

# Pseudo-concreteness, Digital Technologies and the challenge of Financial Education in consumer culture

## Pseudoconcreticidade, Tecnologias Digitais e o desafio da Educação Financeira na cultura do consumo

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### ABSTRACT

This article analyzes the pseudo-concreteness that permeates contemporary financial reality, intensified by consumer culture and the ubiquity of digital technologies. Based on a theoretical essay on Historical-Cultural Theory and Financial Education in Mathematics Education, we argue that the superficial and fragmented perception of financial life results from the fetishization of commodities and the reification of social relations, which channel complex human decisions through supposed financial solutions. Digital technologies often reinforce this pseudo-concreteness through digital marketing, which encourages debt to acquire consumer goods, and through online betting platforms ("tigrinho" and "apostas" in general), which obscure risks and exploratory logic. The objective is to develop a theoretical discussion around the argument that overcoming pseudo-concreteness requires Financial Education grounded in critical thinking and the principles of Historical-Cultural Theory. This way of thinking, which seeks contradictions and the historicity of characteristics, allows us to denaturalize discourses such as "financing is the only option" or the "false generosity" of banks. We illustrate how Critical Financial Education, by

### RESUMO

Este artigo analisa a pseudoconcreticidade que permeia a realidade financeira contemporânea, intensificada pela cultura do consumo e pela onipresença das tecnologias digitais. Com base em um ensaio teórico sobre a Teoria Histórico-Cultural e a Educação Financeira na Educação Matemática, argumentamos que a percepção superficial e fragmentada da vida financeira resulta da fetichização da mercadoria e da reificação das relações sociais, que encaminham complexas decisões humanas por meio de supostas soluções monetárias. As tecnologias digitais frequentemente reforçam essa pseudoconcreticidade por meio do marketing digital, incentivando o endividamento para conquistar bens de consumo e pelas plataformas de apostas online ("tigrinho" e "bets", em geral), que obscurecem os riscos e a lógica exploratória. O objetivo é desenvolver uma discussão de cunho teórico em torno do argumento de que a superação da pseudoconcreticidade exige uma Educação Financeira pautada na criticidade e nos princípios da Teoria Histórico-Cultural. Esse modo de pensar, que busca as contradições e a historicidade dos fenômenos, permite desnaturalizar discursos como "financiar é a única opção" ou a "falsa generosidade" bancária. Ilustramos como a Educação

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integrating the pedagogical use of digital technologies—such as the Citizen Calculator—can demystify abstract concepts and promote a critical analysis of power relations in the financial system. We emphasize that this mediation prepares students to "read the world" of finance and to act consciously and transformatively in their lives and in the community.

**Keywords:** Historical-cultural theory. Consumerism. Citizen Calculator.

Financeira Crítica, ao integrar o uso pedagógico das tecnologias digitais – como a Calculadora do Cidadão – pode desmistificar conceitos abstratos e promover a análise crítica das relações de poder no sistema financeiro. Enfatizamos que essa mediação prepara os estudantes a "ler o mundo" financeiro e a agir de forma consciente e transformadora em suas vidas e na coletividade.

**Palavras-chave:** Teoria Histórico-cultural. Consumismo. Calculadora do Cidadão.

## 1 Hominization and Humanization: The Construction of the Human Being in a Historical-Cultural Context

We shall begin the discussion by establishing the intrinsic relationship between the processes of hominization and humanization. Hominization refers to the biological and evolutionary transformations that shaped *Homo sapiens*, involving significant morphological changes (Lewin, 2004). However, biological evolution alone does not fully account for the understanding of the genesis of the human being in its entirety.

It is within the domain of humanization that we encounter the development of distinctly human characteristics, which define us as social, cultural, and historical beings. Humanization takes place in the context of social interactions and the appropriation of culture, for it is through activity and relationships with others that the individual assimilates the historically and socially accumulated experience, internalizing cultural instruments and signs that shape both consciousness and behavior.

In this process of humanization, the role of language is fundamental. Language, in its various forms (oral, written, gestural), is not merely a means of communication but a complex symbolic system that organizes thought, enables the transmission of knowledge and values, and facilitates the internalization of higher psychological functions. The importance of language can be observed in the formation of concepts, in planning, and in the regulation of one's own actions.

Labor, understood in its Marxist sense as human activity that transforms nature to meet needs, is also fundamental in the process of humanization. By acting upon the external world with a conscious objective, the human being not only modifies nature but also transforms oneself, developing new skills and new forms of social organization.

From Leontiev's perspective (1978), language and labor establish a fundamental dialectical relationship in the process of humanization, since through language the objective experience of labor becomes internalized, making possible the development of conceptual thought and the formation of human consciousness. Closely connected to labor are the instruments that mediate the subject's action upon external objects.

Vygotsky (2014, Vol. II) expands the notion of the instrument beyond material objects, also including signs and symbolic systems as psychological tools. Both material instruments (such as a plow or a computer) and psychological instruments (such as language or numerical systems) act as mediators between the human being and the world, regulating activity within its cultural environment.

If they are not incorporated into interactions with other human beings in such a way as to regulate psychological action within social relations, these instruments assume merely the character of tools, without any connection to human cognitive development. Therefore, cultural and psychological instruments expand our cognitive capacities, enabling us to perform more complex tasks and to grasp reality in deeper ways.

Thus, human development does not take place in isolation but rather within a context of constant social interaction. It is through exchange with others, participation in joint activities, and the appropriation of cultural knowledge and values that we internalize the instruments and signs that make us truly human. Education, in its various forms, emerges as one of the main instances of cultural transmission and appropriation, enabling new generations to internalize the experience accumulated by humanity throughout its historical trajectory.

By understanding this intrinsic relationship between hominization and humanization, we establish a fundamental foundation for analyzing how Financial Education has historically been constituted in society, and how digital technologies are embedded in this process of social and cultural constitution. The implications of this context include the existence of a social pseudoconcreteness that hinders critical analysis of both individual and collective financial situations, as well as action toward their overcoming. The way individuals relate to the financial sphere and develop their Financial Education does not escape this historical-cultural logic.

The cultural and psychological instruments available, including language and financial tools such as spreadsheets and investment platforms, shape individuals' practices and conceptions. The internalization of these cultural elements, mediated by social interactions, is fundamental to understanding how Financial Education is established as a social phenomenon and how contemporary digital technologies operate within this context, both as mediating instruments and as vectors of new cultural influences.

Historically, the role of consumption illustrates these discussions. The natural balance between production and the satisfaction of needs was altered after the Industrial Revolution by the expansion of marketing, which paved the way for consumerism. Everything became possible, accessible, desirable, and necessary, as the act of consumption came to be associated with the idea of social status, detaching it from real needs. According to Bauman (2008), the relationship between consumers and consumer objects is linked to the constitution of the subject, in which "to have" became a condition for "to be," establishing a culture of consumption that sustains the economy and shapes social relations, often clouding lucidity in the face of growing inequalities and environmental destruction.

While consumption is inherent to the human condition, consumerism is a social practice that becomes an attribute directing human interaction, manipulating individual choices (Bauman, 2008, p. 41). Reconnecting individuals to their real needs requires reflecting on the contradictions within the discourses

of consumerism and the consumer society (Bauman, 2008). Marx (2013 [1867]) unveiled the contradictions of the capitalist system, such as the alienation of the worker and the fetishization of the commodity, which makes products appear to possess a life of their own and magical qualities capable of satisfying desires and granting social status.

Complementarily, the reification (or objectification) of financial relations contributes to this opacity. Reification is the process by which social relations mediated by money and credit acquire the appearance of natural and autonomous things, distancing individuals from their ability to question and transform them. Together, these phenomena obstruct the perception of real human needs and the social structures underlying consumption and indebtedness. For Marx (2013), the understanding of these contradictions, through the critical analysis of material reality and relations of production, is the first step toward their overcoming, guiding a continuous movement of unveiling and revolutionary praxis.

Vygotsky (2014, Vol. VI), in analyzing cognitive development, demonstrates that the overcoming of contradictions on both the individual and social planes occurs through mediation, as in the internalization of scientific concepts via social interaction and the use of language. In the context of pseudoconcreteness which describes the superficial and decontextualized apprehension of phenomena (Kosík, 1976) and consumerism, the Vygotskian approach suggests the creation of educational spaces for mediated reflection on the contradictions between real needs and induced desires. Through dialogue, problematization, and conceptual tools, individuals can internalize new ways of understanding and acting upon reality, overcoming the uncritical perspective imposed by pseudoconcreteness and moving toward conscious financial autonomy.

The purpose of this article is, therefore, to argue that overcoming pseudoconcreteness requires a Critical Financial Education, grounded in the principles of Historical-Cultural Theory. By making explicit the system's contradictions and pedagogically incorporating digital technologies—as mediating instruments to demystify financial reality (such as the *Citizen's Calculator*) it becomes possible to prepare individuals to transcend immediate and fragmented

perception. These digital technologies, when used intentionally, become psychological tools (Vygotsky, 2014, Vol. II) that amplify analytical capacity, enabling the visualization of complex data, interactive simulation, and access to multiple perspectives. Such mediated interaction fosters the formation of scientific concepts about finance, challenges spontaneous and superficial notions, and promotes the development of deeper awareness that empowers individuals to critically analyze their situation and act consciously and transformatively with regard to their finances and the collective.

## **2. The Genesis of Pseudo-concreteness in Financial Education: Immersed in an Environment of Meaning and Relations**

The constitution of the human being as a subject, their subjectivity, and their psychological development are intrinsically shaped by the material conditions of existence and by the social relations established at a given historical moment (Vygotsky, 2014, Vol. I). We are not born with a fully developed psyche; rather, we become human through interaction with others, appropriating the historically and socially accumulated experience.

Culture, in this sense, emerges as a complex system of meanings, values, norms, and practices that permeates all dimensions of human life (Leontiev, 1978). This culture, dynamic and constantly changing, profoundly influences the way we perceive the world and act upon reality, including our financial decisions. For example, we may cite dominant cultural values, which can privilege immediate consumption or associate personal success with the acquisition of material goods, thereby shaping financial behaviors.

Social relations, mediated by language and other symbolic systems, are the driving force of human development. It is in interaction with others that we internalize cultural tools, learn social norms, and construct our worldview (Vygotsky, 2014, Vol. III). In the context of Financial Education, family experiences, conversations with friends, information disseminated by the media, and social practices significantly influence how we learn about money, credit, and investment.

The absence of open dialogue about finances within the family, or the constant exposure to advertising messages that encourage impulsive consumption, can hinder the critical development of financial awareness. The experiences and information internalized provide the lens through which individuals interpret and respond to financial issues, initially perceiving decisions in their personal dimension, linked to their own budget. However, the social nature of the human being implies that these individual choices are embedded within a broader collective context, with impacts that transcend the personal sphere and extend into the social, cultural, political, and environmental dimensions.

Although financial decisions are often perceived as personal, they must also take the collective into account. It is essential that the role of Financial Education in schools go far beyond individual finances, extending to social, cultural, political, and environmental dimensions. Individuals must perceive themselves as part of this society, embedded in and dependent upon an environment and directly affected by it, especially by culture. It is contact with others that humanizes us and allows for mediations that generate development (Vygotsky, 2014, Vol. II).

It is in the school context that this pseudoconcreteness is dismantled, as seen in the way financial phenomena are apprehended in isolation and disconnected from their social, historical, and political roots. In this privileged space of interaction and intentional formation, the contradictions inherent to the socioeconomic system—often invisible or taken for granted can be made explicit and critically analyzed (Silva & Baroni, 2025, in press).

By fostering dialogue, problematization, and the provision of adequate conceptual formation, the school enables students to transcend the immediate and fragmented perception of financial reality, developing the ability to understand power relations, mechanisms of production and consumption, and the social and environmental implications of their financial choices. In this way, the Zone of Proximal Development (ZPD) established in the school between students and teachers constitutes a fundamental relationship for pedagogical mediation aimed at overcoming pseudo-concreteness and fostering the construction of a truly emancipatory financial consciousness.

In this regard, we understand Financial Education as the process of problematizing personal and collective financial life, with the aim of critically understanding and analyzing the financial world in its social, political, economic, environmental, and cultural dimensions. This perspective seeks to transform the mechanisms of economic dependence and social inequality, in the constant pursuit of a dignified life for all individuals and societies (Baroni, in press).

When speaking of all, we can reinforce the idea that, for pseudo-concreteness to be overcome, contradictions must be provoked within society as a whole and not merely within a single group. For this reason, Financial Education in the school context is essential so that students may become agents of transformation within their family circles, generating the very contradictions that will foster development.

Therefore, understanding the human being as a historical-cultural subject immersed in an environment of meanings and relations is fundamental for analyzing the genesis of pseudo-concreteness in Financial Education. Social representations of money, dominant narratives linking success and happiness to consumption, and financial practices naturalized within a given cultural context can obscure individuals' real needs and hinder the critical analysis of a financial situation.

To foster this critical awareness, educators may introduce activities that generate contradictions, such as using the *Citizen's Calculator* to compare the total cost of a financed item with the amount that would accumulate if the same money were invested over time. This would connect theory to a practical school scenario, demonstrating how a digital tool can mediate dialectical thinking.

### **3. Culture of Consumption: The Production of Needs and Objectification of Financial Relations**

The understanding of the human being as a historical-cultural subject immersed in an environment of meanings leads us to a critical analysis of the culture of consumption that predominates in contemporary societies. Far from being a natural or universal phenomenon, this culture is a historical and social

construction, intrinsically linked to the development of capitalism and the logic of capital accumulation. Within it, consumption transcends the satisfaction of basic needs, becoming a social imperative and one of the central pillars of both individual and collective identity.

This culture is characterized by the incessant production of new needs, often artificial or induced, which go beyond what is materially necessary for survival and well-being. As Marx (2013 [1867]) insightfully demonstrated in his analysis of commodity fetishism, products lose their connection with the human labor that produced them and acquire a life of their own, endowed with magical attributes and a seductive power that obscures their true qualities and the social relations that underlie them. This process is intensified by the expansion of marketing and advertising, which function as powerful cultural mediators, creating desires and associating material goods with social status, happiness, and personal fulfillment. The use value of a product is often eclipsed by its symbolic and social value, leading to the pursuit of what is “desirable” rather than what is “necessary.”

In this context, financial relations acquire an excessive centrality and undergo a process of objectification or reification. Human interactions, which should be grounded in values such as solidarity, cooperation, and mutual recognition, are increasingly mediated by money and by the logic of the market. People are evaluated according to their wealth, purchasing power, or capacity for indebtedness, rather than by their human qualities or their social contributions.

This objectification is not limited to material acquisitions; it permeates interpersonal relationships, access to basic services (health, education, housing), and even one's self-perception in the world. Credit, for instance, which could serve as a tool for access, becomes a mechanism of conditional social inclusion, while indebtedness comes to be viewed as an individual problem, disregarding its structural roots.

Indebtedness is culturally naturalized, seen as something necessary to avoid social exclusion, since saving takes time and there is a constant social appeal to the urgency of consumption. Not even the numerical evidence showing the total amount paid to financial institutions in interest—as opposed

to what could be gained by putting interest to work in favor of the individual through saving—is often sufficient, at least in an initial approach, to overcome this naturalized cultural concept.

This pseudo-concreteness manifests itself when the complex reality of social and economic relations is reduced to mere numbers and transactions. An appliance store, aware of this urgency to consume, once based an advertising campaign on the slogan *“How much fits in your pocket?”*, adjusting financing terms so that consumers would be enticed to purchase its products under the guise of false generosity (Freire, 1979). Immersed in this culture, the individual may struggle to perceive the manipulations behind the appeal to impulsive consumption, the ethical and environmental implications of financial choices, or the systemic inequalities that shape financial opportunities.

In this scenario, Financial Education faces the challenge of moving beyond mere technical instruction on budgeting and investments, seeking instead to unveil the layers of meanings and values that underlie financial relations and to enable individuals to critically understand the social construction of their “needs” and their own transformative agency within this system. This complexity becomes even more pronounced with the advance of financial capitalism, a stage in which the centrality of financial institutions and the logic of consumption in advance become increasingly prominent.

Financial capitalism is the current stage of capitalism (Lima, 2021), in which financial institutions play a central role through access to credit and capital speculation. In the first case, this new phase is marked by anticipated consumption, and in the second, by the stock market in particular. Its driving force, therefore, is the consumerist culture, which influences the production of needs often artificial leading to the objectification of social relations, including those of a financial nature. According to Bauman (2008), adapting to the precepts of this consumer culture is the only choice available to the individual.

It is at this point that contradictions become essential and must also find space within school environments. As educators, it is fundamental that we invite reflection around questions such as: Do my material possessions define me? What

does the clothing I wear say about me? How can my financial life be improved? What are the collective consequences of this consumerism? Advertising and marketing, widely disseminated through digital technologies, play a central role in constructing desires and shaping consumer habits, making “a basic need become a sophisticated desire” (Mazzi & Lima, 2021, p. 236). The authors illustrate this issue with the example of the human need to wear shoes, to which values are added through advertising and marketing, transforming something that could be acquired at an affordable price into a commodity of high added value.

There is an exhaustive dissemination of consumerist ideas by the media, generating a perceived need for the advertised products a force so strong that it also produces the feeling that, by not acquiring them, we are diminished in our human condition and possibly excluded from social circles and environments in which possessing or using those products becomes a prerequisite for belonging.

However, acquiring these products is not enough, since demands are constantly transformed and new needs must be continuously generated so that further acquisitions can take place in an endless and insatiable flow. After all, consumerism is the driving force of the current economic model. As Bauman (2008) aptly observes, consumerism is based on the irrationality of consumers, stirring consumerist emotions at the expense of reason. In this sense, “deception is not a sign of trouble in the consumer economy. On the contrary, it is a symptom of its good health and of its being firmly on track” (Bauman, 2008, p. 65).

Consumption is a condition of existence in the consumer society—a lifestyle. Other cultural options disappear from the horizon of possibilities. A central figure in the dissemination of this lifestyle today is the digital influencer: individuals in the field of digital marketing who use various technologies and digital resources to promote products attached to lifestyles and trends. This force is so powerful that even “human bonds tend to be conducted and mediated by the market of consumer goods” (Bauman, 2008, p. 108). Hence the importance of establishing, through Financial Education, a process of problematizing personal and collective financial life (Baroni, 2021), aimed at critically understanding and analyzing the financial world in its social, political, economic, environmental, and cultural dimensions.

Thus conceived, within school environments it is necessary to promote it through different forms of analysis, and with regard to mathematical analysis, this refers to a Mathematics that unveils reality, making it possible to be understood in depth through its symbolic system, concepts, and various calculations. Its purpose is to read the world in order to transform it day by day, with social justice as its ultimate goal (Baroni, 2025, forthcoming).

Amid this complex web of consumer culture and financial capitalism, digital tools such as the *Citizen's Calculator*, made available by the Central Bank of Brazil, emerge with an ambivalent yet potentially fundamental role. Although its primary function is to assist in the simulation of routine financial calculations (see Figure 1)—such as the total value of financing, investments with regular deposits, loans with fixed installments, and value adjustments—its importance transcends mere technical calculation.

Figure 1 – Options for simulating financial operations available in the Citizen's Calculator.

The figure consists of four separate windows of a financial calculator, each with input fields for 'Número de meses', 'Taxa de juros mensal (%)', and 'Capital atual (depósito realizado no início do mês)'. Each window includes a 'Metodologia' link and buttons for 'Calcular', 'Limpar', 'Voltar', and 'Imprimir'.

- Valor futuro de um capital**: Simulates the future value of a capital. Input fields: Número de meses, Taxa de juros mensal (%), Capital atual (depósito realizado no início do mês), Valor obtido ao final.
- Aplicação com depósitos regulares**: Simulates the application with regular deposits. Input fields: Número de meses, Taxa de juros mensal (%), Valor do depósito regular (depósito realizado no início do mês), Valor obtido ao final.
- Financiamento com prestações fixas**: Simulates financing with fixed payments. Input fields: Nº. de meses, Taxa de juros mensal (%), Valor da prestação (Considera-se que a 1a. prestação não seja no ato), Valor financiado (O valor financiado não inclui o valor da entrada).
- Correção de valor por índices de preços**: Corrects value by price indices. Input fields: Selecione o índice para a correção (IGP-M (FGV) - a partir de 06/1989), \* Data inicial (MM/AAAA) (Inclui a taxa do mês inicial), \* Data final (MM/AAAA), Valor a ser corrigido. Buttons: Corrigir valor, Voltar.

Source: prepared by the authors

From a historical-cultural perspective, its pedagogical use can serve as a necessary instrument for the objectification of financial relations in a more critical way. By allowing individuals to input real data from their own budget or from a loan and quickly and concretely visualize the impact of interest rates, terms, and adjustments, the calculator provides the possibility of demystifying the logic

behind loans and investments. This helps break with pseudoconcreteness by transforming abstract concepts into tangible elements, enabling individuals to perceive the traps of anticipated consumption and speculation, and to develop a sharper awareness of the real implications of their financial decisions in both their daily lives and the broader social context.

As an example, let us use the option “loan with fixed installments,” assuming that an individual wishes to finance a used car valued at R\$30,000.00 in 60 fixed monthly installments, with no down payment. Currently, the interest rate offered in such operations ranges between 3% and 4.5% per month; therefore, we will run a simulation at 3% per month to calculate the amount of the monthly installment due. The calculation performed by the Citizen’s Calculator can be seen in Figure 2.

Figure 2 – Simulation performed using the “loan with fixed installments” option, selected from Figure 1.

**Financiamento com prestações fixas**  
Simule o financiamento com prestações fixas

Nº. de meses   
Taxa de juros mensal  %  
Valor da prestação   
(Considera-se que a 1a. prestação não seja no ato)  
Valor financiado   
(O valor financiado não inclui o valor da entrada)

**Financiamento com prestações fixas**  
Simule o financiamento com prestações fixas

Nº. de meses   
Taxa de juros mensal  %  
Valor da prestação   
(Considera-se que a 1a. prestação não seja no ato)  
Valor financiado   
(O valor financiado não inclui o valor da entrada)

Metodologia

Calcular Limpar Voltar Imprimir Calcular Limpar Voltar Imprimir

O total desse financiamento de 60,00 parcelas de 1.083,99 reais é 65.039,40 reais, sendo 35.039,40 de juros.

Source: prepared by the authors

Before proceeding with the example, we want to emphasize that the exploration of this tool must go beyond mere technical operation and instead become a catalyst for critical analysis of financial reality. Questions such as the total amount paid in installments—often more than double the value initially financed today—and the reason for this substantial difference, which lies in interest rates and market conditions, should serve as the starting point for deeper debate. In addition, proposing research on interest rates in other Latin American countries and in nations chosen by students can broaden the perspective beyond the local context.

These guidelines align with the principles of Critical Mathematics Education (Skovsmose, 2014), as they prepare individuals to denaturalize economic phenomena by recognizing the implications of financial decisions. Such an approach not only strengthens awareness of the impact of efficient political and economic administration in the country but also equips individuals to critically analyze the structures that shape their own financial conditions.

Continuing the critical exploration of the *Citizen's Calculator*, we can now carry out a new simulation that elucidates the implications of consumer culture and the pseudoconcreteness of financial decisions. Choosing the option "investment with regular deposits" (Figure 3), we will assume that the same amount as the monthly installments from the previous simulation (R\$1,083.99) will now be deposited monthly. To make the analysis even more relevant, we will use an interest rate of 0.5% per month, which approximates the current yield of the Brazilian savings account (*caderneta de poupança*). Although this investment is often discredited due to its low profitability, it still represents an option considered by a large part of the population (Carvalho, 2021), making it a significant starting point for contrasting the cost of indebtedness with the potential for capital accumulation.

Figure 3 - Simulation performed using the "investment with regular deposits" option selected from Figure 1.

Source: prepared by the authors

If we were to apply this example with students in the classroom, the subsequent reflection would be of paramount importance for deepening the understanding of pseudoconcreteness and consumer culture. Students could be

invited to compare the amount that would be saved by choosing to save money for 26 months instead of financing the purchase of the car in 60 monthly installments—a period more than twice as long. At this point, space is opened to confront the ingrained notion that financing is the only or the best alternative for acquiring a material good. This occurs because the numerical simulation, by making visible the real cost of immediate consumption and indebtedness, unveils the contradictions between the discourse of facilitating access and the harsh reality of financial exploitation.

In this sense, the classroom becomes a privileged environment for the dialectical mediation of information, allowing students to question the reasons that motivate purchases that generate such significant losses, the urgency imposed for the acquisition of products, and the price paid for such impatience. More profoundly, this analysis makes it possible to expand the discussion toward the exploitation of the poor and the insufficiency of income, as well as the need for public policies that ensure greater access and rigorously monitor these financial operations. Such reflections not only broaden students' vision beyond their individual reality but also raise their awareness of the importance of efficient political and economic administration, promoting a critical and collective financial consciousness that transcends the personal sphere and is embedded in broader social issues.

The discussion can and should go beyond the individual, addressing the social contradictions intrinsic to financial capitalism: Why is the urgency to acquire a product so highly valued, and what is the price paid for this acceleration of consumption? How does this logic exploit the poor and relate to income insufficiency and social inequalities? By deepening the analysis, it becomes clear that individual financial decisions are not merely personal, but rather reflections and products of broader social and economic structures. Thus, the reflection expands to the need for public policies that ensure greater access to fair financial alternatives, regulate predatory operations, and promote a more equitable distribution of income. This multidimensional approach to Financial Education in the school environment, grounded in Historical-Cultural Theory, prepares

individuals not only to manage their own money but also to understand their role in a complex society, fostering collective agency in the pursuit of structural transformations that overcome the objectification of human relations by capital.

In this article, we are particularly interested in analyzing this example with regard to the establishment of a contradiction through technology. In a matter of seconds, the software enables the confrontation of a strategy deeply consolidated in society: financing. This digital confrontation, by immediately revealing the real and often exorbitant cost of anticipated consumption, challenges the pseudoconcreteness that naturalizes indebtedness as the only means of access to material goods.

Mediation through the *Citizen's Calculator* not only informs but also problematizes a socially accepted practice, exposing the gap between the immediate perception of "having now" and the reality of "paying much more later." It is in this unveiling, mediated by the digital tool, that the breaking of pseudoconcreteness becomes possible, opening the way for deeper reflection on true needs and on the systemic implications of individual financial decisions.

In its smartphone version, the *Citizen's Calculator* also includes an option called "methodology," through which it is possible to access the formula used in the calculation something that can be further explored depending on the teaching objectives and the specific characteristics of each group of students. An invitation we strongly recommend at this point is the exploration of the homepage of the Central Bank of Brazil (BCB), where it is also possible to access a wealth of information on, for example, "monetary policy" (including annual inflation targets, among other topics) and "financial stability" (addressing the national financial system and the Brazilian payments system, for instance).

Returning to the issue of consumerism, the construction of its urgency is underway with increasing intensity. It has already become cultural not to save—that is, not to wait to buy but rather to acquire immediately. Data from 2024, indicating an increase of more than 20% in the number of automobile loans compared to the previous year, clearly reflect this trend that has been observed in recent years.

This movement is reinforced by the urgency imposed and by the consolidation of the idea that financing is the best if not the only way to acquire high-value material goods, such as a car. The naturalization of this practice is strengthened by the surrounding social context: people around us finance, the government encourages such acquisitions under the justification of “stimulating the economy,” and in the absence of immediate financial resources, the solution presented by common sense is invariably financing. After all, one must buy and buy immediately.

It is through social relations that we assign meaning to these imperatives of consumption. The urgency and the idea of “having now,” mediated by culture and by signs, are internalized as genuine needs, obscuring reflection on alternatives and real costs. This social and cultural dynamic contributes decisively to the formation of the pseudo-concreteness that is central to our analysis, where the appearance of access and progress through immediate consumption, facilitated by credit, masks the contradictions of indebtedness and the alienation from genuine needs. Financial “solutions” are perceived in their phenomenal form, disconnected from their essence and from the social and economic relations that constitute them, making it difficult for individuals to perceive the complexity of the system and the manipulations that run through it.

The role of the educator, therefore, is to help students deconstruct this narrative. An initial step is to promote study tasks that create a direct contradiction. For example, students could analyze a digital advertisement for a financed product and then use a tool such as the *Citizen’s Calculator* to quantify the real cost of the transaction, including all interest and fees. This process of comparing the advertised convenience with the actual financial burden compels a movement of dialectical thinking, unveiling the manipulation at play and challenging the naturalized idea that financing is the only option.

But why do people not question this imperative logic of consumption and financing? This occurs because specific meanings have been attributed to these financial relations, and it is these culturally constructed meanings that profoundly shape the way we act and think in society. Such uncritical internalization

generates pseudoconcreteness, a layer of apparent normality that conceals the complexities, contradictions, and manipulations inherent in the system. This condition, which prevents the perception of reality in its totality, can only be confronted through the unveiling and analysis of contradictions. It is precisely the nature and mechanisms of this pseudoconcreteness in financial reality that we will explore in greater depth in the next section, seeking to understand how this deceptive appearance manifests itself and what its implications are for autonomy and human development.

#### **4. Pseudo-concreteness: The Deceptive Appearance of Financial Reality**

Deepening the discussion initiated in the previous section, where we pointed out that the lack of questioning of consumption and indebtedness logics stems from the attribution of socially constructed meanings, pseudoconcreteness emerges as a central concept for understanding the distorted way in which financial reality is often apprehended.

In the field of Financial Education, this pseudoconcreteness manifests itself in various ways. First, in the objectification of human relations in merely monetary terms, as previously discussed. The value of an individual or a good is reduced to its price or its capacity to generate profit, disregarding the complex social relations, labor, and cultural values involved. A clear example is the perception of credit not as a relation of debt and interest, but as an extension of immediate purchasing power, a kind of “money that appears” (Ross, 2014).

This illusion conceals the commitment of future income and the severe consequences of indebtedness. What is even more concerning is that this deceptive perception extends not only to the satisfaction of desires but often to the coverage of basic needs. We observe, for example, the widespread use of credit cards in supermarkets, either because income proves insufficient for monthly expenses or because essential resources have been diverted to less necessary purchases, creating an imbalance in the household budget.

However, in many situations, the reality is even harsher: money simply does not cover basic expenses, pushing families into the vicious cycle of credit as the

only means of subsistence thereby deepening pseudoconcreteness by naturalizing a condition of vulnerability. Moreover, pseudoconcreteness in financial reality is reinforced by the predominance of a language and tools that promote fragmentation and decontextualization. Financial information is often presented in isolation, without revealing the chains of production and consumption, labor relations, or the social and environmental impacts of economic activities.

On the other hand, technical terms, rates, and graphs can generate a false sense of objectivity and clarity, since mathematical language is often used as a language of power (Skovsmose, 2001). It is enough to observe how mathematical results or statistical data are frequently employed as irrefutable arguments to persuade ideas (Borba, 2001). Meanwhile, the true complexity of the system and its mechanisms of power remain concealed. This leads individuals to make decisions based on a superficial view, without understanding the structural forces that act upon their financial lives.

For Historical-Cultural Theory, overcoming this deceptive appearance is a process that requires mediation and the explicit unveiling of contradictions. It is not enough to present the facts; it is necessary to reveal the underlying relations and meanings. The school, and the Financial Education within it, play a fundamental role in this process. Rather than merely teaching how to “manage money,” the challenge is to create conditions in which students—through problem-posing activities, technology, and access to historically accumulated knowledge—understand that money, credit, consumption, and labor are social categories, and not merely individual or natural ones, as we demonstrated with the example of car purchase in the previous section.

Only in this way will it be possible to move from pseudo-concreteness to a mediated concreteness, in which reality is apprehended in its totality, enabling individuals to act consciously and transformatively upon their own lives and upon society. In this scenario, digital technologies emerge as tools with ambivalent potential, capable both of reinforcing pseudo-concreteness and of contributing to its overcoming.

On the one hand, banking apps, simplified investment platforms, and constant exposure to hyper-segmented digital advertisements can intensify the

illusion of control and immediate gratification, perpetuating a fragmented view of finances. On the other hand, when used pedagogically, digital technologies become instruments of symbolic mediation, in line with Vygotsky's thought (2014, Vol. II), as they enable the simulation of complex scenarios, the interactive visualization of financial data, access to diversified information, and the creation of networks for discussion and collaboration.

This transition from pseudo-concreteness to mediated concreteness can be achieved by intentionally creating moments of contradiction in the classroom. One possible approach is to use tools such as the *Citizen's Calculator* to simulate complex scenarios. By asking students to input the terms of a car loan, they immediately see the total amount of interest paid—often more than double the vehicle's initial value. This numerical evidence directly contradicts the socially accepted notion that financing is a simple and normal solution. Such confrontation leads students to ask deeper questions: "*Why is there such a large difference?*" and "*What social and economic factors make this practice seem so natural?*" This is the dialectical process in action, in which the initial appearance of a problem is unmasked to reveal its deeper and systemic roots.

The *Citizen's Calculator*, previously exemplified, is a micro example of how technology can, in seconds, unveil the logic behind a loan, exposing the contradictions inherent in its real cost for both the personal budget and the indebted society as a whole. By enabling the manipulation of variables, the comparison of scenarios, and the concretization of abstract concepts, digital technologies can support the development of higher psychological functions related to critical analysis and financial planning—such as logical thinking, reasoning ability, active memory, voluntary attention, the capacity to plan and carry out intentional actions, language, among others—acting as instruments present in mediation with other human beings, with the aim of constructing a more concrete and dialectical understanding of financial reality.

A new and current manifestation of the effects of pseudo-concreteness highlights the illusion of control and the demand for immediate financial return: online betting, such as popular sports bets and the game *Fortune Tiger* (developed by Pocket Games

Soft), more widely known as the “tigrinho” game. In these virtual environments, the complexity of probability mechanisms and loss statistics is obscured by the gamified interface, the promise of quick gains, and the sense that luck or individual skill are the only determining factors. Money, in this context, becomes an even greater abstraction—reduced to points or digital tokens fluctuating on screens, disconnected from its real exchange value and from the labor required to obtain it.

In the “tigrinho” game, for example, the environment suggests a simple playfulness, very similar to traditional casino slot-machine games, in which a play involves the alignment of figures according to a certain pattern, aiming to obtain a desirable combination in which the image of a tiger functions as a wild card (comparable to card games), capable of replacing a missing figure. This “luck” (or misfortune, with a much higher probability) is then transformed into points and, subsequently, into money, in an immediate manner.

There is a constant appeal to emotion, through sounds that amplify victories and through varying percentages of rewards. According to Mendieta and Queiroz (2024), these are elements within the scope of neuromarketing, where everything is directed toward “the goal of generating positive sensations in the individual in online betting games, in such a way that they are unable to distinguish gains in the game from financial losses” (p. 15).

The spaces of these games are consolidated as pseudo-concreteness connects with the belief in patterns, “miraculous tips,” and the possibility of “breaking the algorithm,” while ignoring the inherent disadvantage and the profit-driven logic of the platforms. Questions are not raised about who loses, who actually profits from this business (and how much), whether the business is legitimate, or whether the environment is safe. In other words, bettors are driven solely by a (pseudo) miraculous solution to their financial problems, wagering everything on the possibility of changing their situation with a stroke of luck.

The deceptive appearance of financial reality promoted by influencers who advertise these products conceals the financial and social consequences of such involvement, such as indebtedness and family disintegration side effects often perceived as individual management failures rather than as the results of a

perverse system designed for exploitation and sustained by the absence of critical analysis of the risks and the real economic relations at play.

Pseudo-concreteness, therefore, is not merely a theoretical concept but a deceptive appearance of financial reality that materializes and deepens in contemporary phenomena such as online betting. It acts as a veil, preventing individuals from perceiving the intrinsic power relations, the logics of exploitation, and the structural contradictions that shape their financial lives. By reducing complexity to an illusion of luck, skill, or a magical solution to financial problems, pseudo-concreteness depoliticizes the economic issue, individualizes failures, and hinders the construction of a critical awareness capable of unveiling the essence of processes and seeking paths toward genuine and collective autonomy.

## 5. Final Considerations

The journey throughout this article has led us to an in-depth analysis of pseudo-concreteness permeating financial reality, forged by the culture of consumption, the fetishization of commodities (Marx, 2013 [1867]), and the reification of social relations. Complexly and ambivalently mediated by digital technologies, this deceptive appearance of reality prevents the understanding of its true dynamics. Overcoming this superficiality—essential for a Critical Financial Education that promotes autonomy and goes beyond the technical lies fundamentally in the development of dialectical thinking.

Dialectical thinking, in its Hegelian (Müller, 2020) and Marxist (Marx, 2013 [1867]) essence, is not satisfied with the final result or with the surface of the phenomenon. It drives an incessant movement of questioning origins, seeking contradictions, and understanding the historicity of phenomena. In the financial field, this means denaturalizing ideas such as “financing is the only alternative” or the apparent generosity of banks. The popular saying, “*we always manage to pay the installment, but we never manage to save*,” illustrates pseudoconcreteness, revealing the uncritical internalization of the logic of indebtedness to the detriment of saving. Dialectical thinking allows us to

inquire into the social and economic relations underlying such perceptions and the real cost of immediate consumption.

In this sense, schools and educational processes must promote a rupture, becoming privileged environments for questioning the meanings attributed to money and consumption. A dialectical approach to Financial Education prepares individuals to critically analyze information and to deconstruct dominant narratives about consumption and money which Bauman (2008) describes as the transformation of people into commodities as well as to understand the power relations that permeate the financial system. Pedagogical strategies that incorporate dialectical thinking may draw on digital technologies as instruments to foster such reflections. The *Citizen's Calculator*, for example, allows for simulations of indebtedness, confronting the “false generosity” of banks with the harsh reality of interest rates, unveiling the dangers of anticipated consumption and financial fragility.

Although they may reinforce pseudo-concreteness through ad personalization and the exploitation of cognitive biases in betting platforms (*bets* and *tigrinho*), when consciously integrated into Education, digital technologies can be harnessed to analyze consumption patterns, visualize the digital footprint of finances, and discuss the ethics of data monetization. This empowers individuals to “read the financial world” (Freire, 1979) in its complexity, recognizing interconnections and transforming Mathematics into an instrument for unveiling social and power relations.

In sum, overcoming pseudo-concreteness in financial education, mediated by digital technologies, requires a dialectical approach that confronts appearances, unveils contradictions, and promotes the understanding of historical and social forces, thereby enabling critical and transformative individuals to contribute to a more just and equitable society.

## Pseudoconcreticidad, Tecnologías Digitales y el reto de la Educación Financiera en la cultura del consumo

### RESUMEN

Este artículo analiza la pseudoconcreción que impregna la realidad financiera contemporánea, intensificada por la cultura de consumo y la omnipresencia de las tecnologías digitales. Con base en la Teoría Histórico-Cultural, argumentamos que la percepción superficial y fragmentada de las finanzas resulta de la fetichización de las mercancías y la reificación de las relaciones sociales, que transforman las complejas interacciones humanas en meras transacciones monetarias. Las tecnologías digitales a menudo refuerzan esta pseudoconcreción, como lo exemplifica el marketing mediático que incentiva el endeudamiento para adquirir bienes y las plataformas de apuestas en línea ("tigrinho" y "bets"), que ocultan los riesgos y la lógica de la explotación. El objetivo es proponer que superar esta apariencia engañosa requiere el desarrollo del pensamiento dialéctico. Esta forma de pensar, que busca las contradicciones y la historicidad de los fenómenos, nos permite desnaturalizar discursos como "la financiación es la única opción" o la "falsa generosidad" de los bancos. Ilustramos cómo la Educación Financiera Crítica, al integrar el uso pedagógico de tecnologías digitales — como la Calculadora Ciudadana —, puede desmitificar conceptos abstractos y promover el análisis crítico de las relaciones de poder en el sistema financiero. Destacamos que esta mediación prepara a los estudiantes para comprender el mundo financiero y actuar de forma consciente y transformadora en sus vidas y en la comunidad.

**Palabras clave:** Teoría histórico-cultural. Consumismo. Calculadora Ciudadana.

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