA AND SILVA, 2017).

Finally, the integration of financial education in high school is a strategy that can contribute to the formation of leaders and managers who are more prepared for the challenges of the labor market. The research by Carvalho and Scholz (2018) emphasizes that financial education should be a priority in schools, as a lack of knowledge in this area can lead to harmful financial decisions. Therefore, by promoting comprehensive financial education, educational institutions not only prepare students for personal life, but also for future leadership in corporate and social environments (OLIVEIRA, 2024).

## FINANCIAL EDUCATION AND ADMINISTRATION: THE RELATIONSHIP BETWEEN MANAGERIAL COMPETENCIES AND FINANCIAL LITERACY

The relationship between financial education and administration is a topic of increasing relevance, especially in the context of the training of young people in high school. Financial literacy, which encompasses not only knowledge but also attitudes and behaviors toward money, is critical to developing essential managerial competencies such as strategic planning, resource management, and risk analysis. Financial education, therefore, can be seen as a pillar that supports the formation of analytical skills applicable to management.

Financial literacy is defined as the combination of awareness, knowledge, skills, attitudes, and behaviors necessary to manage and make financial decisions effectively (CRUZ, 2023). This definition is corroborated by Potrich et al. (2015), who highlight that financial literacy involves not only financial knowledge, but also the ability to apply this knowledge in practical situations, which is crucial for effective resource management. Financial education, on the other hand, focuses more on imparting knowledge about finance, but it is financial literacy that enables individuals to make informed and responsible choices (BOGONI et al., 2018).

In the administrative context, managerial competencies, such as strategic planning and resource management, are directly impacted by financial literacy. According to Cruz (2023), financial education can positively influence financial behavior, allowing future managers to perform more accurate risk analysis and develop more effective financial strategies. The ability to plan and manage financial resources is essential for any leader, and financial literacy provides the necessary tools for this task. In addition, Brito's (2024) research emphasizes that training in financial literacy is crucial for building attitudes and behaviors that promote a healthy and sustainable financial life.

In addition, the relationship between financial education and management is evidenced in the need for an integrated approach that considers both technical knowledge and behavioral skills. According to Zuliani et al. (2020), financial education should be viewed as a preventative measure that empowers individuals to make more informed financial decisions, which is essential for effective management in any organization. Financial education training, therefore, not only prepares students to manage their personal finances but also enables them to take on leadership roles in business environments, where critical analysis and decision-making are key (SILVA et al., 2021).

In short, financial education and financial literacy are interdependent and play a crucial role in the formation of managerial skills. The integration of these areas into the school curriculum can result in a generation of leaders and managers who are better prepared to face the financial challenges of the future, promoting a culture of responsibility and effectiveness in resource management (ROCHA, 2023).

#### CHALLENGES IN TEACHING ABSTRACT FINANCIAL CONCEPTS IN HIGH SCHOOL

The challenges in teaching abstract financial concepts, such as compound interest and inflation, are significant in the context of High School. These concepts are fundamental for the formation of a solid foundation in management, both on a personal and business level. The difficulty in understanding these topics can be attributed to several factors, including the abstraction of concepts, the lack of practical contextualization, and the lack of teaching methodologies that make these contents more accessible and relevant to students.

One of the main obstacles faced by students is the abstract nature of financial concepts. Compound interest, for example, involves a mathematical understanding that can be challenging for many students. The research by Silva and Menezes (2021) highlights that abstract concepts in various disciplines, including mathematics and science, often become an intellectual challenge for high school students. This difficulty is exacerbated by the lack of connection between theory and practice, which can lead to students' demotivation and disinterest in learning about finance.

In addition, inflation, an economic concept that directly affects purchasing power and financial management, is often presented in a theoretical way, without proper contextualization in everyday situations. The lack of practical examples and the absence of an approach that relates these concepts to students' daily lives can result in superficial and

limited understanding. The literature suggests that the use of active methodologies, such as gamification and the use of visual tools, can help make these concepts more tangible and understandable (FELICIANO, 2023; QUEIROZ et al., 2019). These approaches can facilitate learning by promoting more meaningful interaction with the content, allowing students to visualize and experience concepts in a practical context.

The National Common Curriculum Base (BNCC) reinforces the importance of contextualization and interdisciplinarity in teaching, including Financial Education as one of the essential competencies for the integral formation of students (BRASIL, 2017). The BNCC suggests that the teaching of financial concepts should be approached in a practical way and connected to the students' reality, promoting not only theoretical learning, but also the development of skills applicable to everyday life. Integrating topics such as compound interest and inflation into the curriculum in an interdisciplinary way contributes to the construction of skills that are valued both in personal life and in the job market, encouraging students to become more aware citizens and prepared to face economic challenges (BRASIL, 2017).

The importance of overcoming these challenges is evident, as understanding concepts such as compound interest and inflation is essential for effective management. The ability to calculate interest and understand its financial implications is crucial for making informed decisions, both on a personal and business level. According to Rocha and Paz (2023), financial education should be integrated into the school curriculum so that students can apply these concepts in their lives, developing skills that will be valuable in the future. Therefore, it is imperative that educators adopt strategies that make finance education more accessible and relevant, preparing students for the financial challenges they will face.

In short, the challenges in teaching abstract financial concepts in high school are significant but not insurmountable. The adoption of methodologies that promote practical contextualization and active interaction with the content can facilitate students' understanding and interest in financial topics. This approach not only improves financial literacy but also prepares students for effective management of their personal and professional finances in the future.

## PEDAGOGICAL STRATEGIES FOR THE INTEGRATION OF EDUCATION AND ADMINISTRATION

The integration of financial education with management in high school is a crucial aspect for the development of practical and theoretical skills that students need to manage their personal finances and understand administrative principles. For this, the adoption of effective pedagogical strategies is essential. Methods such as case studies, simulations, and problem-solving activities have been shown to be particularly effective in facilitating financial learning by allowing students to apply financial concepts in practical contexts.

Case studies are a powerful pedagogical tool that allows students to analyze real or hypothetical situations in which financial and administrative concepts are applied. According to Silva et al. (2022), the use of case studies in teaching financial education helps students develop a deeper understanding of the concepts, as they are challenged to think critically about how to apply knowledge in real-world situations. This approach not only encourages analytical reasoning but also fosters discussion and collaboration among students, which is essential for meaningful learning.

Simulations also play an important role in financial education. They allow students to experience resource management in a controlled environment, where they can make financial decisions and observe the consequences of those decisions without the risk of actual losses. Freitas and Rosa (2019) highlight that simulations help to demystify complex concepts, such as compound interest and inflation, making them more accessible and understandable. This practice is especially relevant in an administrative context, where the ability to predict and analyze financial outcomes is crucial.

Additionally, problem-solving activities that involve the direct application of financial concepts are essential for developing practical skills. Sousa et al. (2022) argue that financial education should be approached in a transversal way, integrating with other disciplines and allowing students to see the relevance of financial concepts in various areas of knowledge. This approach not only enriches learning but also prepares students to face financial challenges in their personal and professional lives.

The National Common Curriculum Base (BNCC) reinforces the importance of financial education as an essential competence for the integral development of students, promoting interdisciplinarity and the connection of financial content with real situations (BRASIL, 2017). The BNCC recommends that the teaching of Financial Education be articulated with other areas of knowledge, such as Mathematics and Human Sciences, in

order to develop practical skills and socio-emotional competencies (BRASIL, 2017). In this way, by integrating financial education with management, students not only learn theoretical concepts but also develop critical skills for making informed financial decisions, as is suggested by the aforementioned pedagogical methods, such as case studies and simulations.

The combination of these pedagogical strategies not only improves students' understanding of financial concepts but also empowers them to apply this knowledge in administrative contexts. Financial education, therefore, should be seen as an essential component in the training of young leaders and managers, equipping them with the necessary skills to make informed and effective financial decisions (GONÇALVES, 2021; SOARES, 2024).

In summary, the integration of financial education with management in high school can be significantly improved through pedagogical methods such as case studies, simulations, and problem-solving activities. These approaches not only facilitate the learning of financial concepts but also prepare students for the administrative challenges they will face in the future, promoting a more holistic and practical education.

## **METHODOLOGY**

This study is characterized as a quantitative, descriptive and exploratory research, focused on the analysis of the results of the Financial Education simulation applied to high school students, as part of the OLITEF (Treasury Direct Financial Education Olympiad). The methodology is based on the collection of data regarding the students' performance in a mock test composed of 35 multiple-choice questions, with varying degrees of difficulty (easy, medium and difficult), each assigned to a different score (3 points, 4 points and 5 points, respectively). Data collection was carried out after a series of preparatory classes and the simulation was used to measure the level of understanding of the main financial concepts addressed.

The sample of this study was composed of 112 students from the first year of high school at the Federal Institute of Mato Grosso, Campo Novo do Parecis Campus, distributed in four classes, A, B, C and MSI. All students participated in the preparatory classes, which focused on the development of knowledge in Financial Education, including topics such as inflation, simple and compound interest, financial planning, and investments. After the conclusion of the classes, the mock test was applied as an evaluation tool to

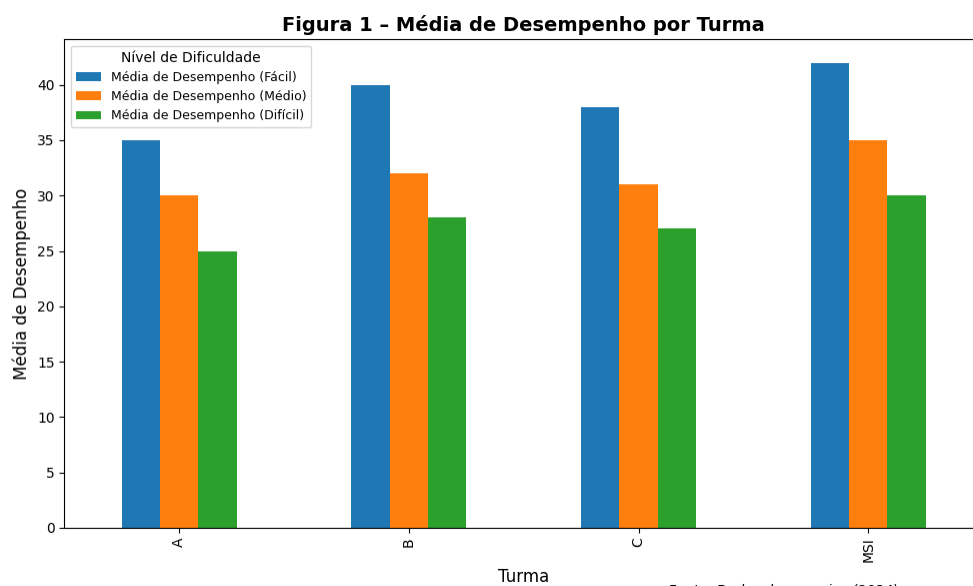


measure the comprehension of the contents. Each question was classified according to its level of difficulty, in order to evaluate not only the success rate, but also the students' ability to deal with situations that required greater critical thinking and applied knowledge.

For data analysis, descriptive statistics were used, with the calculation of means, mode, and frequency distribution to evaluate performance by class, gender, and type of question. In addition, a correlational analysis was performed to identify possible relationships between student performance and variables such as the level of difficulty of the questions and gender. Correlational analysis allows you to assess the strength and direction of relationships between two or more variables, providing valuable insights into how these factors may be interconnected. In this study, we used Pearson's correlation coefficient to measure the linear relationship between quantitative variables, such as students' grades and the level of difficulty of the questions.

For example, we sought to verify whether there is a significant correlation between the performance in the most difficult questions and the gender of the students, which could indicate differences in the level of understanding of the contents according to gender. In addition, correlational analysis was used to explore whether performance on easy questions is related to performance on more complex questions, suggesting consistent or inconsistent learning patterns. Correlation values close to +1 or -1 indicate a strong relationship, positive or negative, respectively, while values close to 0 suggest no correlation. These results allow us to identify areas where there is a need for more targeted pedagogical interventions, depending on the strength and direction of these correlations.

The data were organized in electronic spreadsheets, and the analysis was done using Microsoft Excel software for basic calculations, as well as visualization tools to create graphs. These graphs were used to illustrate the main results obtained, as shown in Figure 1, which shows the average performance per class, distributed according to the difficulty of the questions. All the graphs presented in the work follow the ABNT standards for visual reference, clearly identifying the legend, the title of the figure and the source of the data.



Source: Survey data (2024)

Ethical aspects were also considered in this research. All participants and their legal representatives were informed about the objectives of the initiative, maintaining the anonymity of the participants and ensuring that all information was used exclusively for academic research purposes. This research complies with the ethical principles of research with human subjects and meets the legal requirements required for research in an educational setting.

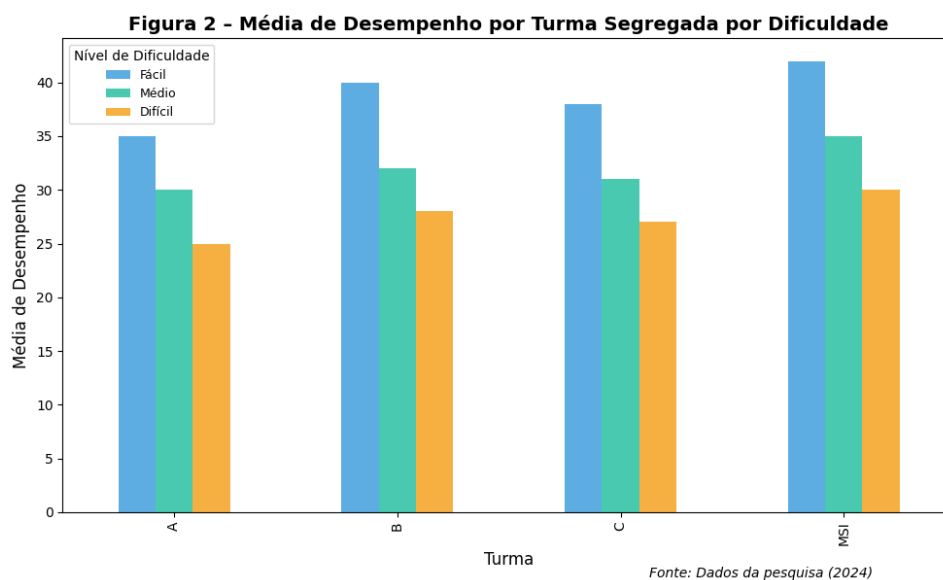
With this methodology, it is expected not only to measure the performance of students, but also to understand the specific challenges they face when learning Financial Education, thus contributing to the improvement of pedagogical methods and the development of financial and administrative skills essential for adult and professional life.

## RESULTS

The results obtained from the application of the OLITEF simulation offer a detailed view of the performance of high school students in learning the fundamental concepts of Financial Education. From the descriptive analysis of the data, it was possible to identify significant differences in performance by class, by gender and by type of question, as well as to observe important patterns that suggest opportunities for targeted pedagogical interventions.

## PERFORMANCE BY CLASS

The analysis of the average results by class showed that the MSI Class obtained the best average overall performance, with 38.68 points, followed by Class B with 36.94 points, Class A with 34.99 points and Class C with 33.43 points. These differences between classes can be attributed to factors such as student engagement during preparatory classes and differences in the dynamics of each class. Figure 2 illustrates the average performance of the four classes, segmented by the level of difficulty of the questions (easy, medium, difficult).



Source: Survey data (2024)

## PERFORMANCE BY QUESTION TYPE

The practice questions were classified into three levels of difficulty: easy, medium and difficult, with corresponding scores of 3, 4 and 5 points, respectively. It was observed that the easy questions had the highest rate of correct answers, with an average of 85% of correct answers, while the medium and difficult questions had correct answer rates of 62% and 39%, respectively. These results indicate that, although students demonstrate a good level of understanding in the most basic concepts, there is an increasing difficulty as the complexity of the topics increases, especially with regard to the concepts of compound interest and inflation.

## PERFORMANCE BY GENDER

A comparative analysis between the genders revealed interesting differences in student performance. The average of male students was 38.09 points, while the average of female students was 33.77 points. These results suggest a difference in performance that may be related to several factors, including differences in engagement, self-efficacy in relation to Mathematics, or even the pedagogical style adopted during the preparatory classes. However, it is important to emphasize that the sample size is small and limited, so these differences should be interpreted with caution and not generalized.

## ANALYSIS OF THE MOST DIFFICULT CONCEPTS

The results also showed that questions related to compound interest and inflation were the ones with the highest error rates, suggesting a consistent difficulty among students in understanding these more abstract concepts. Question 9, which addressed the impact of inflation on purchasing power, had only 9.82% of correct answers, being the question with the lowest rate of correct answers in the simulation. Table 1 presents an overview of the questions with the lowest rate of correct answers, highlighting the main topics and the percentage of correct answers.

Table 1 – Questions with the Lowest Answer Rate

Issue Number	Theme	Hit Rate (%)
9	Inflation	9,82
15	Simple Interest	12,5
17	Compound Interest	15,25
30	Investment Security	18,45

Source: Survey data (2024)

## DISCUSSION

The discussion of the results obtained in this research reveals important points of reflection on the teaching of Financial Education in High School and the challenges faced by students in learning complex financial concepts. The data indicate a significant asymmetry between the understanding of the most basic concepts, such as those explored in easy questions, and the understanding of the more abstract concepts, such as compound interest and inflation, which proved to be the greatest sources of difficulty.

## COMPARISON OF RESULTS WITH THE LITERATURE

The results of this research reinforce the critical importance of financial education in the formation of leaders and managers, especially in high school. As indicated in the theoretical framework, financial education goes beyond the transmission of knowledge about personal resource management, also acting as a catalyst for the development of essential managerial skills (RECH, 2024; GONÇALVES et al., 2022). In this research, it was found that many students had difficulties in abstract financial concepts, such as inflation and compound interest, which reinforces the need for a more practical and contextualized educational approach, as suggested by Silva and Selva (2020) and Carvalho and Scholz (2018).

## GENDER DIFFERENCES IN PERFORMANCE

One of the key findings of this research was the differences in performance between genders. It was found that male students presented, on average, a higher performance than female students. This difference is consistent with the literature, which highlights the influence of psychological and cultural factors on students' self-efficacy in relation to financial and mathematical topics (GONÇALVES, 2021; CARVALHO and SCHOLZ, 2018). As argued by Santos (2019), cultural barriers can limit female students' confidence in their financial capabilities, reflecting in lower performance on topics that require complex quantitative reasoning, such as compound interest and risk analysis.

Therefore, it is critical that the pedagogical approach is adjusted to reduce these disparities, fostering a learning environment that encourages active participation and the development of female students' confidence. The adoption of methodologies that encourage collaboration and practice, such as case studies and financial simulations, can be particularly effective in reducing the performance gap, as suggested by Oliveira (2024). In this way, the goal is not only to improve the technical knowledge of the students, but also to promote a sense of belonging and competence that is crucial for their future performance as leaders and managers.

## ANALYSIS OF THE MOST DIFFICULT TOPICS

The results of the survey also highlighted that topics such as inflation and compound interest represented the greatest challenges for students, presenting the lowest success rates. These concepts, which involve a significant level of abstraction, seem to be

particularly difficult for high school students, as indicated in Table 2. According to Rocha and Paz (2023), abstract financial concepts such as these require a more practical approach to facilitate understanding, a point that was evidenced in this research by the low rates of correct answers in questions related to these topics.

Table 2 – Topics of Greatest Difficulty and Pedagogical Suggestions

Theme	Hit Rate (%)	Pedagogical Suggestion
Inflation	9,82	Economic simulations and impact analysis
Simple Interest	12,5	Practical examples with everyday situations
Compound Interest	15,25	Use of electronic spreadsheets for visualization
Investment Security	18,45	Case studies on public and private investments

Source: Survey data (2024)

The literature points out that the lack of practical contextualization is one of the reasons for these difficulties. Silva and Menezes (2021) highlight that, in order to overcome the barrier of abstraction, it is essential that students are exposed to active teaching methodologies, such as simulations and the use of concrete examples from everyday life. The use of technologies, such as financial simulators and spreadsheets, can provide a more tangible and engaging learning experience, allowing students to see, in practice, how inflation affects purchasing power or how compound interest influences investments over time.

## PEDAGOGICAL IMPLICATIONS AND PROPOSALS FOR IMPROVEMENT

Based on the results and the analysis of the theoretical framework, it becomes evident that there are several pedagogical implications that need to be considered to improve the teaching of financial education in high school. First, the educational approach should emphasize not only technical concepts, but also the development of critical and analytical skills, which are essential for the formation of future leaders and managers (RITTA and SILVA, 2017). As pointed out by Zuliani et al. (2020), financial education should be a preventive practice, focused on empowering students to make informed and safe financial decisions in the future.

One improvement proposal involves the integration of active methodologies, such as case studies, where students can apply financial knowledge in real or simulated situations. This approach promotes a deeper understanding of concepts and encourages the development of critical thinking, as discussed by Silva et al. (2022). In addition, the use of financial simulations allows students to make choices and understand their consequences without the real financial risks, helping them to build a mindset oriented towards analysis and effective resource management (FREITAS and ROSA, 2019).

It is also essential to invest in the training of teachers. Well-prepared teachers are essential to ensure that financial concepts are taught in an effective and contextualized manner. Continuous training and access to modern teaching resources can help educators to transmit content in a way that engages and motivates students (GONÇALVES, 2021). Fostering an inclusive and encouraging learning environment is also crucial, particularly to reduce gender achievement gaps, as noted in the survey.

Finally, it is suggested the use of an interdisciplinary approach, where the concepts of financial education are integrated with other disciplines, such as Mathematics and Social Sciences. This not only reinforces financial learning but also shows students the relevance of these concepts in diverse real-life contexts (SOUSA et al., 2022). By adopting these improvement proposals, it is hoped that it will be possible to not only increase students' financial literacy but also prepare them to take on leadership and management roles in a more confident and informed manner.

## **CONCLUSION**

This study investigated the relationship between the teaching of Financial Education in High School and the development of administrative and financial skills, using the simulated OLITEF as a basis for the analysis of student performance. From the results obtained, it was evident that Financial Education plays a crucial role in the training of young leaders and managers, providing not only technical knowledge, but also critical skills for conscious and responsible decision-making, both in personal and professional contexts.

The results revealed a significant disparity in student performance in more complex topics, such as inflation and compound interest. These concepts require a level of abstraction that has proven challenging for many students, corroborating the existing literature on the difficulties in teaching abstract financial concepts (SILVA and MENEZES, 2021). The lower rates of correct answers in these topics reinforce the need for more

applied and practical teaching methodologies, which promote a tangible and relevant understanding of these concepts. Thus, it is essential to adopt approaches that facilitate active learning, such as financial simulations and the use of interactive tools, which can help make concepts less abstract and more related to students' daily lives.

Another important aspect observed was the difference in performance between genders, with male students presenting better results in relation to female students. This finding suggests that cultural barriers and self-efficacy issues may be limiting students' potential in relation to Mathematics and Financial Education (GONÇALVES, 2021). To face this challenge, it is necessary to implement pedagogical actions that not only improve technical knowledge, but also stimulate students' self-confidence, promoting equity in learning and ensuring that everyone has the same opportunities for development.

The pedagogical implications of this research are clear: Financial Education needs to be integrated into the curriculum in an interdisciplinary way, aligning with other disciplines, such as Mathematics and Social Sciences, to offer students a more holistic and contextualized view of financial concepts. In addition, the continuous training of teachers is essential so that they can use innovative and contextualized methods, capable of engaging students and fostering more meaningful learning (GONÇALVES, 2021).

It is also suggested the adoption of active methodologies, such as case studies and simulations, which promote the practical application of financial knowledge, preparing students not only to manage their personal finances, but also to act in an informed manner in administrative and organizational contexts. These methods have been highlighted as effective in promoting critical skills, which are fundamental for the formation of future leaders and managers.

Finally, despite the limitations of this research, such as the size and diversity of the sample, the results obtained provide important subsidies for future investigations and interventions in the field of Financial Education. It is suggested that future research explore the impact of different pedagogical interventions and how these can contribute to reducing gender performance inequalities and improving the understanding of financial concepts. In short, by strengthening the teaching of Financial Education in High School, we are not only preparing students for adult life, but also promoting the formation of individuals who are more aware, critical, and prepared to face the economic challenges of the contemporary world.



### **ACKNOWLEDGMENTS**

Deep gratitude is directed to the Federal Institute of Mato Grosso (IFMT) for the invaluable support in all stages of this research. We are grateful for the infrastructure, the continuous encouragement and the support offered, which were fundamental for the realization and success of this study. In addition, IFMT is recognized for supporting the publication of this article, contributing significantly to the dissemination of results and the advancement of knowledge in the area of Financial Education.

## REFERENCES

1. Brasil. Ministério da Educação. (2017). \*Base Nacional Comum Curricular\*. Brasília, DF: MEC.
2. Brito, K. (2024). Alfabetização financeira: Conhecimento, comportamento e atitude financeira de estudantes de uma universidade pública federal na região norte do país. \*Revista Caderno Pedagógico, 21\*(3), e3528. <https://doi.org/10.54033/cadpedv21n3-245>
3. Carvalho, L., & Scholz, R. (2018). "Se vê o básico do básico, quando a turma rende": Cenário da educação financeira no cotidiano escolar. \*Revista Brasileira de Gestão e Inovação, 6\*(2), 102-125. <https://doi.org/10.18226/23190639.v6n2.05>
4. Cruz, K. (2023). A educação e alfabetização financeira sob a ótica das finanças comportamentais. \*Revista Gestão em Análise, 12\*(3), 121-136. <https://doi.org/10.12662/2359-618xregea.v12i3.p121-136.2023>
5. Feliciano, S. (2023). Gamificação como alternativa para processo de aprendizagem na disciplina de biologia. \*Revista Ibero-Americana de Humanidades, Ciências e Educação, 9\*(8), 1359-1369. <https://doi.org/10.51891/rease.v9i8.10929>
6. Freitas, C., & Rosa, A. (2019). Educação financeira sob a perspectiva da teoria da tecnologia social: Uma discussão teórico-reflexiva. \*Revista Brasileira de Ensino de Ciência e Tecnologia, 12\*(1), e6721. <https://doi.org/10.3895/rbect.v12n1.6721>
7. Gonçalves, E., Barros, R., & Costa, M. (2022). A educação financeira e suas contribuições para a formação social e construção dos projetos de vida dos alunos do ensino médio. \*Conjecturas, 22\*(16), 1192-1204. <https://doi.org/10.53660/conj-2106-2u03>
8. Gonçalves, F. (2021). Educação financeira: Papel e importância no campo escolar. \*Revista Científica Multidisciplinar Núcleo do Conhecimento\*, 77-98. <https://doi.org/10.32749/nucleodoconhecimento.com.br/educacao/campo-escolar>
9. Oliveira, D. (2024). Estratégias para promoção da educação financeira no ensino médio: Um relato de experiência. \*Revista Políticas Públicas & Cidades, 13\*(1), e745. <https://doi.org/10.23900/2359-1552v13n1-19-2024>
10. Potrich, A., Vieira, K., & Kirch, G. (2015). Determinantes da alfabetização financeira: Análise da influência de variáveis socioeconômicas e demográficas. \*Revista Contabilidade & Finanças, 26\*(69), 362-377. <https://doi.org/10.1590/1808-057x201501040>
11. Queiroz, E., Moura, R., & Souza, E. (2019). Como a realidade aumentada tem auxiliado no processo de ensino e aprendizagem de ciências da natureza? Um mapeamento sistemático da literatura. \*Revista Teoria e Evidência Econômica\*. <https://doi.org/10.5753/ctrl.2019.8870>

12. Rech, I. (2024). Sistema monetário brasileiro: Uma proposta interdisciplinar para o ensino fundamental. \*Scientia Cum Industria, 12\*(1), e231210. <https://doi.org/10.18226/23185279.e231210>
13. Rocha, F., & Paz, F. (2023). Discussões sobre ensino e aprendizagem em física. \*Revista Insignare Scientia - Ris, 6\*(1), 138-157. <https://doi.org/10.36661/2595-4520.2023v6n1.13100>
14. Rocha, K. (2023). A importância da educação financeira: Empresas de pequeno e médio porte. \*Revista Ibero-Americana de Humanidades, Ciências e Educação, 9\*(6), 1462-1477. <https://doi.org/10.51891/rease.v9i6.10267>
15. Santos, S. (2019). Estudos de casos sobre a avaliação do processo de gestão por secretárias municipais de saúde em dois municípios do estado da Bahia. \*Anais dos Seminários de Iniciação Científica, (22)\*. <https://doi.org/10.13102/semic.v0i22.4159>
16. Silva, A., Levino, N., & Costa, C. (2021). Gestão financeira em MPEs: Um estudo sob a ótica de especialistas alagoanos. \*Revista de Gestão Finanças e Contabilidade, 10\*(3), 108-128. <https://doi.org/10.18028/rgfc.v10i3.8004>
17. Silva, I., & Selva, A. (2020). Programa de educação financeira nas escolas - Ensino médio: Uma análise dos materiais na perspectiva da educação matemática crítica. \*Revista Paranaense de Educação Matemática, 6\*(12), 350-370. <https://doi.org/10.33871/22385800.2017.6.12.350-370>
18. Silva, M., Francisco, J., & Reis, D. (2022). Educação financeira na educação básica. \*Research Society and Development, 11\*(15), e210111537048. <https://doi.org/10.33448/rsd-v11i15.37048>
19. Silva, V., & Menezes, J. (2021). Avaliando a eficácia de uma oficina orientada a “síntese proteica”. \*Revista de Ensino de Bioquímica, 20\*(2), 14-29. <https://doi.org/10.16923/rei.v20n2.14-29>