

Inflation as a triggering theme for reading and writing of the world: promoting Financial Education in high

Inflação como tema disparador de leituras e escritas do mundo: promovendo a Educação Financeira no Ensino Médio

La inflación como tema detonante de la lectura y la escritura del mundo: promoviendo la Educación Financiera en la escuela secundaria

Aline de Sousa Jacinto¹

Edmilson Minoru Torisu²

Marger da Conceição Ventura Viana³

Abstract

The main objective of this article was to reveal contributions that activities, focused on financial education based on the theme of inflation, brought to new readings and writings of the world of high school students, from a critical perspective. The participants were students from a third-year high school class at a state school in the interior of Minas Gerais. In total, ten meetings were held, in which the topic of inflation was explored in various ways. For this article, we chose one of them, in which we explore calculations related to inflation and reflections on its impacts on society and possible solutions for them. The results showed that the students began to carry out new readings of the world, in a process of empowerment, which enabled essays on writing of the world.

Keywords: Financial Education. Inflation. Critical Mathematics Education. Mathematics Education.

Resumo

Este artigo teve como principal objetivo desvelar contribuições que atividades voltadas à Educação Financeira a partir do tema inflação trouxeram para novas leituras e escritas do mundo de estudantes do Ensino Médio, em uma perspectiva crítica. Os participantes foram estudantes de uma turma do terceiro ano do Ensino Médio de uma escola estadual do interior de Minas Gerais. No total, foram realizados dez encontros, nos quais o tema inflação foi explorado de várias formas. Para este artigo, escolhemos um deles, no qual examinamos cálculos relacionados à inflação; e reflexões em torno dos impactos desta para a sociedade e possíveis soluções para eles. Os resultados evidenciaram que os estudantes passaram a realizar novas leituras do mundo, em um processo de empowerment, que possibilitou ensaios de escritas do mundo.

Palavras-chave: Educação Financeira. Inflação. Educação Matemática Crítica. Educação Matemática.

Resumen

El principal objetivo de este artículo fue revelar los aportes que las actividades centradas en la EF con base en el tema de la inflación, aportaron a nuevas lecturas y escritos en el mundo de los estudiantes de secundaria, desde una perspectiva crítica. Los participantes eran estudiantes de tercer año de secundaria de una escuela pública del interior de Minas Gerais. En total se celebraron diez reuniones en las que se abordó de diversas formas el tema de la inflación. Para este artículo elegimos uno de ellos, en el que exploramos cálculos relacionados con la inflación y reflexiones sobre sus impactos en la sociedad y posibles soluciones para ellos. Los resultados mostraron que los estudiantes comenzaron a realizar nuevas lecturas del mundo, en un proceso de empoderamiento, que posibilitó ensayos de escritura sobre el mundo.

Palabras clave: Educación Financiera. Inflación. Educación en Matemática Crítica. Educación Matemática.

¹ Mestrado em Educação Matemática pela Universidade Federal de Ouro Preto, campus Morro do Cruzeiro. Professora da SEE-MG, Santa Luzia, Minas Gerais, Brasil. E-mail: alinesjacinto12@gmail.com

² Doutorado em Educação pela Universidade Federal de Minas Gerais, campus Pampulha. Professor da Universidade Federal de Ouro Preto, Ouro Preto, Minas Gerais, Brasil. E-mail: edmilson@ufop.edu.br

³ Doutorada em Ciências Pedagógicas pelo Instituto Central de Ciências Pedagógicas da Universidade de Cuba. Professora Emérita da Universidade Federal de Ouro Preto, Ouro Preto, Minas Gerais, Brasil. E-mail: margerv@ufop.edu.br

1. Introduction

Inflation has been a recurring topic in formal and informal conversations across various media. Although not everyone knows how to define it formally, with technical terms, the word usually refers to a price increase that affects economies around the planet. Over the years, we have heard of dramatic stories of countries plagued by galloping inflation that reached hyperinflation levels, as occurred in Brazil between the 1980s and 1990s. In a report from July 2022, Costa (2022) reveals that, at that time, Turkey and Argentina were experiencing inflation above 60% and that countries such as Iran, Lebanon, and Venezuela, among others, were facing an out-of-control inflation situation. Inflation is the topic of many reports.

However, despite so much news about inflation, are students interested in discussing it? Could it be that, out of the many hours they spend exploring the Internet daily, some time is reserved for exploring topics like this? Is this an interesting topic for young people? And if not, can the teacher make it interesting? These questions are provocations that prompt us to reflect on the importance of bringing this type of discussion to the classroom. For the last question, we believe that a formal presentation of the topic, with elaborate definitions and crazy calculations, will have little effect in sparking students' interest. One possibility could be to bring the topic closer to students' daily lives or to something they have the conditions or knowledge to discuss.

Proposals that involve dialogue –understood as a type of communication in which one speaks and listens to reflect on a given topic– can be very useful for teaching and learning. In the case of inflation, a proposal like this can lead to new understandings, insights, and ideas on the subject and contribute to the financial education (FE) of those involved. We emphasize that the FE we refer to does not intend to discuss investments in the financial market. In our opinion, this makes no sense in groups of students with nothing to invest. Guided by the theme of inflation, the FE we intend is focused on contributing to educating students to critically *look at* the world in which they live.

Based on the above, this text, an excerpt from a master's thesis, intends to reveal contributions that a set of activities focused on FE, based on the theme of inflation, brought to new readings and writings in high school students' world, from a critical perspective.

The text is divided as follows: after the introduction, we will present a section discussing inflation and FE. Next, a discussion on critical mathematics education (CME). In the following section, we will provide some data and analysis. Then, we bring our final considerations and the references.

2. Financial Education and Inflation

FE has become one of the hottest topics, and not just in Brazil. On the international scene, proposals for actions aimed at educating the population financially have been put into practice. Studies related to FE, such as those undertaken by the Organization for Economic Co-operation and Development (OECD), influence several countries to move in the same direction. Following OECD initiatives, in 2010, Brazil established, through *Decree n. 7.397, of December 22, 2010* (BRASIL, 2010, p. 1), the National Financial Education Strategy (Estratégia Nacional de Educação Financeira - ENEF), whose objective is to "promote financial and social security education and contribute to the stren-

gthening of citizenship, the efficiency and solidity of the national financial system and the taking of conscious decisions on consumers' part."

However, Brazilians do not seem to be financially organized. A study carried out within the scope of the OECD and adapted to Brazil showed that our population, in general, does not maintain a family budget, does not research better rates when purchasing products and services, and does not tend to save (BANCO DO BRASIL, 2017). In other words, Brazilians do not seem to have a healthy financial organization. Silva and Powell (2015) consider that this disorganization may be a consequence of high levels of family debt, lack of knowledge to deal with inflation in times of crisis, difficulties in planning and developing financial reserves for retirement, default and the misuse of credit cards -factors that generate catastrophic effects on personal and family finances. FE may be a viable way to mitigate this situation, which affects a considerable portion of the Brazilian population.

However, what is FE? This question can be answered from different perspectives. OECD (2005 *apud* ASSIS; TORISU, 2021, p. 213) defines FE as:

[...] the process by which financial consumers/investors enhance their understanding of financial products, concepts, and risks and, through objective information, education and/or advice, develop the skills and confidence to become more risk-aware and financial opportunities, to make informed choices, to know where to seek help, and to take other effective steps to improve their financial well-being.

Silva and Powell (2015, p. 12) argue that FE should be started at the beginning of school life, as this is "the best time to influence children's future behavior; while their minds would be more open to new concepts." This corroborates Delval's (2001) ideas regarding FE for young children. For the author, children's brains are still in formation. For this reason, they learn easily, making this an opportune moment for learning conscious habits and attitudes that will contribute to forming adults with the ability to make more balanced decisions between rationality and emotion.

Silva and Powell (2013, p. 13) deal with school financial education (SFE), defined as an FE proposal, with the following goals:

1 - Understand the basic notions of finance and economics so that [students] develop a critical reading of the financial information present in society; 2 - Learn to use knowledge of school and financial mathematics to support decision-making in financial matters; 3 - Develop analytical thinking on financial issues, i.e., thinking that allows you to evaluate opportunities, risks, and traps in financial matters; 4 - Develop a methodology for planning, managing, and investing your finances through making mathematically based decisions in your personal life and helping your family; 5 - Critically analyze current themes in consumer society.

The OECD definition highlights, at the beginning, a relationship between FE and investments. Silva and Powell (2013, p. 13) refer to "the basics of finance and economics" to deal with "financial matters" (p. 13). In our opinion, the authors propose a more generic discussion of FE without directing it toward investment in education. We believe that a more democratic FE proposal would be in the direction of educating people with a critical look at situations involving money. This proposal can cover issues related to investments and others, such as consumerism and consumption, rela-

tionships between consumerism, waste production and environmental impact, wages, social classes, social inequality, need versus desire, ethics, and money.

Particularly, the discussion around consumerism –perhaps resulting from the liquid modernity criticized by Bauman (2001)– seems to be an urgent topic. In liquid modernity, nothing is stable; everything disappears and slips through our fingers. Nothing is enough. We always want more. The author believes that “modern man pursues the new, but, after achieving such good, he quickly becomes bored with it; insatiable, he pursues new desires always guided by the eternal 'postponement of satisfaction'” (BAUMAN, 2001, p. 37). This generates consumerism, which has caused serious debt problems among the population. In Brazil, this problem led to the creation of *Law n. 14.181, of July 1, 2021* (BRASIL, 2021), which provides for the prevention and treatment of over-indebtedness, which completely (or almost) compromises a person's monthly earnings, with disastrous consequences. Consumerism can be a practice for many young people and may generate heated debates around FE. However, how can this be done in practical terms?

In our understanding, students, invited by the teacher, can mobilize skills that sensitize them in the search for solutions to situations related to the use of money, such as financial budgeting, better purchasing options, and consumerism itself. The proposed situations must be of interest to students. That means that teachers must explore topics related to FE that attract their students' attention. However, critical reflection must permeate such exploration.

Some concepts are emerging from discussions in FE in mathematics education. Kistemann Júnior (2011), for example, discusses financial-economic mathematics, the ability to interpret texts and situations involving money and financial decision-making. Orton (2007) defines "financial literacy" as the ability to read, analyze, and interpret personal financial situations to better plan the future based on the best organization of finances.

Based on the above, we understand FE is a set of actions that can lead the student to critical education in questions involving money use. Part of this set of actions are activities that the teacher can propose to students based on their interests, social and economic reality, age group, etc.

As discussed above, FE does not need to focus exclusively on financial applications. Some perspectives are interested in helping to form values that may impact the child's behavior as an adult. In this sense, Santos, Menezes, and Rodrigues (2016) argue that FE can start in the early years. They believe that values and habits learned in childhood are consolidated with practice in adult life. For the authors, subjects related to FE:

[...] should be introduced from early childhood education, for example, the differentiation between value and price: an object can be simple but be very valuable if it has been in the family for generations. [...] the child can be led to reflect on things that money buys and things that money doesn't buy, such as friendship, respect, and love. (SANTOS; MENEZES; RODRIGUES, 2016, p. 103)

The age of participants in FE research also varies. Some works focus on FE for high school students, such as those by Cunha and Laudares (2017) and Hartmann, Mariani, and Maltempi (2021); some others, on youth and adult education (YAE), such as Seixas, Santarosa, and Ferrão (2020), and some on higher education, such as Aguiar (2022).

The themes used to serve as a backdrop for FE also vary. One of them, quite relevant to be explored in the classroom, is inflation. The most common thing is that the term “inflation” is associated with increased product prices, which is not wrong. However, reducing inflation to price increases without understanding other aspects may sound simplistic. In our study, we aimed to investigate some contributions that a proposal of activities focusing on inflation can bring high school students' FE from the perspective of the CME.

Inflation is part of our daily lives, and although it is a recurring topic in conversations and the media, we do not always know how to explain it, its causes, or how it is calculated. Vital (2014) considers that one of the causes of inflation is the increase in the amount of money in circulation in a country, which implies greater demand in relation to the supply of certain products, goods, and services. Conflicts in some regions of the world –such as a war in the Middle East– may boost the price of oil sold by countries in the region to other nations. Climatic factors that reduce production may also cause inflation. Other factors causing inflation are the issuance of currencies by the government to cover public spending and expenses and the long-term disease scenarios in countries and the world, such as epidemics and pandemics such as COVID-19.

The main consequence of inflation is the rise in product prices for consumers and the loss of their purchasing power. Other consequences of inflation are reduced quality of life for citizens, increase in unemployment and population impoverishment, hunger, devaluation of the national currency and rise in the dollar, growth in interest rates, loss of investments and competitiveness in international trade, concentration of population income, drop in public and private investments in economic sectors, and flight of citizens to other countries (VITAL, 2014).

Several authors define inflation. Soares (2021, p. 38), for instance, believes that inflation is:

[...] an essentially monetary phenomenon with repercussions on citizens' assets (property). Due to other macroeconomic variables (employment, income, savings, exchange rate, interest, etc.), inflation can affect one economy more severely than another, so a theory about inflation based on empirical elements must be constructed from country to country.

However, some authors believe people get mixed up when inflation is the issue. Hayek (2011, p. 66) believes that:

there is a lot of confusion in current discussions due to the often-inappropriate use of the word “inflation.” Its original and proper meaning is this: an excessive increase in the quantity of money, which, in turn, determines an increase in prices. However, a general price increase caused, for example, by a food shortage resulting from bad harvests is not inflation. Nor could we appropriately call “inflation” a generalized price boost caused by a shortage of oil or other energy sources, which determines an absolute reduction in consumption unless this shortage becomes a pretext for a further increase in money consumption.

In Brazil, the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística - IBGE) is responsible for calculating inflation. On the IBGE website, inflation is defined as the increase in prices of products and services, calculated by price indices, commonly called inflation indices. The main indices are the Broad National Consumer Price Index (Índice Nacional de Preços do Consumidor Amplo - IPCA), considered official by the federal government, and the National Consumer Price Index (Índice Nacional de Preços ao Consumidor - INPC).

The IPCA, created in 1979, is calculated monthly by IBGE. It is considered the official inflation index in the country and measures the increase in prices of a set of products and services sold at retail and consumed by families. This index shows the average cost of living variation for families with a monthly income between one and 40 minimum wages. The INPC checks the average cost of living variation only for families with a monthly income of one to five minimum wages. These groups are more sensitive to price variations, as they usually spend all their income on basic items, such as food, medicines, transport, etc. The purpose of both indices is the same: to measure the price variation of a basket of products, goods, and services consumed by the population. The result shows whether prices increased or decreased from one month to the next (IBGE, 2022).

IBGE uses a budgetary survey called the Family Budget Survey (Pesquisa de Orçamentos Familiares - POF) in several Brazilian metropolises to obtain data for calculating the IPCA and INPC. This survey verifies the population's consumer basket, i.e., what is consumed and how much of the family income is spent on each product: rice, beans, bus tickets, school supplies, medical assistance, and cinema.

Inflation is a topic that can yield a lot of interesting research. In our case, we proposed activities focusing on inflation but beyond price increases. It was our purpose that, at the end of the activities, students could answer, with a level of complexity appropriate to their ages, questions such as: What is inflation? How can it affect our lives? What is IPCA? What actions can we take in our daily lives to mitigate the impacts of price increases? In our opinion, the answers to these questions can give us clues about the contributions of activities to students' FE. More than that, they may present characteristics that allow us to evaluate a critical formation in relation to the topic. In the present study, students' critical formation was evaluated from the theoretical lenses of CME.

3. Critical Mathematics Education

The embryonic ideas for formulating the CME first emerged as basic elements of the movements in reaction to the social problems that proliferated worldwide shortly before the 1970s. The reactions came in the form of fighting against many different forms of oppression. Protests against the Vietnam War, reactions against the use of nuclear energy, the growth of feminist movements, anti-racist movements, and the emergence of the student movement are some examples.

All this effervescence of ideas, movements, and reactions to social problems in some countries reverberated elsewhere and influenced ways of thinking and acting. In this context, around 1975, the Danish Ole Skovsmose began to develop initial problematizations in CME, influenced by critical theory and critical education, with Paulo Freire as one of its greatest representatives. However, there was a problem. It did not seem obvious that critical education could encompass any mathematics discussions, since its interest is emancipation and mathematics has a technical bias. Therefore, a mathematical education that could serve emancipation did not appear to make sense, as it seemed an antithesis of critical education. This forced CME to create its own theoretical formulations (SKOVSMOSE, 2012).

From the beginning until today, discussions in CME have advanced and continue to advance. The objective of CME is to develop mathematics, a type of competence, which is related to mathematics and is closely related to Paulo Freire's idea of reading and writing the world (SKOVSMOSE,

2012). Skovsmose (2012) admits that mathematics is synonymous with mathematical literacy and can support citizenship. This leads us to consider the possibility of mathematics education for social justice.

CME is a theoretical field formed by a tangle of interconnected constructs. In the classroom, the teacher, knowledgeable about the ideas advocated by this theory, can promote CME through several paths. In this study, we will highlight the possible readings and writings of the students' world, provided by the discussions that arose as part of the FE-related activities proposed to them. For Gutstein (2017, p. 12),

[...] "Reading and writing the world with mathematics" essentially means that students must use and learn mathematics to study their social reality. This will give them a deeper understanding of the world and prepare them to change it, as they see fit.

This quote contains what, in our view, is the essence of what we understand as reading and writing the world. The deepest understanding of the world would be reading. The idea of changing the world is associated with their writing. However, how do you go from reading to writing?

We believe that new knowledge or deepening of existing knowledge enables new readings of the world. New readings can make people safer to fight against something that oppresses them. The feeling of security we refer to is called *empowerment*. For Powell (2017, p. 11-12), *empowerment* is:

[...] a process in which an individual or a community becomes stronger and more confident against something that oppresses them. Empowerment involves, especially, controlling one's own life and claiming rights. When the oppressed individual (or community) begins to act against what oppresses them, they realize that their actions can lead to solutions for their lives. When this occurs, the individual feels more 'powerful' and continues to act in favor of change. Empowerment is a feeling of confidence that an individual or community has when they realize their actions contribute to solving social problems. Learning mathematics and using mathematics can serve as a tool for a person or community to develop their empowerment.

The quote challenges us to make connections between *empowerment* and other constructs discussed in CME. *Empowerment* It makes people stronger to act against oppression and to bring about change. People only become stronger because they learn to read the world. Acting in favor of change brings us the idea of writing of the world. Writing the world means acting or promoting actions that can change it toward social justice. For Skovsmose (2012, p. 19), "the notions of *empowerment* and *disempowerment* are related to the idea of reading and writing the world."

4. Methodology

The main objective of the study presented in this article was to investigate some contributions that a proposal of activities focusing on the theme of inflation managed to bring to the FE of high school students from the perspective of CME.

The interactions between those involved were highlighted throughout the analysis and were interpreted considering the chosen theoretical framework. The interpretation of the meanings of these interactions is quite subjective and may require quantification. For Chizzotti (2003), this is

another characteristic of qualitative research: students' statements, their reflections throughout the discussions and activities, and their interpretations cannot be quantified.

The research participants were 25 third-grade high school students aged between 17 and 20 attending a state public school in Minas Gerais hinterland. We contacted the school management to conduct the research, presented the study proposal, and obtained authorization. The project was submitted to the Research Ethics Committee (CEP) of the Federal University of Ouro Preto and was approved under CAAE 68170722.8.0000.5150. After this stage, students were invited to participate. A Free and Informed Consent Form (FICF) was given for those of legal age who accepted the invitation. For minors, the FICF and Free and Informed Assent Form (FIAF) were delivered.

In total, ten meetings were held to explore the topic of Inflation. A questionnaire containing questions about inflation was administered in the first meeting. The answers to the questionnaires gave clues regarding students' knowledge of the topic. Some reported that many did not know what inflation was and associated it with unconnected topics. These results helped us organize other meetings. In some of them, which occurred at the beginning of the study, we promoted conversation circles with questions explored in the initial questionnaire but whose answers had not been satisfactory. The conversation circles aimed to clarify the topic and promote discussions around questions such as: What is inflation? How is it calculated? How does it impact your life? What can we do to mitigate the effects of inflation?

Throughout the meetings, students could make new readings of the world and embarked on a process of *empowerment*, which enabled proposals for writing the world.

5. Data and Analysis

Although the empirical part of the study consisted of several meetings, for this article, we selected one, the eighth, which is quite emblematic. It contains interesting data that, after being analyzed, allow us to perceive a critical view of students regarding inflation, possibly created or raised by discussions in the classroom. Although we chose this meeting, some data from other meetings may come to light to compose the material we will explore.

The activity proposal for this meeting comprised four items, which we show in Figure 1. To this end, students participated in several meetings, during which they discussed inflation and clarified doubts. Some questions permeated the meetings before the one chosen to bring here, such as: What is inflation? What is IPCA, and how is this index calculated? What are some causes of inflation? How can we be affected by it?

Figure 1: Eighth meeting activity**ACTIVITIES**

According to the Institute of Administrative and Accounting Economic Research of Minas Gerais (Instituto de Pesquisas Econômicas Administrativas e Contábeis de Minas Gerais—IPEAD), linked to the Faculty of Economic Sciences of UFMG, the basic food basket closed in December 2022 with a value of R\$711.48 (IPEAD, 2022). In December 2021, the value of the basket was R\$605.16 (DIEESE, 2022).

- If from December 2021 to December 2022 the IPCA was 6.56%, what should the value of the basket be at the end of 2022?
- But, in case the value of the basket was actually R\$711.48 in December 2022, how much more is the worker paying for it? What was the actual percentage increase in the basket, then? How does this extra amount paid impact the worker's salary?
- Do you think the impact of increasing the basket is the same on the salary of a worker who earns the minimum wage and another who earns ten minimum wages? Explain your answer.
- Based on your answer to the previous question, what do you think could be done so that the situation would not be unequal?

Source: prepared by the authors.

Letters a and b in the activity involved mathematical calculations. For them, different paths to a solution emerged. The duo Ester and Johny made the calculations, as shown in Figure 2.

Figure 2: Solution given by the duo Ester and Johny for the letter a of the eighth meeting activity

The image shows handwritten calculations on lined paper. At the top, it says 'Exercício 1a' and 'unidade'. Below that, 'Nome: Johny' and 'Turma: 3º Reg 2' are written. The date 'Data: 16/03/2023' is also present. The calculations involve the formula $R = \text{Valor da cesta em 2022} \times (1 + \text{aproximadamente } 6,56\%)$. The value 605,16 is multiplied by 1.0656 to get 644,86. The steps are shown with arrows and annotations.

Source: authors' archive

Asked to explain how they had solved the proposal for letter a, the students responded:

Johnny: ... and we multiply by the percentage. And, this percentage [6.56%], I have already transformed into a decimal number so that in the end I don't have to divide by 100. And here, oh, it's done directly [he meant to say that he made a direct transformation just by moving the houses in the division without having to do the math].

Researcher: Why did you put this 0.0 here before the 6.56?

Johnny: Because I transformed the percentage into a decimal number so that in the end, I didn't need to divide by 100.

Victory: But how did you transform this [6.56% = 0.0656] into a decimal number?

Johnny: Well, 6.56 divided by 100 [he did the math in the corner of his notebook for everyone to see].

Nicolly: Oh, yeah. You divided by 100.

Johnny: Yes, I divided by 100. There are two zeros in 100, so the decimal point was after the first six [6.56]. We moved 2 spaces to the left because it is a division by 100, so the result is 0.0656. $6.56 : 100 = 0.0656$ unit conversion.

Johnny: Then, I multiplied everything, and it gave me this big number here [he referred to 39.698496... pointing his finger at the number]. Then, I brought it closer to 39.70 since it was 39.69. Then, I added this [he referred to 39.70 by pointing his finger at it] with the old value [R\$ 605.16], and it gave the value of the basket, right, 644.86.

Figure 3 presents the solution Nicolly and Vitória gave to the same question.

Figure 3: Solution given by the duo Nicolly and Vitória for the letter a of the eighth meeting activity.

Trabalho de Inflação
Nomes fictícios: Nicolly / Vitória
Turma: 3º Reg 2

a) $605,16 \div 100$

$$\begin{array}{r}
 6.56 \\
 3630 \quad 96 \\
 3025 \quad 80 \\
 \hline
 363096 \\
 39698496 \\
 \hline
 10000
 \end{array}$$

$$39,698496 \approx 39,70 \\
 + 605,16 \\
 \hline
 644,86$$

Source: authors' archive

All other participants presented their solutions and were invited to explain their reasoning.

As with letter a, for letter b, the students could discuss the path to follow to resolve the question with each other. Afterward, they could present their reasoning to the class. Figure 4 shows Ester and Johny's answer to the question in letter b.

Figure 4: Solution to letter b given by the duo Ester and Johny

b) $791,48 - 605,16 = 106,32$
 $106,32 \rightarrow \text{aumento em relação à cesta}$
 $605,16 \rightarrow 100\%$
 $106,32 \rightarrow X$
 $605,16X = 106,32 \cdot 100$
 $605,16X = 10632$
 $X = 10632 \rightarrow X \approx 17,56$

R: 10 Trabalhadores estão pagando R\$ 66,62 a mais pela cesta. Sendo assim, o reajuste percentual é de 17,56%. Pagando a mais, o trabalhador perde parte do dinheiro que poderia investir ou comprar algo que precisa, além de diminuir o poder de compra do trabalhador.

Source: authors' archive

For letters a and b, we did not have high expectations that the students would get involved in finding a solution since they involved mathematical calculations and required the understanding of concepts discussed in previous moments, such as inflation, IPCA, basic food basket, etc. It was a pleasant surprise to realize that the students became involved in the search for answers, perhaps stimulated by the new knowledge acquired in previous meetings and new world readings.

To some extent, the proposal has meaning for the students. Skovsmose (2007) discusses the meaning of a classroom activity. For him, "the construction of meaning happens in terms of what students can see as their possibilities (SKOVSMOSE, 2007, p. 5). We do not know what possibilities the students envisioned when participating in the activity. However, we believe it was a learning moment for them.

Being meaningful for the students may have been one of the characteristics of the activity that led them to get involved, i.e., to accept the invitation to explore. In CME discussions, accepting an invitation refers to the concept of landscapes of investigation (SKOVSMOSE, 2000). We cannot guarantee that they were constituted in the classroom, but the students' investigation movement was supported by the researcher, who supported and instructed them in times of need and made them reflect -this created an environment of dialogue and greater autonomy for them, different from what happens in a class based on the communication sandwich pattern (STUBBS, 1976 *apud* ALRØ; SKOVSMOSE, 2006). By delegating the task of finding solutions to students, the teacher encourages them to be autonomous in finding different paths.

We notice that letter b includes a part, in addition to calculations, that asks: How does this extra amount paid in the basic food basket impact the worker's salary? This is a provocative question, which requires the student to reflect on the impacts of increases on the worker's pocket. It also introduced what would come in the letters c and d. The answers to these letters required a reflective look from the student on situations in our country. Ester and Johny, for example, believe that the extra money spent in the basket could have been used for other purchases or financial investments. Next, we present Rafaela and Esmeralda's responses to the letters c and d in Figure 5.

Figure 5: Response to the letters c and d (Rafaela and Esmeralda)

C - Não, por que o ganho entre eles é diferente. O primeiro salário, que recebe apenas um salário mínimo, tem um salário grande entre seu salário, sendo que metade do seu salário é destinado a custo enquanto o segundo trabalhador que recebe 10 salários mínimos, menos de 10% do salário é destinado a custo.

D - Primeiramente, o salário deveria longe de ser apenas o mínimo para sobrevivência e sendo reajustado de acordo com o necessário que alguém deseja receber. Segundo lugar a migração não deveria ser concentrada e sim, distribuída entre a classe trabalhadora.

Source: authors' archive

All answers to letter c (here, we present only two) reveal that students consider the impact of inflation to be greater for those who earn the minimum wage. Purchasing power decreases, and people need to find alternatives to avoid inflation. Even if implicitly, the answers seem to ask about social justice, which discusses the nature of the structural relationships of social arrangements and the formal and informal rules that guide interpersonal relationships (GEWIRTZ, 2006). Is the greater impact on the poorest fair?

Inequality between those with greater purchasing power and those with lower purchasing power seems to trap the poorest in a situation they cannot escape. They become vulnerable to the pressures of high prices and begin to live in prisons without bars, called *hyperghettos* by Bauman (2001, p. 120), worlds on the margins of society: "ghettos and prisons are two varieties of strategies for tying up the undesirable to the ground, keeping them confined and immobilized." Naturally, when answering letter C, students did not show an understanding of social inequality and social justice in the same terms that we present in this paragraph. However, to some extent, the answers show sensitivity and readings of the world.

Regarding the effects of inflation on people, we brought some statements from the students, recorded at the tenth meeting, which perfectly aligns with our discussion.

The tenth meeting served as a retrospective of previous meetings. In it, discussions that had taken place previously were resumed. One of them was when students expressed their ideas about the effects of inflation on people's lives. Below, we present some answers.

Alícia: *In quality of life.*

Johnny: *In being able to maintain a better life... in living conditions...*

Bianca: *In purchasing power...*

Rafaela: *It's... in terms of purchasing power. If purchasing power decreases, I can't eat properly, and I can't buy the things I need to survive...*

Alícia: *Inflation increases social inequality.*

Rafaela: *Yes, people who pay rent, if it becomes too difficult for them, they may even be... evicted from where they live, so it affects a lot of things.*

Johnny: *And as we mentioned in other classes, we can see that inflation affects the entire society, but it affects it unequally. For example, rich people can still maintain a good standard of living, for example, those who earn five or six minimum wages can still maintain a good standard of living with high inflation and maintain all their expenses. But now, someone who earns one to two minimum wages and still has to... pay rent, pay water, and pay electricity has to reformulate their entire financial life to survive and, sometimes, perform miracles with the income they don't have.*

Bianca: *With very high inflation, even if a person wants to replan their life, a lot of things will still be lacking. They won't be able to buy even the basics. Then, you pray that you don't need money to buy medicine.*

Student responses may seem almost obvious. Families that earn less will be more impacted by inflation. However, perhaps the most important thing of all is the fact that we provided them with moments of reflection on social justice. We believe that the new readings of the world contributed to students becoming more confident in discussing some aspects of the inflation topic; that is, they increased their *empowerment*. Consequently, they felt more confident in proposing possible

solutions to mitigate the impact of inflation on society; that is, they proposed possible ways of writing the world.

Considering the meeting chosen for this text, we list some contributions to students' FE:

1 – Readings and writings of the world

The new knowledge acquired in the meetings enabled new world readings. More than that, new readings enable, at least, proposals for action to change the world, that is, proposals for writing the world. An example of this was the students' various suggestions to mitigate the effects of inflation on workers' pockets. New world readings also emerged through questions that involved, in addition to mathematical calculations, reflections on relevant issues, such as the minimum wage.

2 – *Empowerment* as an element of mediation between readings and writings of the world

Empowerment is when an individual or collective becomes stronger and more confident in acting against what oppresses them. In our analysis, the contributions above present important elements for *empowering* students about inflation. *Empowerment* became fuel for students to propose writings about the world.

6. Final considerations

In this article, we present and analyze data collected in one of the ten meetings held, whose objective was to enable students in the third grade of high school attending a state school in Minas Gerais hinterland to participate in an activity focused on FE from the perspective of CME.

To complete the activity, students had to perform calculations related to concepts discussed in previous meetings, such as inflation and IPCA. Afterward, they were invited to reflect through questions on the effects of inflation and solutions to mitigate them among the population most in need. To some extent, they were invited to reflect on social justice.

FE is a relevant topic for people. For students, we can consider FE based on their interests or on problems that are close to them and can affect them or their families in some way. Another important aspect of this approach is the type of communication that will guide the discussions. We propose that dialogue –as a type of conversation in which one speaks but also listens, active listening– should be the adopted mode of communication. This way, students will feel more confident to present their ideas. In this proposal, everyone involved improves their knowledge repertoire. We can say that they make new readings of the world.

At the end of the meetings, not just the one we present here, we believe that students were different after completing this cycle. To some, what we did may seem too much. In our view, we contributed to raising those students' awareness not of issues that pass by and happen but rather of issues that pass by US and happen to US –which, for this reason, affect us.

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