

Aspects of Financial Education teaching from the perspective of Basic Education Mathematics teachers

Priscila de Oliveira e Silva

Universidade Estadual Paulista

Rio Claro, SP — Brasil

✉ priscila.o.silva@unesp.br


 0000-0001-7212-5994

Lucas Carato Mazzi


Universidade Estadual Paulista


Rio Claro, SP — Brasil

✉ lucas.mazzi@unesp.br

 0000-0003-3395-3724



2238-0345 

10.37001/ripen.v15i1.3952 

Received • 31/05/2024

Approved • 17/10/2024

Published • 02/03/2025

Editor • Gilberto Januario 

Abstract: Brazilian education has undergone curricular changes in recent years, increasingly transforming the school environment into institutions that prioritize the formation of neoliberal individuals. In this context of strengthening the neoliberal agenda in education, Financial Education emerges as a new player, disseminating neoliberal ideologies and capitalist ideals. This article seeks to understand aspects of Financial Education teaching that emerge from interviews with Basic Education teachers who address the topic in their Mathematics classes or specific subjects. In addition to discussing the notion of Financial Education from its origin to its inclusion in Brazilian schools, the study analyzes interviews following the phenomenological approach. The analysis reveals that, despite the potential connection between Financial Education and Mathematics, it is crucial to discuss the topic transversally, highlighting the importance of Financial Education that transcends individualistic ideals, contributing to the formation of critical and conscious citizens. It is necessary to pay attention to the teaching of Financial Education, as schools adopt these ideals and end up contributing to the spread of neoliberal ideologies and the promotion of capitalist ideals.

Keywords: Financial Education. Neoliberalism. Interdisciplinarity. Mathematics Education. Dialogue.

Aspectos sobre la enseñanza de la Educación Financiera desde la perspectiva de los profesores de Matemáticas de la Educación Básica

Resumen: No se deben utilizar citas bibliográficas. La educación brasileña ha sufrido modificaciones curriculares en los últimos años, transformando cada vez más el ambiente escolar en instituciones que privilegian la formación de individuos neoliberales. En este escenario de fortalecimiento de la agenda neoliberal en la Educación, la Educación Financiera surge como una nueva protagonista, difundiendo ideologías neoliberales e ideales capitalistas. Este artículo busca entender los aspectos de la enseñanza de la Educación Financiera que emergen en entrevistas con profesores de la Educación Básica que abordan el tema en sus clases de Matemáticas o en asignaturas específicas. Además de discutir la noción de Educación Financiera desde su origen hasta su inclusión en las escuelas brasileñas, el estudio analiza entrevistas siguiendo el enfoque fenomenológico. El análisis revela que, a pesar de la posible conexión entre Educación Financiera y Matemáticas, es crucial discutir el tema de manera transversal, destacando la importancia de una Educación Financiera que trascienda los ideales individualistas, contribuyendo a la formación de ciudadanos críticos y conscientes. Es necesario prestar atención a la enseñanza de la Educación Financiera, ya que las escuelas adoptan estos ideales y terminan contribuyendo a la difusión de ideologías neoliberales y al fomento de los

ideais capitalistas.

Palabras clave: Educación Financiera. Neoliberalismo. Interdisciplinariedad. Educación Matemática. Diálogo.

O ensino da Educação Financeira na perspectiva de professores de Matemática da Educação Básica

Resumo: A Educação brasileira tem sofrido modificações curriculares nos últimos anos, transformando cada vez mais o ambiente escolar em espaços institucionais que privilegiam a formação de indivíduos neoliberais. Nesse cenário de fortalecimento da agenda neoliberal na Educação, a Educação Financeira surge como uma nova atriz, disseminando ideologias neoliberais e ideais capitalistas. Este artigo busca entender aspectos do ensino da Educação Financeira emergentes em entrevistas com professores da Educação Básica que abordam o tema em suas aulas de Matemática ou disciplinas específicas. Além de discutir a noção de Educação Financeira desde sua origem até sua inserção nas escolas brasileiras, este estudo analisa entrevistas seguindo a abordagem fenomenológica. A análise revela que, apesar da ligação potencial entre Educação Financeira e Matemática, é crucial discutir o tema de maneira transversal, destacando a importância de uma Educação Financeira que transcenda ideais individualistas, contribuindo para a formação de cidadãos críticos e conscientes. É necessário se atentar para o ensino da Educação Financeira, uma vez que as escolas assumem esses ideais e acabam contribuindo para a disseminação de ideologias neoliberais e o estímulo dos ideais capitalistas.

Palavras-chave: Educação Financeira. Neoliberalismo. Interdisciplinaridade. Educação Matemática. Diálogo.

1 Introduction

In recent years, Brazilian Basic Education has undergone numerous curricular changes, increasingly transforming our schools into institutional spaces that prioritize the training of neoliberal individuals (Laval, 2019). In 2017, for example, Law No. 13,415/2017 amended the Law of Directives and Bases of National Education, structurally modifying Secondary Education (Brazil, 2017a).

According to Jacomini (2022, p. 268), this reform “implies a reduction in access to knowledge for young Brazilians; but not for everyone, since the elites and the middle classes will not allow a simplified curriculum in the schools their children attend”. Thus, a neoliberal trend in education can be noted, with those who have financial resources being able to choose a quality education, in contrast to the most vulnerable classes, who will be exclusively qualified for the job market.

In that year and also in 2018, the National Common Curricular Base (BNCC) was approved for the stages of Early Childhood Education and Elementary Education, as well as High School, respectively (Brasil, 2017b, 2018). This document became a guide for state curricula – and in some cases, it became a curriculum –, having as its structuring basis the interests of large corporations, given “the institutional support of the main business foundations that work on the education agenda, such as Instituto Unibanco, Instituto Ayrton Sena, Fundação Lemann, Instituto Natura, among others, which have great influence in the definition of public policies in the area” (Lopes, 2019, p. 52).

It is in this scenario of changes and strengthening of the neoliberal agenda in educational spaces that a new actor emerges: Financial Education. Depending on the interests and

understanding assumed, this can contribute to the dissemination of neoliberal ideologies and the stimulation of capitalist ideals.

In the context of Mathematics Education, this topic has become of interest to several researchers (Silva & Powell, 2013; Melo & Pessoa, 2019; Mazzi & Baroni, 2021; Lima, 2023; Silva, 2024), who have focused on reflecting on what this so-called “Financial Education” could be, which, without any concern for teacher training in the classroom, has opened the doors of our schools wide open.

Since there is no single understanding of the expression, we consider it essential to make our vision explicit. We understand Financial Education as a set of knowledge that contributes to a broader understanding of the neoliberal system, which affects us in different ways and distinct spheres. In our view, discussing Financial Education means questioning the impacts of capitalism and the pursuit of infinite profit on our planet; reflecting on unbridled consumption and the environmental consequences caused by this pursuit of maximum wealth; questioning why so many people go hungry while tons of food are wasted; among many other reflections that expose social inequalities. We conclude that Financial Education taken in this light, can contribute to a possible social transformation.

Given the breadth of themes that permeate Financial Education, this article, an excerpt from a recently defended master's research (Silva, 2024)¹, adopting a phenomenological approach, aims to understand which aspects of teaching Financial Education emerge in interviews with Basic Education teachers who already work with the topic in their Mathematics classes and/or teach specific subjects on the topic.

To achieve this objective, we will now briefly discuss the concept of Financial Education from different perspectives, from its creation at the beginning of the 21st century until it reaches Brazilian schools. We will then present the methodology used and how the data was produced, and then discuss some of the teachers' statements regarding the aforementioned objective. Finally, we will present our final considerations, followed by the references that supported this study.

2 Financial Education

In 2003, the Organization for Economic Cooperation and Development (OECD)² developed the “Financial Education Project”, aiming to identify and evaluate the efficiency of the different programs existing at the time and to suggest political actions to improve what they understood as awareness and Financial Education (OECD, 2005). The 34 member countries of the Organization at the time, and some non-member countries, such as Brazil, began to be guided by the guidelines developed by the OECD to financially educate their citizens. To this end, a document entitled: “Recommendations on principles and good practices for Financial Education and awareness” (OECD, 2005) was generated, which presents a set of recommendations to the governments of the member countries. This document can contribute to the development of actions aimed at Financial Education, which, in the understanding of the

¹ The dissertation was presented in the Postgraduate Program in Mathematics Education, at the Universidade Estadual Paulista (Unesp – Rio Claro), written by the first author and supervised by the second author. In this research, the author aimed to understand how Financial Education is presented through the perspective of Mathematics teachers who work in Basic Education. The data were constructed through interviews with these teachers, whose transcripts were analyzed following the rigor of qualitative research, developed according to the phenomenological approach. From the analysis, through the phenomenological reduction movement, three categories emerged during our investigation, namely: ‘Financial Education Training’, ‘Teaching Material’, and ‘Aspects of Teaching Financial Education’.

² A unique forum in which the governments of member countries work together to “tackle” the economic, social, and environmental challenges of globalization.

OECD, is:

[...]the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being (OECD, 2005, p. 13).

This concept was adopted by some countries in the development of their Financial Education proposals, such as Brazil. In 2007, the Brazilian government formed a working group with representatives from the government, the private sector, and civil society with the aim of creating a proposal for a National Strategy for Financial Education (Silva & Powell, 2013).

By decree no. 7,397, of December 22, 2010 (Brazil, 2010), the Brazilian government established the National Strategy for Financial Education (ENEF), intending to promote Financial Education and “contribute to strengthening citizenship, the efficiency and solidity of the national financial system and the making of conscious decisions by consumers” (Brazil, 2010).

With those concerns in mind, ENEF planned to introduce Financial Education into schools with the aim of educating children and adolescents to be aware of how they use money and develop habits and behaviors that avoid consumerism and waste. Furthermore, with the Strategy, it was hoped that schools would be able to promote values, knowledge, and skills that are important for autonomous control of financial life, contributing to complementing the education of citizens.

Despite the beautiful words mentioned above, ENEF, influenced by the OECD ideals, presents a Financial Education proposal aimed at the individual in a movement that focuses on money, demonstrating that economic development is the greatest concern, disregarding reflections on the social and political context, among other aspects that go beyond the individual aspect and that permeate society as a whole.

In the OECD document in 2005, it was also recommended that Financial Education should begin at school, with proposed actions that focused on personal finances, considering that this training could influence students with their financial habits and attitudes (OECD, 2005). In other words, the inclusion of Financial Education in the school curriculum, according to the OECD (2005) and, later, the ENEF (Brazil, 2010), is based on the principle that the earlier an individual learns about finances, the greater their chances of adopting conscious consumption habits and drawing up a life plan, superficially addressing the entire social, cultural, political and economic context in which such individuals are inserted.

However, it is worth emphasizing once again that the documents mentioned before do not problematize aspects such as the concentration of wealth, the lack of guaranteed basic rights, high unemployment rates, and tax rates affecting the poor population more than the financial elite and other aspects. This vision of Financial Education delegates to the individual the responsibility for changing the entire scenario – although, deep down, we understand that their intention is not social transformation but the maintenance of the current capitalist system.

Melo and Pessoa (2019) argue that Financial Education, on which the OECD and private financial agents are based, does not enable – and does not aim – to develop a critical and reflective awareness about collective financial issues, as it guides people to organize their finances so that they can consume the products offered. In other words, it commercializes

Financial Education, limiting the topic to discussions focused on personal finances in favor of consumption.

In the same vein, Mazzi and Baroni (2021, p. 40) argue that the conception and activities promoted by the OECD and ENEF have a market-based view of Financial Education, suggesting “a passive role for citizens, who are only responsible for consuming financial products, and in the best possible way”. The authors also point out that this definition proposes to individuals “an improved understanding of financial concepts and products”, and it can, therefore, be assumed that what should be done is to teach people to consume without looking at general problems in society, such as social inequality, unemployment, hunger, among many other issues that affect the individual, in a movement of views that seem to privilege education for consumption, in addition to strengthening the capitalist system (Mazzi & Baroni, 2021).

Corroborating the perspective of these authors, we question this view promoted by the OECD and, consequently, by ENEF. We understand that Financial Education should be approached in a way that would promote reflection and critical thinking, expanding the field of financial knowledge and going beyond individualism.

Bringing the discussion to Basic Education, Silva and Powell (2013) elaborate on the idea of School Financial Education (SFE). For the authors, the Financial Education required in schools can be seen as

[...] a set of information through which students are introduced to the world of money and encouraged to develop an understanding of finance and economics, through a teaching process that enables them to analyze, make informed judgments, make decisions, and have critical positions on financial issues involving their personal, family, and societal lives (Silva e Powell, 2013, p. 12, our translation).

Based on this understanding, we understand that the purpose of SFE is to provide students with an opportunity to understand the world of money, enabling them to understand and use skills in finance and economics, as well as develop critical thinking skills. However, such reflections are still shallow when it comes to truly criticizing the political, economic and social system in which we live. From this perspective, Baroni (2021, p. 235) highlights that, for Financial Education to be effective in Basic Education, paths are needed for discussions to go beyond the mathematical exploration of problems, breaking away from technical and mechanized approaches, “in favor of a general and political education, free from the purpose of maintaining the demands of the capitalist system, based on unbridled consumption”.

The author also highlights that in work with Financial Education at school, “[...] the structural perception of the society in which they live must be prioritized in educational action, as well as the development of a critical awareness of their role in the environment in which they live and interact” (Baroni, 2021, p. 21). In other words, financial education cannot only be associated with how calculations are performed or how the financial market technically works; it must be aligned with the purpose of contributing to the development of people and society, in which people are the most precious asset, not the accumulation of capital. In this way, we corroborate the provisions of Mazzi, Hartmann and Pessoa (2024, p. 21) when they consider that financially educating a person

[...] it means elucidating the existence of a perverse neoliberal system that seeks infinite profit, without worrying about destroying people, the environment, or whatever else might appear along the way as an obstacle to achieving this endless wealth. Being financially educated means knowing how capitalism impacts human

relationships and proposing ways to combat and transform the injustices it causes and reinforces, aiming for Social Justice.

In this way, we seek a Financial Education that can invite students to think critically about the economic and social situations that surround them, aiming at improving the quality of life in the personal, family, and social spheres. This is established through the problematization of the implications of the neoliberal system in everyone's life.

Taking this school context into account, we must emphasize that Financial Education becomes a mandatory theme in the Basic Education Curricula with the approval of the National Common Curricular Base (Brazil, 2018). In this document, the theme is considered transversal. However, Mazzi, Oliveira, and Lima (in press) point out that the expression “Financial Education” appears almost exclusively in the Mathematics curricular component, being mentioned only once in the Humanities and Applied Social Sciences, but without connection with the specific competencies or skills of this area. We therefore highlight the leading role of Mathematics and, consequently, assign to the Mathematics teacher the role of financially educating students in Basic Education.

With this, we emphasize the concern with the training of teachers who work and will work with Financial Education. Furthermore, it is worth drawing attention to the reformulation of the High School system in the state of São Paulo for 2024, the so-called New High School. We reinforce this concern since Financial Education was included as a subject and is being studied by students in the 8th and 9th grades of Elementary School and all High School students.

With the inclusion of this subject, discussions about Financial Education become effective and frequent in Basic Education (final years of High School) in the state of São Paulo. In this sense, we highlight two problems related to the need for teacher training: the importance of these teachers being prepared and, consequently, the concern with which concepts of Financial Education will be established in this school context.

With this, we point to data from the study by Baroni (2021), regarding initial training courses for Mathematics teachers, indicating that the topic is strongly anchored in the field of Financial Mathematics. From this perspective, it is necessary to be aware of the role of the Mathematics teacher so that he or she “is not reduced to teaching how to consume and teaching the calculations involved in financial negotiations, as if calculating and planning were sufficient actions to make a decision” (Baroni, 2021, p. 177).

In this context, corroborating the author, we highlight the importance of these teachers having the opportunity to decide on the concept of Financial Education that they will develop during their teaching. This makes it possible for teachers to critically analyze the reality and position themselves professionally. Therefore, we understand that Financial Education, based on a critical perspective, goes beyond economic discussions and issues related to personal finances, addressing topics such as social inequality, unemployment, educational deficiencies, consumption, and the environment, among other aspects that go beyond the individual. Thus, we advocate a Financial Education that promotes reflection and critical thinking, contributing to the development of people and societies, necessary elements in the formation of citizens.

3 Methodological Approach

To develop the study, we assume qualitative research with a phenomenological approach, as we understand that, during the investigation trajectory, it is possible to perceive what is shown about Financial Education with the gaze directed by the research question. Considering also that in the phenomenological approach, what is seen is described and analyzed

rigorously, allowing us to expose what is shown in the perception, we seek to understand in this article “which aspects about the teaching of Financial Education emerge from interviews with Mathematics teachers who work with the theme”.

Given these aspects, the data were compiled from interviews with Mathematics teachers³ who, directly or indirectly⁴, teach Financial Education in Basic Education. Regarding phenomenological interviews, Dale (1996) points out that the researcher/interviewer should encourage the interviewee to reflect on their experience and detail it as much as possible. Raniere and Barreira (2010) emphasize that the collection procedure that enables access to such experiences is the elaboration of an interview script, open and directed to them, in which the researcher/interviewer must direct the interview to the subject's own experience. With this, we understand that, through interviews, it is possible for the interviewed subjects to recover the experience lived about the phenomenon questioned, which, in the research, is Financial Education.

The method adopted to select the teachers to be interviewed consisted of analyzing journals that produced thematic issues on Financial Education between 2018 and 2021⁵, namely *Tangram*, *Em Teia*, *Recebem e Boem*. We sought to identify teachers who, when publishing on Financial Education, clearly mentioned their work in Basic Education.

After the process of identifying the teachers, inviting them to participate in the research, and receiving their acceptance, the interviews were conducted. Once we had the speeches, we transcribed the statements of each of the interviewees, which were later analyzed, following the rigor of the adopted methodology.

With the transcriptions of the speeches of each participant, maintaining reliability to what was said, we moved on to an interpretative movement, seeking to understand the meanings and significances denoted in the description (Bicudo, 2011). For the author, this description shows:

[...] the movement of acts of consciousness. It is limited to reporting what is seen and what is felt, that is, the experience as lived by the subject. It does not allow evaluations and interpretations, only the exposition of what is experienced as felt or perceived. However, the concern of Phenomenology is not to dwell on the description of the experience focusing on the nuances of its individuality, but rather to show the structures in which the reported experience occurs, revealing, in this description, its universal structures. (Bicudo, 2011, p. 45, our translation).

This means that we consider, at this moment, the experience lived by the subject and the circumstances surrounding him/her, knowing that Phenomenology does not stop only at describing the reported experiences but seeks to transcend the individual narrated in the description. To this end, it is necessary to advance towards an interpretative movement, seeking to understand the senses and meanings denoted in this description (Bicudo, 2011). From this perspective, the procedure of interpretative analysis of the descriptions integrates two distinct moments, but not separate from each other: Ideographic Analysis and Nomothetic Analysis.

In the Ideographic Analysis, we first read the entire dialogue with the objective of

³ We emphasize that the research has approval from the Research Ethics Committee of the Bauru Faculty of Sciences, São Paulo State University “Júlio de Mesquita Filho”, with opinion number 6,803,459.

⁴ Teachers who teach a specific Financial Education subject or who work on the topic in their Mathematics classes.

⁵ The period chosen was between 2018 and 2021, because, with the implementation of the BNCC 2017/2018, the theme becomes mandatory in Basic Education and the year 2021 is the one that precedes the beginning of the development of the research.

understanding, in general, what was presented by the subjects. Then, the discourse was read numerous times, seeking to interpret and understand the meaning of what was said by the interviewees concerning the guiding question of this research. Once the construction of the ideographic analysis tables (authors' choice) referring to the discussions of each interview was completed, we sought to understand “*what aspects of teaching Financial Education emerge from interviews with Mathematics teachers who work with the theme?*”

To illustrate how the Ideographic analysis framework was constructed, we will use the following excerpt. The first column is called *Units of Meaning*, presenting the passages from the interviews that, in our opinion, are significant for the question. These Units are identified with an alphanumeric code, in which the first number indicates the interview and the second the Unit of Meaning. For example, the code “US3.12” represents the eleventh Unit of Meaning of the third interview. This process was carried out to preserve the identity of the interviewee.

The second column presents the *Contextualized Assertions* based on words highlighted in the Units of Meaning. These words are important for understanding what was said by the interviewee since, through them, interpretative considerations are made, using sources such as the Portuguese Language Dictionary, the Philosophy Dictionary and articles that deal with the subject. The third column contains a summary of what was said and interpreted, a summary transcribed in the researcher's language, to demonstrate her understanding of the phenomenon perceived. In the last column, the core ideas that constituted the movement of ideographic analysis are expressed. In the continuation of this text, we present this first movement, that is, the Ideographic Analysis of each of the interviews and, consequently, the movement of Nomothetic Analysis.

Table 1: Ideographic Analysis Excerpt

Units of Meaning	Contextualized assertions	Transcription into the researcher's language	Core ideas
US3.12 [...]and then, when I say, I invite students to reflect on economic and financial situations, I am creating here, I am taking a stand, I am saying... So... sometimes, I will talk about money, I will talk about overdraft, I will talk about credit cards, I will talk about the Casas Bahia promotion, I will talk about meat, but I will also talk about the situation of the bone, I will talk about the picanha [...]. So, it is economic and financial, which is related to acquisition, planning, use and restitution of money in a critical and well-founded way [...].	“Criticism creates the necessary intellectual discipline by asking questions of what is read, of what is written, of the book [...]” (Freire; Shor, 1986, p. 15).	The development of Financial Education based on an invitation to reflect refers to discussions of economic and financial situations that involve both individual and collective perspectives as a society in a “ <i>critical and well-founded way</i> ”.	Financial Education from a critical perspective.

Source: survey data.

We return to the core ideas and lead them to the first convergences, in which we seek the generalization of meanings about the essence of the phenomenon (Financial Education), marking the first moment of Nomothetic Analysis.

In Nomothetic Analysis, we seek a transition from the individual level to the general level, articulating convergences of meanings and significance of what is said individually, that

is, because of the convergences elaborated by Ideographic Analysis, broader categories are established “which are the generalizations made from the convergences (or Open Categories) of the units of meaning” (Fini, 1994, p. 31). Thus, having found the Convergence Categories, we begin the third and final stage suggested by Bicudo (2012): understanding/interpretation, which allows the researcher to explain the categories of analysis that, open to interpretation, allow him to discuss, in light of the theoretical framework assumed, what is shown about the phenomenon in question.

Therefore, with Ideographic Analysis, and consequently with Nomothetic, we articulate open categories that express the meanings of the phenomenon investigated. Thus, in the sequence, we dedicate attention to the interpretation of one of them, which discusses aspects of the teaching of Financial Education in Basic Education.

4 Financial Education teaching aspects

When interpreting this category, we paid attention to how the teachers participating in the research expressed their concerns and views on Financial Education, especially their perspectives on the development of this topic. The discussions in this category are supported by our previously presented understandings of Financial Education, particularly on problematizing Financial Education, addressing issues such as Financial Education worked on in a transversal manner: the development of Financial Education and its relations with Mathematics; and the construction of Financial Education in a movement of reflection beyond the individual.

Throughout the interviews, the participants demonstrated, in their statements, a concern with the teaching of Financial Education, both in terms of the consequences concerning training and teaching materials and with the development of the topic itself in the classroom. In this development process, transversality is exposed as an essential element since Financial Education demonstrates the potential to work with varied themes and dialogues with different areas of knowledge, as pointed out by Baroni (2021). This perspective is evidenced in the statements of the interviewees:

US4.24 I think that Financial Education allows us to connect the contents. So, you can talk about History, Geography and Mathematics together. It allows you to talk about money, which I think is extremely important too. It allows you to talk about management. So, time management, resource management, emotion management. For me, these are the four reasons to work on Financial Education in the classroom: connection, money, management and collectivity. Interdisciplinarity based on Financial Education.

US2.19 It is not just Financial Education, but Financial Education coupled with the various areas of knowledge. And Financial Education helps us to think a little about this, it is not the savior of anything, but it is that point of light that helps us to think within our discipline while we are teaching content, while we are building, while we are sharing information, while we are expanding visions [...]. Financial Education in an interdisciplinary way, as a driver of reflections in teaching practice.

In the first Unit of Meaning, the interviewee points out, according to her perspective, four points of relevance when developing Financial Education in the school context. They are connection, money, management, and collectivity. Furthermore, she emphasizes the theme as a potentializer of connections between content, providing interdisciplinarity and individual and

collective reflections. Regarding the second Unit of Meaning highlighted, Financial Education is indicated as an interdisciplinary field, a tool that fosters the teacher's movement of reflection within their practice as a teacher.

In the same direction, Campos (2015) defends the insertion of Financial Education in schools “as a transversal theme that addresses the various financial-economic issues and current events [...]” (Campos, 2015, p. 223). Corroborating this author, Hartmann (2021) understands that Financial Education should be approached in a transversal or interdisciplinary way, not only in the Math classroom. Therefore, it is necessary to reflect and discuss the contents of this area so that this unique relationship can be overcome through connections with other disciplines.

According to Tomaz and David (2008), interdisciplinarity can be understood as an approach to the teaching process in which it is possible to have interrelations between disciplines and other areas of scientific knowledge. For Fazenda (1979), this relationship occurs through the communication of ideas or even through the integration of concepts. The author also states that the term is used to characterize the collaboration between different disciplines or heterogeneous sectors of a single science.

Baroni's studies (2021) highlight the importance of the presence of Financial Education in different spaces, enabling “transdisciplinary actions, which achieve more than the dialogue between different disciplines, but the overcoming of the boundaries established between them in the school culture” (Baroni, 2021, p. 238). Other investigations have also been carried out in this direction, for example, those of Frederic (2018) and Silva (2016). The first developed transdisciplinary activities with 6th-grade students of Elementary School, and the second had the scenarios for investigation (Skovsmose, 2000) considered for transdisciplinary projects of Financial Education, which motivated teachers and learning. Given these aspects, we also present other teaching views related to these considerations:

US2.11 So, it involves a series of issues that Financial Education needs to look at. It needs to look at the issue of work, the issue of informality, the issue of access to education, because often, in order to have access to work, you have to have access to education.

US4.24 I think that Financial Education allows us to connect the contents. So, you can talk about History, Geography and Mathematics together. It allows you to talk about money, which I think is extremely important too. It allows you to talk about management. So, time management, resource management, emotion management [...].

The understandings established in Meaning Units US2.11 and US4.24 reinforce the importance of Financial Education being developed in a transversal way, working with social issues, such as work, and access to education, that is, with issues beyond personal and consumer finances, focusing on the individual. For Delesposte and Sá (2023), it enables the development of critical thinking on various topics, especially those related to the world of work. The authors state that for this to be effective, the topic needs to be addressed along with issues that deal with changes and impacts on the lives of workers. Although we corroborate these statements and the aforementioned authors, we must emphasize that, when referring to Basic Education, we recall that the National Common Curricular Base (Brazil, 2018), although indicating Financial Education as transversal and integrative, links these subjects, mostly, to the area of Mathematics. In this way, we point out Units of Meaning that expose this connection between Financial Education and Mathematics, since the act of financial education in Basic Education

was attributed especially to Mathematics teachers.

US2.18 I think that transversality brings this richness in this sense. [...] My justification for Financial Education is that it opens up a space within the Mathematics discipline for us to connect with these socioeconomic, political, and environmental issues that we experience. I believe in the importance of Financial Education in Basic Education, in this sense, in opening up space for discussion and bringing up relevant topics that make people realize their place in the world. Mathematics with social issues.

US3.2 We can benefit from the content [...]. And when I talk about Financial Education, I can take advantage of a Financial Mathematics class, and I can take advantage of a fractions class. I can take advantage of geometric progression when I'm talking about compound interest, and I can take advantage of direct and inverse proportionality [...]. And, in all of these contexts, I can create Financial Education environments. [...].

The interviewee indicates, in US2.18, the potential of Financial Education to open spaces within the Mathematics discipline, allowing the teacher to connect the socioeconomic, political, and environmental issues of society in general, also enabling the discussion of relevant topics beyond the individual and the raising of reflections on the place “in the world” of students. In the following Unit of Meaning, the teacher also explains that it is possible to create Financial Education environments through numerous mathematical concepts.

Junior and Jurkiewicz (2016, p. 83) clarify the concept of School Financial Education Environment (SFE), emphasizing that they are created “when teachers, students and/or researchers invite teachers, students and/or researchers to think about financial issues that involve mathematical ideas but are not limited to them”. In other words, this means that these environments are formed from the moment in which students are invited to think about financial situations from a broad perspective, not referring to physical spaces, but to moments, to situations in which invitations to reflection are made, developing Financial Education from them. For the authors, the Mathematics teacher has the possibility of creating these moments during the class, connecting Education to mathematical content. In this sense, we rescued Units of Meaning that point out precisely this connection:

US4.16 [...] I work with Financial Education with Behavior, with Environmental Education, with Politics, all of this is part of it. So, for example, I worked with graphs. It's a very powerful subject, right [sic], within Mathematics, and, yes, I can, talk about Financial Education. So, I made some connections when I brought the graphs, graphs that portrayed a specific subject. So, I take the Mathematics content within my planning [...] and I see how Financial Education can connect with them. So, the most classic ones: graphs, statistics, percentages, interest, [...], the ones where the connections are more visible, for example.

US3.13 So, we have to discuss income, we have to discuss work, we have to discuss planning, we have to discuss budget, management, consumption, culture, sustainability [...]. And then, we will discuss investment, we will discuss pension plans, we will discuss insurance, protection, risk, taxes, and seek to produce didactic connections with Basic Education through the teaching of Mathematics.

The Units of Meaning presented here highlight the possibilities of developing Financial Education through the teaching of Mathematics. However, although the teachers demonstrate this connection, we understand, in their statements, a concern in developing it beyond the subject itself, demonstrating an understanding of the need to promote discussions that are not limited to teaching how to consume and calculate elements involved in financial negotiations. With this, we highlight the importance of some of the teachers' perceptions, as set out in the Units of Meaning below:

US1.5 [...] because I believe that Financial Education is a broader perspective, in the sense of choices, consumption, awareness [...].

US2.10 [...] you have to have this critical vision and remember the reality in which the student lives, that there is an enormous inequality, he needs to understand what this inequality is and what system he lives in, and what gears this system has so that he can survive in it. Because it is not just living, it is really surviving, and how can he also interfere in this: why is my life bad?

US3.8 Financial Education for me [...] begins by being a practice of education, from which you request reflection on topics involving acquisition, use, distribution and saving of money, as well as the consequences of attitudes, from a multidisciplinary perspective, aiming to bring ethical, humanistic, sustainable aspects to this discussion, also taking into account that our choices and attitudes have individual consequences, but also collective consequences.

Based on these Units of Meaning, we understand that teachers generally take a broader view of Financial Education in the sense that it is not limited to Financial Mathematics. We emphasize that it is essential to invite students to reflect and form a critical view in a movement to understand issues such as consumption, the context in which they live, choices and inequalities, and seeking individual and collective improvements. In this same direction, we have our understanding of how Financial Education should be developed in Basic Education, that is, expanding the financial field, inviting students to think critically about the economic and social situations that surround them, aiming at improving the quality of life in the personal, family and social spheres.

We emphasize again that these concepts are in line with the vision proposed by the OECD and, consequently, by ENEF and BNCC since these organizations propose a market-based Financial Education. Therefore, we agree with Mazzi and Baroni (2021) when they argue that, in addition to calculations and concepts of Financial Mathematics, teaching for consumption, techniques for capital gains, and discussions about financial products, it is necessary for Financial Education to have a problematizing view of the entire capitalist structure and its impacts on society. Thus, it “[...] must be guided by ethics in personal relationships, favoring training for the critical analysis of the reality of financial life, in order to problematize it, proposing, whenever possible, ways to overcome injustices and social inequalities” (Mazzi & Baroni, 2021, p. 49).

This is a Financial Education that is, in fact, concerned with individuals, providing them with training that favors the critical analysis of the reality of financial life, problematizing and seeking to overcome social inequalities. For Skovsmose (2021), it is crucial that the theme does not maintain an acceptance of the economic order but that it helps to determine a critical position.

In this context, Baroni's studies (2021), based on Paulo Freire's ideas, discuss, among

other things, criticality in Financial Education in the dialogic context. This is because the author points to dialogue as a decisive presence “on financial life and autonomy in planning and decision-making processes, [...] ethics and the functioning mechanisms of this world” (Baroni, 2021, p. 90-91).

In this sense, the participating teachers highlighted the relevance of preparing the themes according to the interests of the class, expressing concern in proposing non-traditional classes developed with the students, which demonstrates an environment in which teacher-student dialogue stands out. These elements are exposed in the following Units of Meaning:

US1.11 [...] I start asking some questions about what they have or what they don't have or what would be cool for them to have. [...] So, I start picking up some terms during the classes, [...] I try to tie them together and, with the interest of the class, I'll bring them up in the next classes. [...] Sometimes, it changes from one class to another. Sometimes, I have different discussions on the same topic [...]. [...].

US1.12 [...] I'll make a parallel according to their interest [...] and, sometimes, I give them some topics for them to do something different. [...] I worked with the topic of dreams, [...] to get away from just talking about dreams, of being something traditional, of making a spreadsheet [...]. So, I asked them to make a poster. [...] On the poster, they are very creative. [...].

With this, we emphasize the importance of creating environments that, through dialogue, provide students with spaces to reflect and make decisions that can transform their realities, contributing to critical education. This is because, according to the Paulo Freire dictionary:

dialogue is the force that drives critical-problematizing thinking in relation to the human condition in the world. Through dialogue, we can describe the world according to our way of seeing it. [...] This possibility opens up ways to rethink life in society, discuss our cultural *ethos*, our education, the language we practice and the possibility of acting in another way of being, which transforms the world around us (Streck, Redin & Zitkoski, 2017, p. 117, our translation).

Dialogue is necessary to achieve critical thinking, allowing us to reflect individually and collectively, enabling transformations in the society in which we live. In this sense, for the teachers participating in the study, dialogue and, consequently, reflection and problematization are essential aspects in the development of Financial Education in Basic Education, which exposes the concern of the subjects of this research in promoting a problematizing Financial Education, which invites critical actions and dialogues regarding the social, financial and economic context of individuals, aiming at improving the quality of life of people and the society in which they live.

Finally, we highlight that we corroborate the notes that encompass critical thinking and social aspects in Financial Education, in addition to its transversal approach, permeating the various fields of knowledge in favor of the constitution of a Financial Education that goes beyond individual ideals, contributing to the formation of conscious and critical citizens and societies.

5 Final thoughts

The discussions listed indicate that the teachers interviewed consider dialogue, reflection, and problematization to be essential to the development of Financial Education. Furthermore, they point out that despite the potential of the topic to be worked on in a transversal manner, it is necessary to invite actions and critical dialogues regarding the social, financial, and economic contexts of individuals beyond financial calculations, in search of a Financial Education that goes beyond individual ideals, contributing to the formation of conscious and critical citizens and societies.

The ideas of the business world, disseminated through supposedly successful entrepreneurs, are being brought into schools and formalized as a public policy for Education (Sachs, Gereti, Ferraiol, Elias & Souza, 2023), revealing a clear function of naturalizing the logic of capitalism. Thus, with the educational reforms discussed at the beginning of our text, in the State of São Paulo in particular, Financial Education, in 2024, began to be included as a subject and is being offered in the 8th and 9th grades of Elementary School and the three years of High School.

That is, Financial Education has entered the classrooms in a forced way indeed, and it is essential to think about the training of teachers who work and will work with the subject, understanding its relevance from a problematizing perspective that allows questioning and problematizing reality, enabling citizens to develop their critical thinking, be attentive and not accept everything that is imposed on them, aiming to overcome social inequalities. On the other hand, there is the vision of Financial Education proposed in schools arising from the ideas developed by the OECD and ENEF that expose a reductionist and market-oriented perspective, suggesting a passive role of the citizen, who is only responsible for consuming in the best possible way. Considering the scenario of changes in education, especially concerning curricular modifications and market ideas developed by the OECD and ENEF, which strengthen the neoliberal agenda, we must pay attention to the teaching of Financial Education, since schools adopt these ideals and end up contributing to the dissemination of neoliberal ideologies and the stimulation of capitalist ideals.

Acknowledgments

We thank the Coordination for the Improvement of Higher Education Personnel (CAPES) for funding the first author during the development of her master's degree, which led to this article.

References

- Baroni, A. K. C. (2021). *Educação financeira no contexto da educação matemática: possibilidades para a formação inicial do professor* (Tese de Doutorado). Universidade Estadual Paulista “Júlio de Mesquita Filho”, Rio Claro, SP.
- Bicudo, M. A. V. (2011). *Pesquisa qualitativa segundo a visão fenomenológica*. Cortez.
- Bicudo, M. A. V. (2012). A pesquisa em educação matemática: a prevalência da abordagem qualitativa. *Revista Brasileira de Ensino de Ciências e Tecnologia*, 5(2), 15-26.
- Brasil. (2010). 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. *Diário Oficial da União*.
- Brasil. (2017a). Lei n 13.415, de 16 de fevereiro de 2017. Estabelece as Diretrizes e Bases da Educação Nacional. *Diário Oficial da União*.

- Brasil. Ministério da Educação. Secretaria de Educação Básica. (2017b). *Base Nacional Comum Curricular: Educação Infantil e Ensino Fundamental*. Brasília, DF.
- Brasil. Ministério da Educação. Secretaria de Educação Básica. (2018). *Base Nacional Comum Curricular: Ensino Médio*. Brasília, DF.
- Campos, A. R. (2015). *A Educação Financeira em um curso de orçamento e economia doméstica para professores: uma leitura da produção de significados financeiro-econômicos de indivíduos-consumidores* (Dissertação de Mestrado). Universidade Federal de Juiz de Fora, Juiz de Fora, MG.
- Dale, G. A. (1996). Existential phenomenology: Emphasizing the experience of the athlete in sport psychology research. *The Sport Psychologist*, 10, 307-321.
- Delesposte, T. & Sá, L. C. (2023). Um olhar sobre a Educação Financeira em Livros Didáticos de Matemática a partir das novas morfologias do trabalho. In *Semana da Matemática do IFES*, 9., Vitória, ES.
- Fazenda, I. C. A. (1979). *Integração e Interdisciplinaridade no ensino brasileiro* (6. ed.). Loyola.
- Fini, M. I. (1994). Sobre a Pesquisa Qualitativa em Educação, que tem a Fenomenologia como suporte. In M. A. V. Bicudo & V. H. C. Esposito (Org.), *A pesquisa qualitativa em educação: um enfoque fenomenológico* (pp. 23-33). Editora UNIMEP.
- Frederic, D. J. A. (2018). *Contribuições da Educação Estatística, Socioemocional e Financeira para a saúde do cidadão* (Dissertação de Mestrado). Instituto Federal de Educação, Ciência e Tecnologia de São Paulo, São Paulo.
- Hartmann, A. L. B. (2021). *A Educação Financeira nos cursos de licenciatura em Matemática da Universidade Estadual Paulista* (Dissertação de Mestrado). Universidade Estadual Paulista “Júlio de Mesquita Filho”, Rio Claro, SP.
- Jacomini, M. A. (2022). Novo Ensino Médio na prática: a implementação da reforma na maior rede de ensino básico do país. *Retratos da Escola*, 16(35), 267-283.
- Junior, I. M. & Jurkiewicz, S. (2016). Representações temporais e o valor do dinheiro no tempo: conexões entre a Educação Financeira e o Ensino de Matemática. *BoEM*, 4(7), 116-138.
- Laval, C. (2019). *A Escola não é uma empresa: o neoliberalismo em ataque ao ensino público* (1. ed.). Boitempo.
- Lima, A. S. (2023). *Educação Financeira no Capitaloceno* (Tese de Doutorado). Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ.
- Lopes, B. (2019). BNCC e o avanço neoliberal nos discursos sobre educação. In F. Cássio & R. Catelli Jr. (Org.), *Educação é a base? 23 educadores discutem a BNCC* (1. ed., pp. 45-57). Ação Educativa.
- Mazzi, L. C. & Baroni, A. K. C. (2021). Diálogos possíveis entre Educação Financeira e Educação Matemática Crítica. In A. K. C. Baroni, A. L. B. Hartmann & C. C. S. Carvalho (Org.), *Uma abordagem crítica da educação financeira na formação do professor de matemática* (1. ed., pp. 37-53). Appris.
- Mazzi, L. C., Hartmann, A. B. L. & Pessoa, C. A. S. (2024). Financial Education and Social Justice: Reflections within the scope of Mathematics Education. *Bolema*, 38, 1-26.
- Melo, D. P. & Pessoa, C. A. S. (2019). Educação financeira no Ensino Médio:

- possibilidades. *Revista Brasileira de Educação em Ciências e Educação Matemática*, 3(2), 488-513.
- OCDE. (2005). *Improving Financial Literacy: Analysis of issues and policies*.
- Sachs, L., Gereti, L. C. V., Ferraiol, T. F., Elias, H. R. & Souza, L. G. R. (2023). Crítica da Educação Financeira na Educação Matemática. *Bolema*, 37(76), 449-478.
- Silva, A. M. & Powell, A. B. (2013). Um programa de Educação Financeira para a Matemática Escolar da Educação Básica. In *Anais do 11º Encontro Nacional de Educação Matemática (ENEM)*, Curitiba.
- Silva, P. de O. (2024). *Educação Financeira na Educação Básica: um olhar de professores de Matemática* (Dissertação de Mestrado). Universidade Estadual Paulista “Júlio de Mesquita Filho”, Rio Claro, SP.
- Silva, R. M. da. (2016). *Cenários para investigação de temas de Educação Financeira em uma Escola Pública de Duque de Caxias* (Dissertação de Mestrado). Universidade do Grande Rio “Prof. José de Souza Herdy”, Duque de Caxias, RS.
- Skovsmose, O. (2000). Cenários para investigação. *Bolema*, 13(14), 66-91.
- Skovsmose, O. (2021). Prefácio. In A. K. C. Baroni, A. L. B. Hartmann & C. C. S. Carvalho (Org.), *Uma abordagem crítica da Educação Financeira na formação do professor de matemática*. Appris.
- Streck, D. R., Redin, E. & Zitzoski, J. (2017). *Dicionário Paulo Freire* (3. ed.). Autêntica.
- Tomaz, V. S. & David, M. M. M. S. (2008). *Interdisciplinaridade e aprendizagem da Matemática em sala de aula* (3. ed.). Autêntica.