

Exploring connections between Financial Education and the World of Work: an approach to wage taxation

Abstract: This paper is the result of a master's thesis and analyzes how Financial Education can help Integrated High School students understand the tax implications in their financial lives. Using a qualitative intervention research methodology, the proposal suggests two classes with activities based on Scenarios for Investigation. The proposal highlights the importance of understanding the tax nuances related to employment, going beyond the market perspective. The results reveal that students questioned the fairness of tax rates, showing the influence of Financial Education on reflection about the challenges of the World of Work and tax issues. The study highlights the importance of integrating Financial Education, taxation, and the World of Work in order to educate students to make informed decisions and contribute to a more just society.

Keywords: Financial Education. World of Work. Landscapes of Investigation.

Explorando conexiones entre Educación Financiera y Mundo del Trabajo: un enfoque sobre la tributación salarial

Resumen: Este artículo, basado en una maestría, analiza cómo la Educación Financiera puede ayudar a estudiantes de Bachillerato Integrado a comprender las implicaciones fiscales de su vida financiera. Utilizando una metodología de investigación de intervención cualitativa, la propuesta sugiere dos clases con actividades basadas en Escenarios de Investigación. La propuesta destaca la importancia de comprender los matices de las cuestiones fiscales relacionadas con el empleo, yendo más allá de una perspectiva de mercado. Los resultados revelan que los estudiantes cuestionaron la equidad de las tasas impositivas, lo que demuestra la influencia de la Educación Financiera en la reflexión sobre los desafíos del mundo laboral y las cuestiones fiscales. El estudio destaca la importancia de integrar la Educación Financiera, la tributación y el mundo laboral para educar a los estudiantes para que tomen decisiones informadas y contribuyan a una sociedad más justa.

Palabras clave: Educación Financiera. Mundo del Trabajo. Escenarios de Investigación.

Explorando conexões entre Educação Financeira e Mundo do Trabalho: uma abordagem sobre a tributação salarial

Resumo: Este artigo resulta de uma pesquisa de mestrado e analisa como a Educação Financeira pode auxiliar estudantes do Ensino Médio Integrado a compreender as implicações tributárias em sua vida financeira. Utilizando uma metodologia qualitativa de pesquisa de intervenção, a proposta sugere duas aulas com atividades baseadas em Cenários para Investigação. A proposta destaca a importância de compreender as nuances tributárias relacionadas ao emprego, indo além da visão mercadológica. Os resultados revelam que os estudantes questionaram a equidade nas alíquotas, mostrando a influência da Educação Financeira na reflexão sobre os desafios do Mundo do Trabalho e questões tributárias. O estudo destaca a importância de integrar Educação Financeira, tributação e Mundo do Trabalho a fim de educar os estudantes para tomar decisões informadas e contribuir para uma sociedade mais justa.

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Palavras-chave: Educação Financeira. Mundo do Trabalho. Cenários de Investigação.

1 Introduction

In a changing world, schools play an essential role in educating citizens. Returning to Freire's classic phrase (1996, p. 47) that "teaching is not transferring knowledge, but creating possibilities for its production or construction," we recognize that educational action should encourage a structural understanding of society, challenging students to reflect on changes in the current context. Thus, it is essential that teaching stimulates critical thinking and analysis of social realities.

Taxation on labor remuneration is a central element in discussions on tax justice and economic balance, especially in a scenario of constant tax reforms that seek to adjust the tax burden and social contributions in Brazil. Taxes levied on payroll and workers' wages directly impact disposable income, influencing the purchasing power, living conditions, and consumption of the population. In this context, financial education plays an important role, as it impacts everyday decisions, such as those related to consumption, financial planning, and investments. In addition, it contributes to discussions on social, environmental, and economic aspects, broadening the understanding of financial dynamics in society. In summary, as discussed in Mazzi and Baroni (2021), Financial Education can be a means to promote reflection on problems that go beyond the individual sphere, encompassing collective and structural issues.

Beyond the macroeconomic perspective, understanding the tax burden on wages allows for a more critical analysis of inequalities in the tax system, since workers in different income brackets are impacted unequally, with different effects on the formal and informal sectors of the market. Thus, when it comes to training future workers, Financial Education needs to go beyond teaching Financial Mathematics, traditionally restricted to comparing cash and credit purchases. As discussed in Sá (2021, p. 101), "Financial Education activities need to go beyond the discussion about the comparison between a cash or credit purchase, that is, they need to aim to train citizens capable of taking a critical stance". From this perspective, the integration of approaches based on everyday situations in the teaching of Financial Education can help students face the challenges present in Brazilian society. This approach, in turn, promotes understanding and makes these issues more accessible to students.

Considering these reflections, we recognize that a promising approach is to relate Financial Education to tax implications, promoting a more comprehensive view of concepts such as tax rates, percentages, and salary calculations. In the current scenario of constant changes in the world of work¹, this financial knowledge is indispensable for analyzing working conditions and understanding the struggles for rights. In this way, Financial Education can contribute to a more complete civic education, preparing students for the economic challenges of contemporary society.

Seeking this broader education, this study proposes a pedagogical approach to analyze how Financial Education can help Integrated High School students understand the tax implications in their financial lives. In addition, it aims to encourage a critical stance toward the challenges of the world of work, preparing them to deal with financial issues with greater autonomy. By integrating this perspective into the teaching of mathematics in high school, the aim is to develop knowledge that goes beyond calculations, promoting reflection on the impact

¹ Work is any human activity involving the external environment, regardless of remuneration. Employment, on the other hand, refers to a formal or informal working relationship with remuneration (Sá, 2021). Thus, the labor market is the space where jobs and hiring are negotiated, and the world of work is broader, including not only forms of work, but also their social, cultural, and historical dimensions.

of taxation on everyday life.

This paper is structured in sections that articulate the theoretical foundation, the methodology adopted, and the analysis of the results. After this introduction that contextualized the relevance of Financial Education linked to taxation and the world of work, there is a theoretical section in which different perspectives on Financial Education are discussed, contrasting conventional and critical approaches based on different interests. Next, the qualitative methodology details the intervention research carried out with high school students through activities based on Scenarios for Investigation. Subsequently, the results and discussion section analyzes the students' interactions throughout the proposed activities, highlighting how the approach adopted contributed to broadening their understanding of taxation and labor rights. Finally, the concluding remarks summarize the main findings of the study, emphasizing the importance of integrating Financial Education into the school curriculum in a contextualized and interdisciplinary manner, as well as suggesting avenues for future research on the topic, especially in the context of worker training.

2 Financial Education from a Critical Perspective for the World of Work

In light of economic changes, many countries have incorporated previously secondary concepts into school curricula, reinforcing policies that reconfigure their financial systems. Among these strategies, the emphasis placed by the Organization for Economic Cooperation and Development (OECD) on Financial Education stands out (Saraiva, 2017; Prais, Saraiva and Fonseca, 2023; Lima, Vilhena and Giordano, 2024).

The OECD, an international organization composed of 38 countries, claims to promote policies for sustainable development and the well-being of nations, but its central focus is the analysis and recommendation of public policies aimed at improving the economies and quality of life of its members (Silva and Monteiro, 2023).

For the Organization, Financial Education is

process by which consumers/financial investors improve their understanding of financial products, concepts, and risks and, through information, education, and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, make informed choices, know where to seek help, and taking other effective measures to improve their financial well-being (OECD, 2005, p. 5).

The dominant approach to financial education is based on individual responsibility, presenting financial knowledge as a means of protection against market risks. However, this perspective disregards the structural inequalities and power relations that influence access to financial resources. Hartmann, Mariani, and Maltempi (2021, p. 4) criticize this approach, highlighting that “the concept of financial education adopted by the OECD mentions the importance of this issue for improving personal financial well-being, without much concern for the population as a whole”. Furthermore, by emphasizing the need to save for future consumption, this model transfers responsibility for financial success to the individual, exempting the state from its role in ensuring more equitable conditions. This approach may alienate those who do not identify with this logic and ignores the impact of labor relations and economic conditions on people's financial lives (Mazzi and Baroni, 2021).

Influenced by the work of the OECD, in 2010 the Brazilian government created the National Strategy for Financial Education (ENEF), aimed at raising awareness and providing financial guidance to the population. This initiative encompasses a series of multisectoral actions around the promotion of financial education, such as the production of educational

materials, awareness campaigns, training of educators, among other activities (Ferraz, 2021). According to Federal Decree No. 7,397/2010, Financial Education is a permanent state policy, necessary for the training of citizens to deal responsibly with their finances (Brasil, 2010). However, ENEF adopts an individualistic perspective, attributing to individuals the responsibility of managing their resources without critically addressing the impact of economic and social structures.

Although Financial Education has gained ground in academic research, its focus is still on money management — savings, credit, investments — without questioning the relationships of exploitation and inequality (Pessoa, 2016; Figueiredo and Begosso, 2020). In the school environment, this topic is recent and is generally addressed through Financial Mathematics or interdisciplinary perspectives (Azevedo, 2019). It is important to note that, even with the existence of ENEF since 2010, it was only with the recent approval of the Base Nacional Comum Curricular [National Common Core Curriculum — BNCC] that Financial Education became part of the Basic Education curriculum as a cross-cutting theme throughout the national territory (Lima and Mazzi, 2021).

The BNCC included Financial Education as a cross-cutting theme, linking it to Mathematics in Elementary and Middle School and to the Mathematics and its Technologies axis in High School (Lima and Mazzi, 2021). However, the document does not provide clear guidelines on how to integrate this theme into the curricula, resulting in the reproduction of content oriented towards the financial market. The dominant approach focuses on training students to deal with interest rates, inflation, and investments, aligning with the logic of the OECD and neglecting discussions on tax justice, income distribution, and financial system regulation. This perspective reinforces neoliberal ideology, which transfers responsibility for individual financial success or failure to the individual, without questioning the mechanisms that perpetuate inequalities.

Melo and Pessoa (2019) warn of the risks of school financial education restricted to the discourse of conscious consumption and individual savings, ignoring broader aspects of citizenship education:

[...] we are concerned with the teaching and learning process that takes place when we address the topic in the classroom. This does not mean that we are downplaying the importance of the perspectives that other agents bring to financial education, but rather that we do not agree with the perspective that it should be addressed in the school environment solely from the perspective of saving to achieve future goals, as this may be a form of financial education more suited to adults who already have a more structured view of the world, but not to children and young students (p. 491).

A critical approach to financial education should consider not only the impact of interest rates and taxes on people's lives, but also the structural dynamics of the financial market, the influence of economic decisions on society, and the need for redistributive policies. Santos and Pessoa (2016) point out that the debate on Financial Education in Brazil is still recent and therefore requires an investigative and critical approach. Silva and Powell (2013) argue that, in addition to technical education, it is essential to promote reflections on consumption, media, marketing, and social inequality, broadening students' understanding of their place in the economic system.

Thus, Financial Education must go beyond the instrumental learning of financial management, taking on a role in the formation of critical subjects. Mazzi and Baroni (2021) argue that this education can be limited to a market-oriented view, focused on capital

accumulation, or it can be a space for reflection on alternatives to the current capitalist model. For these authors, Financial Education needs to cover environmental, social, and political debates, promoting a broader understanding of the economy and its contradictions.

While the OECD and the BNCC treat Financial Education as a means of adapting to the system, it is necessary to defend it as a tool for questioning the financial logic that governs society. An emancipatory approach can help students understand the role of the state in economic regulation, the need for income redistribution policies, and the impacts of the financialization of everyday life. Thus, Financial Education can not only prepare individuals to deal with the market, but also empower them to transform it.

In the context of Mathematics Education for the World of Work, in Sá (2021), it is suggested that Financial Education can contribute to the critical training of workers, broadening their understanding of economic dynamics. This involves not only personal financial planning, but also understanding the causes of social inequalities. Mazzi and Domingues (2021, p. 14) discuss this perspective when they advocate for “inclusive Financial Education that considers each and every individual; that reflects on differences and invites students to think about them in order to imagine possible ways to overcome existing inequalities”.

This critical perspective requires new pedagogical approaches that transcend the teaching of personal finance and promote discussions about the world of work and its social implications. Baroni and Maltempi (2021, p. 27) argue that “there are other variables, just as important as planning, for analyzing an unfavorable financial situation, such as high rates of unemployment and underemployment in the country and insufficient income for a decent life”. Thus, it is necessary to broaden the scope of Financial Education to include factors such as economic policy, labor relations, and social justice.

Based on these considerations, we developed a Research Scenario (Skovsmose, 2000), which aimed to create a research environment with the theme of Financial Education and the World of Work (Marçal; Milani, 2024). These environments contribute to the teaching and learning processes, as indicated by Mazzi and Baroni (2021),

given the breadth of topics covered by financial education, creating an environment conducive to research can be a powerful ally in encouraging reflection and encouraging students to actively participate in the entire teaching and learning process. (p. 44).

In the school environment, a critical approach can integrate financial concepts into real-world work situations, promoting context analysis and conscious decision-making. According to Hartmann, Mariani, and Maltempi (2021), teaching activities on financial education should encourage critical thinking and debate, allowing students to understand the influence of economic structures on their reality. Thus, we argue that Financial Education should not only be a tool for adapting to the market, but also a tool for empowerment, capable of encouraging workers to question the economic and social structures that influence individuals' financial lives.

3 Methodology

This paper is the result of a professional master's degree research project that investigated how financial education activities can help high school students develop mathematical knowledge and a critical view of the challenges of the contemporary world of work (Delesposte, 2023). We opted to conduct qualitative intervention research, as proposed by Damiani (2012). This methodology makes it possible to investigate and interpret the reality

of those involved in the process, contributing to the production of pedagogical knowledge by bringing educational practice closer to academic production.

As this is a professional master's degree, the research also included the creation and validation of an Educational Product. Thus, based on the reflections emerging from the theoretical framework, we developed Research Scenarios (Skovsmose, 2000) on Financial Education and the World of Work. This approach sought to stimulate critical reflections on issues such as wages, labor rights, and taxes. As exemplified by Mazzi and Baroni (2021, p. 41), "in the universe of money, discussions such as the relationship between money and work, local economy and environmental capital, and the impact of inflation on individuals' lives can be included, for example".

The material entitled *Financial Education from a Critical Perspective for the World of Work* (Delesposte and Sá, 2023) is organized into five sessions with activities involving the analysis of remuneration, taxation, and labor rights. Through the investigative scenarios of Maria and João, students analyze different types of employment, comparing formal and informal relationships, and reflect on the financial impacts of labor relations. Complementing these reflections, the material includes a memory game about labor rights, in which students associate concepts such as paid vacations, thirteenth salary, and working hours, promoting a playful understanding of these topics.

One of the cases covered in the Educational Product was *Maria's Scenario* (Figure 1), which involved a fictional character, a computer technician, who, after receiving a salary increase, needed to identify the applicable deductions, considering taxes and other deductions, to calculate her new net pay. This part of the teaching material consisted of three pages of activities, distributed to students as they completed the calculations and discussions for each stage.

CENÁRIO 1 – O CASO DE MARIA



Em janeiro de 2022, conhecemos a Maria, uma mulher de 28 anos que reside no bairro BNH, em Cachoeiro de Itapemirim-ES. Maria é de uma família simples, seu pai trabalha como embalador de caixa em um supermercado e sua mãe como faxineira, os dois possuem alguns problemas de saúde, sua irmã é mais nova e está concluindo seus estudos. Maria sempre estudou em escola pública, sendo uma aluna esforçada e dedicada, infelizmente por precisar ajudar com as despesas da família, não teve a oportunidade de fazer uma faculdade, que era seu desejo.

Atualmente, Maria trabalha como técnica em informática na loja MSI Informática e, para chegar ao seu local de trabalho, ela precisa acordar bem cedo e pegar dois ônibus. Por ser uma funcionária dedicada, seu empregador resolveu lhe dar um aumento de R\$ 217,50 a mais no seu salário bruto, que corresponde a 12,5% do salário atual, ela muito feliz chegou em casa e contou a novidade a sua família. Sua irmã, Carolina, que não fazia ideia do valor que Maria recebia na empresa, ficou curiosa em descobrir quanto Maria passaria a receber de salário e ao fazer os cálculos matemáticos precisou de ajuda. Vamos ajudá-la? Para você qual seria o valor do salário de Maria já com aumento?



Carolina, ao descobrir o novo salário de sua irmã, chegou à mesa, onde todos jantavam, e indagou Maria: "Nossa, Maria, você irá receber esse valor mesmo?". Maria, rapidamente, explicou para sua irmã que existem alguns descontos no salário de um funcionário com carteira assinada.

Você sabia desses descontos? Quais seriam eles?



Maria explicou para sua irmã que o INSS é um órgão público responsável pelo pagamento da aposentadoria e de outros benefícios aos trabalhadores brasileiros e demais segurados, como microempreendedores individuais e contribuintes individuais. Seu papel é executar os benefícios previdenciários previstos no Regime Geral de Previdência Social, incluindo controlar e realizar o pagamento de aposentadorias e de outros benefícios, como auxílio-doença e pensão por morte. Quem trabalha com carteira assinada é, automaticamente, filiado à previdência e parte do seu salário vai direto para o INSS. A alíquota fica estabelecida por meio da chamada tabela progressiva do INSS, atualizada todos os anos pelo governo federal, com base em alguns reajustes e também com base no salário-mínimo.

Base de contribuição do INSS	Alíquota progressiva de recolhimento do INSS
Até R\$ 1.320,00	7,5%
de R\$ 1.320,01 até R\$ 2.571,29	9%
de R\$ 2.571,30 até R\$ 3.856,94	12%
de R\$ 3.856,95 até R\$ 7.307,49	14%

Fonte: Ministério do Trabalho e Previdência

As alíquotas permanecem em 20% e 11% para contribuinte individual, e em 20%, 11% e 5% para os contribuintes facultativos, de acordo com a forma de contribuição à Previdência Social. No caso do segurado empregado, o recolhimento é feito diretamente pela empresa.

Com base na tabela apresentada, qual o valor do desconto mensal do INSS no salário de Maria?

INSS

Figure 1: Excerpts from Maria's case (Delesposte and Sá, 2023, p. 66-67)

In the classroom, the pedagogical approach was conducted with 24 students in the second year of Integrated High School with Technical Training in Maintenance, Support, and Information Technology at a public state school in southern Espírito Santo. The scenario selected for this paper was worked on over two 50-minute classes. To promote interaction, the students were organized into five groups of up to six members, with the aim of stimulating

discussion and facilitating the sharing of knowledge in solving the proposed activities. They were given the autonomy to organize themselves based on their affinities.

According to Damiani (2012), intervention research transcends simple observation and data collection, seeking to act actively in the context studied, with the purpose of promoting positive and significant changes in the reality of the subjects involved, considering their needs and challenges. In addition, this methodology seeks to understand and analyze the processes underlying transformation, providing relevant information and contributing to scientific knowledge. Therefore, in this study, we proceeded to collect data related to the students' written and oral production, covering critical thinking and the mathematical aspects present in their activities. During the pedagogical approach, data were recorded using instruments such as participant observation with audio recordings, logbooks, and analysis of activity resolutions.

In the analysis stage, the dialogues and productions of the participants recorded in the aforementioned instruments were examined, focusing on the process and not just the results. We selected excerpts from the interactions that occurred during the approach, transcribed into episodes based on the literature, prioritizing those that evidenced the impact of the intervention on students' understanding of the implications of Financial Education and taxation.

4 Results and Discussions

In the first part of the task, students were asked to determine Maria's new salary and investigate the deductions that could be applied to her pay. During this initial phase, students calculated the character's salary without much difficulty. However, when addressing the deductions applicable to a worker's salary, doubts and questions arose that sparked curiosity and stimulated discussion. We observed that many students were unfamiliar with some of the deductions present on a formal worker's paycheck, nor did they understand how these amounts were calculated. During the discussions, we noticed that the social security contribution to the National Social Security Institute (INSS) was the deduction most often mentioned by them. This finding revealed the need to expand knowledge about deductions and their application. This gap was addressed and clarified through interactions between the students and the research professor.

By encouraging students to explore deductions beyond social security contributions, it was possible to promote reflection on the diversity of deductions and contributions that affect workers' wages. The students identified different elements that could be discounted, including union dues, transportation vouchers, health insurance, life insurance, dental care, and income tax. This discussion highlighted the students' perception of the relationship between these deductions and personal income.

The reflections highlighted that entering the world of work is not limited to an introduction to professional tasks, but also involves exposure to the financial responsibilities of this stage of life. It is important for students to understand the nuances of the work environment, from job hunting to the financial obligations involved. In this context, teachers, "assuming a political-pedagogical commitment to training workers" (Sá, 2021, p. 99), need to go beyond traditional teaching and critically incorporate topics such as INSS and IR into their classes. In this way, they can promote reflection on the application of mathematical concepts in reality, preparing students for the financial and social challenges of the world of work.

Anticipating that most students would mention the INSS contribution, we prepared situations related to this discount in the second part of the task. At this stage, Maria presented a detailed explanation of social security contributions and shared a table that allowed students to calculate the monthly amount to be paid as a taxpayer. During this task, we also discussed the rates applied to individual and optional contributors.

Throughout this discussion, students had the opportunity to understand how these contributions work and calculate the amount Maria should pay monthly, considering the relevant rates. At this point, we sought to highlight the function and relevance of INSS contributions. Initially, we observed that the students demonstrated little knowledge about the purpose of the INSS. However, throughout the discussions, they were able to identify its various purposes, such as retirement and support in situations of accidents or health problems. The students' perspectives on the need for INSS contributions varied: some highlighted the importance of financial support in times of emergency, while others emphasized the relevance of retirement and the accumulation of contribution time as essential factors.

The INSS plays a fundamental role in the social protection of workers, offering benefits such as retirement and assistance in cases of illness and maternity. When discussing the INSS with students, the importance of contributing to social security was highlighted, not only as an investment in one's personal future, but also as a way to strengthen the social protection network that sustains the community. Thus, by making them aware of these benefits, the importance of contributing to social security in order to secure future rights is emphasized. In addition, this discussion allows them to understand that certain jobs may not guarantee these rights, which can be detrimental to their quality of life.

Within the scope of Financial Education, these discussions can instill in students, as highlighted in Sá (2021, p. 95), a sense of resistance that "helps workers react to the precariousness that has already been materialized in documents and institutionalized in different work environments." By understanding the financial aspects related to social security, students can develop a critical view of practices that lead to job insecurity. This training encourages a more proactive and conscious attitude towards working conditions and the defense of their rights.

With regard to understanding INSS rates, even though some students tried to make estimates, most were unaware that they are adjusted according to salary range. When examining the percentages applied to individual taxpayers, they expressed surprise at the information. During this discussion, an analysis of the interactions revealed a diversity of viewpoints. Some students agreed with the progressivity of the rates, arguing that it is fair for the rate to increase as wages rise, while others expressed concerns about the fairness of the system, especially in the case of higher wages.

When the focus turned to informal workers, concerns arose about higher rates, particularly for those whose income exceeds the minimum wage. Students considered this taxation potentially burdensome for these workers. When comparing contributions between formal and informal workers, they realized that the deductions for informal workers seem excessively high in relation to those with formal employment. This observation raised concerns about the disparity in resources available to these groups and prompted questions about the fairness and equity of the tax system.

The reflections developed in the previous paragraphs can promote learning focused on citizenship, in which the pursuit of knowledge requires students to have "skills that are important for a person to participate in democratic life and to develop critical citizenship" (Alrø and Skovsmose, 2006, p. 140). The process of producing knowledge about payroll deductions is not limited to a financial perspective, but also plays an important role in developing essential skills for active participation in democratic life and the construction of critical citizenship. Similarly, the discussion about the disparity in tax rates not only paves the way for understanding tax issues, but also stimulates critical thinking about social and economic justice, encouraging more active engagement by students in the civic sphere. Thus, this approach aims to provide students not only with an understanding of the practical aspects of tax deductions, but also with a reflection on their social and political implications, strengthening their informed

participation in society.

In the third and final part of the assignment, students continued their discussions, addressing the topic of income tax (IR). In Maria's fictional case, she did not pay this tax before her salary increase and, therefore, had no knowledge of this tax — the same was true for most of the students who participated in the activity. When determining the discount amount, some challenges arose in relation to the necessary calculations. Given the majority's unfamiliarity with the IR table, the mediation of the research professor became essential, providing discussions on how the discount is calculated based on different income brackets.

The complexity encountered by students in calculating income tax highlighted their lack of knowledge about how the tax system works and the income brackets subject to taxation. The intervention of the research professor was decisive, providing guidance on calculating the discount and the different income scales. This mediation allowed students to understand how progressive income tax rates are applied according to the taxpayer's income, in addition to highlighting the importance of integrating Financial Education into a critical approach to Mathematics Education, as proposed by Mazzi and Baroni (2021). According to the authors, this integration goes beyond merely solving exercises, promoting the problematization of pre-established situations and questioning what is considered natural in the financial context (Mazzi and Baroni, 2021).

In discussions about income tax, we recognize that it is a tax on people's income, constituting a source of revenue for the government. By understanding the nature of this tax, students can develop critical awareness and begin to question the appropriate and transparent allocation of the resources collected. This approach strengthens the knowledge necessary for students to deal with their tax obligations, but also encourages informed participation in governance and public policy, contributing to the construction of a more just and fiscally responsible society. In this context, integrating these topics into mathematics education, including financial education, enriches technical understanding and stimulates critical awareness, providing students with tools to engage in social issues. As Skovsmose (2008, p. 23-24) points out, "when mathematics education opens up to issues such as social justice, it is possible to believe in a scenario in which students improve their self-esteem to the point where they can even question authority".

When we addressed the fairness of tax rates, we recorded a significant debate. While some students considered it fair to pay more taxes as their salary increases, others expressed dissatisfaction with this idea, especially in relation to the highest salary bracket. The lack of immediate return and the perception that the amounts deducted are high were mentioned as points of concern.

In exploring the reasons behind changes in income tax rates after a salary increase, students were encouraged to question, debate, and seek solutions to the inequalities that permeate tax policies. These discussions are in line with Frankenstein's (2012, p. 51) view that "the broader purpose of all education is to contribute to the struggle for a more just world". In this sense, the intersection between the discussion of income tax rates and the integration of financial education is particularly relevant. Debates on taxation stimulate critical reflection on social issues and are intertwined with Financial Education, helping students understand the impact of these policies on their lives. By understanding tax principles, students can participate in social debates, as well as make more conscious and informed financial decisions, increasing their autonomy and engagement in the pursuit of a more just and equitable society.

Based on the different parts of the task, the critical approach to financial education was able to foster critical thinking, encouraging students to question the theoretical bases and principles underlying fiscal policies. By discussing tax equality and equity, this approach

encourages reflection on the social and economic impacts of unequal fiscal policies and promotes active engagement in advocating for fairer reforms. Thus, it seeks to contribute to reducing disparities between formal and informal workers, ensuring proportional contributions to the common good. The relationship between Financial Education and social equity responds to issues of fiscal justice, preparing students for more conscious participation and a critical stance towards existing structures, in line with the ideas of Mazzi and Baroni (2021).

In the debate on tax inequalities, Financial Education plays an essential role in training students to understand and analyze the tax system. This prepares them to make informed financial decisions, to engage critically in tax discussions, and to advocate for changes in favor of equity. In this way, it enables them to question the system, understand their own contribution to society, hold representatives accountable, learn about their rights and duties, and, consequently, expand tax justice, as pointed out by Mazzi and Domingues (2021).

By teaching content such as tax rates, percentages, and salary calculations, financial education allows students to assess the impact of deductions on their income, helping them with budget planning and understanding different modalities. However, although fundamental, this understanding is not sufficient to face all financial challenges, since factors such as inflation, interest rates, employment, and access to resources influence the management of each person's finances.

In this scenario, understanding Financial Education goes beyond financial mathematics. Students may master numerical calculations, but often lack understanding of the tax and social implications of these operations. Although essential, financial mathematics cannot be isolated from decision-making, which also involves analyzing the contexts and impacts of financial choices.

This perspective corroborates the emphasis of Baroni and Maltempi (2021, p. 28):

Promoting financial education does not involve the limited task of showing how things work technically in the financial market, how mathematical calculations are performed, or how to plan to be successful in this world, assuming that success is linked to making money and accumulating capital.

The situations highlighted in Maria's scenario underscore the need for an integrated approach to financial education that goes beyond mathematical calculations and incorporates concepts of tax legislation, fiscal policies, contribution systems, and resource distribution. Even if students have the mathematical knowledge to perform calculations, there may be a gap in their understanding of how these calculations relate to their financial reality and the functioning of the tax system.

In this context, financial education plays an important role in helping students understand how tax systems work and their impact on personal finances and collective well-being. By reflecting on the logic of tax rates and analyzing social security contributions and taxes, students become better prepared to make informed financial decisions and participate in public debates on tax policy. This understanding strengthens them as active and responsible citizens, in addition to stimulating critical thinking about how their individual financial actions impact society. This approach is in line with Freire's (1996) vision, which advocates the formation of conscious, responsible, and participatory citizens, capable of promoting social change and contributing to a more just and equitable society.

Therefore, understanding tax implications is an essential element of Financial Education, allowing students to transcend purely numerical learning and develop a more critical and comprehensive view of financial decisions. This approach not only helps them manage

their personal finances more efficiently, but also prepares them to actively participate in social debates on tax and economic policies, contributing to the construction of a more just society.

5 Final Thoughts

The discussions prompted by this study highlighted the importance of a critical approach to financial education in the school context. Analysis of student interactions throughout the proposed activities showed that linking financial education to taxation and the world of work broadened students' understanding of the economic and social impacts of financial decisions. The study revealed that many students were unaware of the criteria for salary deductions and the implications of income tax and social security contributions, which reinforces the need to include these topics in mathematics teaching in an integrated and meaningful way.

In addition, it was observed that students not only developed mathematical knowledge applied to the financial context, but also began to reflect on tax justice and income distribution. This process contributed to the strengthening of a more critical and conscious attitude towards the economic system, enabling them to make more informed decisions in the future. The discussion of tax rates and different forms of taxation stimulated debate on equity and access to labor rights, a central aspect of citizenship education.

Another relevant point was the link between Financial Education and the World of Work, the central theme of this study. Students' entry into the labor market should not be reduced to a mere adaptation to the demands of the current economic system, but understood as a space for dispute and social transformation. The approach adopted in this research showed that, by better understanding the financial aspects of formal and informal work, students began to question the structural inequalities that permeate labor relations and the challenges imposed by the new dynamics of contemporary work, such as precariousness, informality, and changes in social security policies.

Furthermore, reflection on progressive tax rates and salary deductions allowed students to question the current tax logic, often perceived as distant from their reality. By integrating mathematics into a broader analysis of economics and fiscal policy, the study demonstrated that financial education can play a fundamental role in training citizens to be better prepared to claim their rights and understand the impacts of public policies on their lives.

Despite the results presented, some limitations of this research need to be acknowledged. The study was conducted with a specific group of technical high school students, which may limit the generalization of the results to other educational realities. In addition, the pedagogical approach adopted, based on Scenarios for Investigation, proved promising but required flexibility in teaching organization, posing a challenge for schools with rigid curricula or reduced class hours. Continuing these discussions throughout the school year, with interdisciplinary approaches and greater conceptual depth, could further strengthen the results observed.

Given the evidence discussed, this study reaffirms the importance of Financial Education committed to a critical understanding of economic structures, overcoming individualistic and market-oriented perspectives. By linking mathematical knowledge with topics such as taxation, labor rights, and tax justice, the research reveals the transformative potential of Mathematics Education when placed in the context of the World of Work. The inclusion of pedagogical practices that promote critical thinking and the contextualization of financial content not only broadens students' conceptual mastery but also mobilizes them to reflect on social inequalities and participate in informed public debates. Thus, the proposal contributes to the formation of conscious individuals, capable of understanding, questioning, and transforming the economic realities that affect their lives.

Finally, this study opens the way for new investigations into the integration of financial education into the school curriculum. Future research may explore different methodological approaches, expanding the analysis to other educational segments and deepening the relationship between financial education and citizenship. In addition, it would be pertinent to investigate the impacts of a longitudinal approach, following students throughout their education and verifying how the development of financial and mathematical skills influences their decisions in adult life. Thus, it is hoped that the reflections presented here will encourage the development of educational practices that promote meaningful learning and contribute to the construction of a more just and equitable society.

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Conflicts of Interest

The author declares that there are no conflicts of interest that could influence the results of the research presented in this article.

Data Availability Declaration

The data produced and analyzed in this article will be made available upon request to the author.

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References

ALRØ, Helle; SKOVSMOSE, Ole. *Diálogo e aprendizagem em Educação Matemática*. Tradução de Orlando de Andrade Figueiredo. Belo Horizonte: Autêntica, 2006.

AZEVEDO, Suedy Santos. *Educação Financeira nos livros didáticos de Matemática dos Anos Finais do Ensino Fundamental*. 2019. 131f. Dissertação (Mestrado em Educação Matemática e Tecnológica). Universidade Federal de Pernambuco. Recife.

BARONI, Ana Karina Cancian; MALTEMPI, Marcus Vinícius. A Educação Financeira e a formação do professor de Matemática: uma compreensão e algumas possibilidades. In: BARONI, Ana Karina Cancian; HARTMANN, Andrei Luís Berres; CARVALHO, Cláudia Cristina Soares. (Org.). *Uma abordagem crítica da Educação Financeira na formação do professor de Matemática*. Curitiba: Appris, 2021, p. 23-35.

BRASIL. Casa Civil. *Decreto n. 7.397, de 22 de dezembro de 2010*. Institui a Estratégia Nacional de Educação Financeira — ENEF, dispõe sobre a sua gestão e dá outras providências. Brasília: Diário Oficial da União, 23 dez. 2010.

DAMIANI, Magda Floriana. Sobre pesquisas do tipo intervenção. In: *Anais do XVI Encontro Nacional de Didática e Prática de Ensino*. Campinas, 2012, p. 2882-2890.

DELESPOSTE, Tatiana. *Educação Financeira em uma perspectiva crítica para o Mundo do Trabalho: uma proposta didática com estudantes do Ensino Médio Integrado*. 2023. 168f.

Dissertação (Mestrado em Educação em Ciências e Matemática). Instituto Federal do Espírito Santo. Vila Velha.

DELESPOSTE, Tatiana; SÁ, Lauro Chagas. *Educação Financeira em uma perspectiva crítica para o Mundo do Trabalho*. 2023. 80f. Produto Educacional (Mestrado em Educação em Ciências e Matemática). Instituto Federal do Espírito Santo. Vila Velha.

FERRAZ, Jessika Cristina. A Educação Financeira e sua importância na gestão financeira pessoal. *Revista Ciência da Sabedoria*, v. 2, n. 2, 2021.

FIGUEIREDO, Gabriele Barrilli; BEGOSSO, Luiz Carlos. Educação financeira: um jeito mais prático de aprender. *Revista Intelecto*, v. 3, 1-10, set. 2020.

FRANKENSTEIN, Marilyn. Beyond math content and process: proposals for underlying aspects of social justice education. In: STINSON, David; WAGER, Anita. (Ed.). *Teaching Mathematics for social justice: conversations with educators*. Virgínia: NCTM, 2012. p 49-62.

FREIRE, Paulo. *Pedagogia da Autonomia: saberes necessários à prática educativa*. São Paulo: Paz e Terra, 1996.

HARTMANN, Andrei Luís Berres.; MARIANI, Rita de Cássia Pistóia; MALTEMPI, Marcus Vinícius. Educação Financeira no Ensino Médio: uma análise de atividades didáticas relacionadas a séries periódicas uniformes sob o ponto de vista da Educação Matemática Crítica. *Bolema*, v. 35, n. 70, p. 567-587, ago. 2021. <https://doi.org/10.1590/1980-4415v35n70a02>

LIMA, Adriana de Souza; MAZZI, Lucas Carato. *Salário-mínimo, orçamento pessoal, sobrevivência e dignidade*. In: BARONI, Ana Karina Cancian; HARTMANN, Andrei Luís Berres; CARVALHO, Cláudia Cristina Soares. (Org.). *Uma abordagem crítica da Educação Financeira na formação do professor de Matemática*. Curitiba: Appris, 2021, p. 97-115.

LIMA, Reinaldo Feio; VILHENA, Vera Débora Maciel; GIORDANO, Cassio Cristiano. Research which investigated Financial Education in the latest editions of ENEM, CIBEM and SIPEM (2021/2022). *Educação Matemática Debate*, v. 8, n. 15, p. 1-10, ago. 2024. <https://doi.org/10.46551/emd.v8n15a08>

MARÇAL, Paulo Henrique; MILANI, Raquel. Contributions of the Landscapes of Investigation to critical learning in the context of Field Education. *Educação Matemática Debate*, v. 8, n. 15, p. 1-16, 2024. <https://doi.org/10.46551/emd.v8n15a14>

MAZZI, Lucas Carato; BARONI, Ana Karina Cancian. Diálogos possíveis entre Educação Financeira e a Educação Matemática Crítica. In: BARONI, Ana Karina Cancian; HARTMANN, Andrei Luís Berres; CARVALHO, Cláudia Cristina Soares. (Org.). *Uma abordagem crítica da Educação Financeira na formação do professor de Matemática*. Curitiba: Appris, 2021, p. 37-54.

MAZZI, Lucas Carato; DOMINGUES, Nilton Silveira. Educação Financeira na Educação Básica: um foco nas percepções dos estudantes. *Em Teia*, v. 12, n. 2, p. 1-24, 2021. <https://doi.org/10.51359/2177-9309.2021.250469>

MELO, Danilo Pontual; PESSOA, Cristiane Azevêdo do Santos. Educação Financeira no Ensino Médio: possibilidades. *ReBECEM*, v. 3, n. 2, p. 488-513, 2019.

<https://doi.org/10.33238/ReBECEM.2019.v.3.n.2.22536>

OECD — Organization for Economic Cooperation and Development. *Recommendation on Principles and Good Practices for Financial Education and Awareness*. Paris: Directorade for Financial and Enterprice Affairs, 2005.

PESSOA, Cristiane Azevêdo do Santos. Educação Financeira na Perspectiva da Educação Matemática Crítica em Livros Didáticos de Matemática dos Anos Finais do Ensino Fundamental. In: *Anais o XII Encontro Nacional de Educação Matemática*. São Paulo, 2016, p. 1-12.

PRAIS, Jacqueline Lidiane de Souza; SARAIVA, Elihebert; FONSECA, Odair Teixeira. Do conteúdo à temática da Educação Financeira: uma análise de indicadores do conhecimento da população e da proposta curricular brasileira. *Perspectivas da Educação Matemática*, v. 16, n. 41, p. 1-16, 2023. <https://doi.org/10.46312/pem.v16i41.16525>

SÁ, Lauro Chagas. *Educação Matemática na Educação Profissional e Tecnológica: contribuições para uma formação integral em resistência à precarização do trabalho*. 2021. 122f. Tese (Doutorado em Ensino e História da Matemática e da Física). Universidade Federal do Rio de Janeiro.

SANTOS, Laís Thalita Bezerra; PESSOA, Cristiane Azevêdo do Santos. Educação Financeira na perspectiva da Educação Matemática Crítica: uma reflexão teórica à luz dos ambientes de aprendizagem de Ole Skovsmose. *Revista BoEM*, v. 4, n. 7, p. 23-45, 2016.

SARAIVA, Karla Schuck. Os sujeitos endividados e a Educação Financeira. *Educar em Revista*, v. 33, n. 66, p. 157-173, out./dez. 2017. <https://doi.org/10.1590/0104-4060.53867>

SILVA, Amarildo Melchiades; POWELL, Arthur Belford. Um programa de Educação Financeira para a Matemática Escolar da Educação Básica. In: *Anais do XI Encontro Nacional de Educação Matemática*. Curitiba, 2013, p. 1-17.

SILVA, Bruno Araújo Bispo; MONTEIRO, Jamir Mendes. Educação Financeira: um estudo sobre a sua importância na gestão pessoal. *Research, Society and Development*, v. 12, n. 6, p. 1-15, 2023. <http://dx.doi.org/10.33448/rsd-v12i6.42125>

SKOVSMOSE, Ole. Cenários para a investigação. *Bolema*, v. 13, n. 14, p. 66- 91, 2000.

SKOVSMOSE, Ole. *Desafios da reflexão em Educação Matemática Crítica*. Tradução de Orlando de Andrade Figueiredo; Jonei Cerqueira Barbosa. São Paulo: Papirus, 2008.