

Weaving reflections on critical awareness and the choice of Mathematics textbook

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2238-0345 

10.37001/ripem.v13i4.3645 

Received • 04/05/2023

Approved • 20/06/2023

Published • 07/10/2023

Editor • Gilberto Januario 

Abstract: This article proposes a reflection on the choice of textbook (TB) and the importance of critical awareness in this process. The result of doctoral research, with a qualitative approach, this text shares its results presenting a new perspective of analysis for the tensions that permeate this theme. We believe that the moment the teacher chooses books has a direct consequence on the students' critical formation process, as this material can contribute both to reproducing the oppressive ideology and challenging students to think critically in the search for equity and social justice. Thus, the choice of TB by the teacher has an impact on the critical formation of students, which depends on the teacher's autonomy and conscience. In summary, critical awareness is fundamental for teachers in choosing TB and in promoting pedagogical practices that empower students to become agents of change.

Keywords: Awareness. Critical Training. Textbook Selection.

Tejiendo reflexiones sobre la conciencia crítica y la elección de libros de texto de Matemáticas

Resumen: Este artículo propone una reflexión sobre la elección del libro de texto (LT) y la importancia de la conciencia crítica en este proceso. Fruto de una investigación doctoral, con enfoque cualitativo, este texto comparte sus resultados presentando una nueva perspectiva de análisis de las tensiones que permean este tema. Creemos que el momento en que el docente elige los libros tiene una consecuencia directa en el proceso de formación crítica de los estudiantes, ya que este material puede contribuir tanto a reproducir la ideología opresiva como a desafiar a los estudiantes a pensar críticamente en la búsqueda de la equidad y la justicia social. Así, la elección de la LT por parte del docente incide en la formación crítica de los estudiantes, la cual depende de la autonomía y la conciencia del docente. En resumen, la conciencia crítica es fundamental para que los docentes elijan la LT y promuevan prácticas pedagógicas que empoderen a los estudiantes para convertirse en agentes de cambio.

Palabras clave: Conciencia. Formación Crítica. Selección de Libros de Texto.

Tecendo reflexões sobre a consciência crítica e a escolha do livro didático de Matemática

Resumo: Este artigo propõe uma reflexão sobre a escolha do livro didático (LD) e a importância da consciência crítica neste processo. Fruto de uma pesquisa de doutorado, de abordagem qualitativa, esse texto compartilha seus resultados apresentando uma nova perspectiva de análise para as tensões que atravessam essa temática. Acreditamos que o momento da escolha dos livros pelo professor tem direta decorrência sobre o processo de formação crítica dos estudantes pois, esse material pode contribuir tanto para reproduzir a ideologia opressora quanto desafiar os alunos a pensar criticamente buscando uma equidade e justiça social. Desse modo, a escolha do LD pelo professor tem impacto na formação crítica dos estudantes, que depende da autonomia e da consciência do professor. Em síntese, a consciência crítica é fundamental para os professores na escolha dos LD e na promoção de práticas pedagógicas que empoderem os alunos a se tornarem agentes de mudança.

Palavras-chave: Conscientização. Formação Crítica. Seleção do Livro Didático.

1 Introduction

The textbook (TB) is one of the leading materials used in classrooms throughout Brazil. Beyond presenting an organization of content, skills, and competencies recommended by curriculum documents for basic education, TBs in general, and mathematics in particular, have an ideology that supports them, disseminating ideas, creating and maintaining stereotypes and determining what is expected and what is accepted from society. This material is not neutral and can be an ally in the constitution of civic education in positive or negative aspects.

In Brazil, this material is evaluated and distributed free of charge through the National Book and Teaching Material Program (Programa Nacional do Livro e do Material Didático — PNLD), created in 1985 and last expanded¹ in 2017. In this process, the National Education Development Fund (Fundo Nacional de Desenvolvimento da Educação — FNDE) prepares and publishes call notices for interested publishers to submit their books. Once submitted, the Ministry of Education conducts the pedagogical evaluation that counts on “a specific technical committee, made up of experts from different related areas of knowledge” (Brasil, 2017). The review observes whether the works follow the following premises. They must respect laws and educational guidelines; respect the ethical values of citizenship and social coexistence; use a coherent and appropriate theoretical and methodological approach; update correct concepts, information, and procedures; offer appropriate and relevant guidance to the teacher; observe spelling and linguistic norms of the language used; pay attention to the editorial structure and graphic design; and ensure the quality of the text and the relevance of the topic (Brasil, 2017).

Once enabled, the works go through a fundamental stage, namely teachers’ or schools’ choices. In 2017, Decree 9.099, which updates the new functioning of the PNLD, opened up the possibility for schools to decide whether the adoption of teaching material will be unique for each school, each group of schools, or all schools in the network. This movement, with which we disagree, creates gaps so that the characteristics and subjectivities of each school are disregarded, which weakens the teaching and learning processes.

Given this context, we consider it essential that teachers participate in choosing TBs not just in a merely bureaucratic but conscious action. In this sense, this article² discusses critical awareness through the lens of Paulo Freire’s works. This author highlights the importance of awareness as an unveiling of reality in which the possibility for a critical reading of the world

¹ For more information about the functioning of the PNLD and its expansions, see Mazzi and Amaral-Schio (2021) and Amaral et al. (2022).

² This article is an excerpt from the first author’s thesis, guided by the second author. The third author participated in the qualification and defense panel, collaborated with theoretical discussions, reviewed the ideas, and edited the text.

opens up. Additionally, this reference will serve as support to justify the need to develop a process of critical consciousness for the selection of textbooks, or, in other words, a recognition of the importance of choosing this material due to its direct influence on the teaching and learning processes.

2 Awareness raising

Many people credit Paulo Freire with creating the term awareness because this word expresses a central concept of his ideas about education. However, the author (Freire, 2016) states that this word was coined around 1964 by a team of professors who were part of the Brazilian Studies Higher Education Institute (Instituto Superior de Estudos Brasileiros — ISEB), including Álvaro Vieira Pinto. Upon realizing the depth and meaning of the concept of awareness, Paulo Freire began to use the term, giving it political-pedagogical content.

Freire argues that, when reading the world, human beings³ do not develop an awareness of differences in power and privilege and underlying inequalities in social relations. Initially, when a human being approaches a situation, their posture is usually not a critical position but rather a naive position.

In this sphere of spontaneity, when approaching reality, human beings simply experience their own reality, and which they investigate. This consciousness is not yet awareness — this constitutes the critical development of awareness. Therefore, awareness implies that we move from the spontaneous sphere of apprehension of reality to a critical sphere in which reality offers itself as a knowable object and in which man assumes an epistemological position (Freire, 2016, p. 56).

This means that the awareness produces cognitive conditions for evaluating reality, taking it in its entirety, which allows people to read their place in the world, understand their lives in new ways and perceive the structures of power that shape the society in which they live, even knowing that human beings are conditioned, aware of locating themselves in their reality, their action on the world in a dialectical process, understanding reality as something dynamic and complex.

Awareness, then, “is a process that occurs at a determined moment, [and] must continue as a process at the next moment during which the transformed reality reveals a new profile” (Freire, 2016, p. 58). This new profile is now considered again, starting a new process. Thus, awareness is “the most critical approach to reality possible, unveiling it to know it, and to know the myths that deceive and help maintain the reality of the dominant structure” (Freire, 2016, p. 60). In this sense, it is a process of building critical consciousness, a consciousness that reveals reality and delves into the essence of the phenomenon to analyze it. This process involves a constant interaction between the subject and the object, between theory and practice, and between knowledge and action; it is not a fixed state but a dynamic and continuous movement of discovery and change. For this reason, awareness does not consist of “being faced with reality” by assuming a falsely intellectual position. It cannot exist outside of praxis, that is, outside of the “action-reflection” act (Freire, 2016, p. 56).

Freire (2016) believes that awareness can be achieved through problematization, confrontation, in the act of responding to the challenges to which human beings are constantly provoked. Human being create themselves, reformulate themselves as subjects in every act of

³ Freire recognizes in *Pedagogia da esperança: um reencontro com a pedagogia do oprimido* [Pedagogy of hope: Reliving pedagogy of the oppressed] his debt to the feminists who showed him the sexist ideology of language. Since then, he has avoided using the term man and prefers to refer to “woman and man” as “human beings”.

responding to the challenges that their life context provides because this response requires reflection, invention, choice, decision, organization, and action. These elements are fundamental to human consciousness. It is described by Sanders (1968, p. 9) as “an awakening⁴ of consciousness’, a change of mindset that involves an accurate and realistic perception of one’s locus in nature and society; the ability to critically analyze their causes and consequences, comparing them with other situations and possibilities”. He adds a logical action aimed at transformation.

Furthermore, awareness transcends knowledge or recognition of the systems that often oppress specific groups. It is a decision and a commitment. In Freire’s (2016, p. 122) words, “awareness, obviously, [...] does not stop, stoically, at the pure, subjective recognition of the situation, but, on the contrary, [...] prepares men, at the level of action, to fight against obstacles to their humanization”. He adds, in another text, that “there cannot be awareness without denouncing unjust structures” (Freire, 2016, p. 147). In this sense, the term “awareness” refers to the process by which individuals who engage in dialogue and collaboration come to recognize the problems of the reality in which they live and agree to take joint actions to change it.

Awareness, as a critical attitude, has no end. It is a difficult and never-ending task, it is a process of continually reflecting and questioning how world views affect our perception. It is realized and continually remade in human practice. Upon becoming aware of the effects of reality on their way of thinking, human beings awaken the intention to act in response to the challenges that the current situation presents to them.

Freire (2016) argues that the primary objective of education should be awareness, as from this, the human being will perceive reality as it is, recognizing the ability to act in accordance with this new understanding. As a goal of education, awareness seeks:

[...] to awaken in the student a new way of thinking and feeling about existence, given the national conditions they face; it is to make them aware of your constant relationship with a country that needs their personal work to change its state of backwardness; it is to make them receive everything that is taught from a new angle of perception, that all their knowledge must contribute to the collective effort to transform reality. (Pinto, 1960a, p. 121)

The “banking” model of education, in which the teacher deposits knowledge and the student receives it, is criticized by Freire because it maintains the status quo, in which inequality is sustained as the people most affected are unaware of their social condition. The educational paradigm that opposes the “banking” paradigm,

whose purpose is to develop awareness and the critical attitude by which human beings choose and decide — frees human beings instead of subjugating them, domesticating them, putting them in agreement, as does education that prevails in a large number of nations around the world, aiming to adjust the individual to society, much more than to promote them in their trajectory. (Freire, 2016, p. 68)

A liberating education, as opposed to the “banking” model, enables movements to transform consciousness, transforming people so that they can transform the world. Dialogue is the way to achieve awareness, which is based on assumptions of equality of all people, their

⁴ The term 'awakening' is not understood here as something that needs to be triggered, but rather as a movement of transformation, that is, an act or moment of suddenly becoming aware of something.

right to knowledge and culture, and their right to criticize their situation and act on it (Nyirenda, 1996).

Within this awareness process, Freire (2015) proposes different stages of understanding reality. Critical consciousness is one of the stages. In *Educação como prática da liberdade* [Education as a practice of freedom], Freire (2015) announces three degrees of understanding of reality, which are the three consciousnesses: intransitive, naive transitive, and critical transitive⁵.

The first stage of consciousness is intransitive consciousness⁶. This term was adopted by Freire (2011) from the grammatical notion of the intransitive verb: one that does not allow its action to be transposed to another. “This form of consciousness represents an almost lack of commitment between man and his existence. [...] The intransitively conscious man escapes the apprehension of problems that lie beyond his biologically vital sphere” (Freire, 2015, p. 56).

After a societal change, such as an economic change, consciousness develops and becomes transitive due to the perception of certain incongruities and discrepancies (Freire, 2011).

The “naive transitive” consciousness, in turn, perceives social contradiction but transits within the limits of conformism, adopting fabulous explanations for phenomena. It is not capable of autonomous thinking because it does not take the risk of investigating the true causes, and, for this very reason, it is not capable of venturing towards change. It is the type of dependent consciousness; one that transfers responsibility for solving problems to others and institutions. (Kronbauer, 2017, p. 87)

Freire (2011, p. 51) points out that the transition from intransitive consciousness to naive transitive consciousness is automatic, but not from this to critical consciousness: it “only occurs with an educational process of awareness. This step requires a work of promotion and criticality” since the seriously harmful aspect of naive consciousness is the disregard, and, above all, the irony with which rational thinking is treated (Pinto, 1960b).

Thus, one of the conditions for this change to happen is “critical, dialogic, democratic educational work, in which the ability to think, deliberate, decide and make conscious options for action is developed” (Kronbauer, 2017, p. 87). In this sense, as Freire emphasized, it is necessary to transcend naive consciousness to gain the ability to understand the reality in which we live and which, in some way, oppresses us.

From Pinto’s perspective (1960a), the ability to be conscious or not of the factors and conditions that determine consciousness is the criterion for identifying the multiple varieties of individual representations of reality; that is, consciousness will be naive if it does not recognize the factors and conditions that determine its conscious relationship with the world; It will be critical consciousness if it can identify those factors and conditions. The author thinks that “the naive consciousness is a victim of the illusion of considering itself unconditioned” (Pinto, 1960a, p. 87); therefore, “as long as you do not know about your conditioning, or deny it, you will be excluded from the critical condition” (Pinto, 1960a, p. 21). Consciousness “receives the qualification of criticism because it is indeed permanently attentive to denouncing the influences to which it is subjected, criticizing them” (Pinto, 1960a, p. 84).

Naive consciousness and critical consciousness are not seen as dualism but as degrees

⁵ Freire’s inspiration for these stages stems from the texts by Álvaro Vieira Pinto (1960).

⁶ Also called magical consciousness or immersed consciousness.

of one *continuum* (Gonzatto, 2022; Pinto, 1960b). In other words, achieving critical consciousness can be seen as a growing process of assimilation of reality that influences and imposes ways of thinking and eventually conditions the subject to everything imposed.

Figure 1: Levels of consciousness



Source: Adapted by Gonzatto (2022)

Figure 1 illustrates the notion that subjects perceive their reality as ‘pink’ during the naïve stage of consciousness. In other words, this type of consciousness is strongly confined to common sense thinking and does not seek explanations for events. When they begin to question their world, color begins to lose its firmness, and individuals learn to transcend their assumptions, ask critical questions, and recognize the oppressive social forces that shape society.

Freire (2011, p. 50) reveals that naive consciousness is strongly emphasized in schools, indicating a growing need to develop critical consciousness that allows people to know, confront, unveil, and transform reality because “to the extent that one knows it, one tends to commit to their reality.” It is therefore necessary to reflect on the various elements of school culture (Munakata, 2016), such as the materials used daily by students in their citizenship formation.

Textbooks are crucial to the manifestation and development of critical consciousness. The above justifies the need for teacher awareness when choosing and using this material because this choice helps them break with the *status quo*.

3 Critical consciousness and the textbooks (TBs)

TBs influence students’ learning and cannot be understood as a neutral field in which only the content of the curricular component is under discussion. A printed or digital TB is created and edited to assist in educational teaching and learning processes. It contains knowledge of a specific curriculum component or area of knowledge based on the official curriculum prescriptions in force during its preparation. This knowledge is presented through ideas, concepts, and activities that allow students to apply the topics discussed and engage in investigations that go beyond what the material suggests. Furthermore, TBs are not neutral, as they are influenced by an ideology and disseminate values and beliefs of a particular culture in a specific historical period (Amaral, Mazzi, Andrade & Perovano, 2022).

In this sense, Thomaz (2013), Munakata (2016), and Matic (2019) observe that this resource operates by disseminating traditions, ideology, religion, politics, culture, gender and ethnic values and aims to ensure “true” discourse, generally one of the ruling classes. And those discourses take the form of control over the population by outlining teaching limits. Thus, the TB dictates which culture is to be taught (Apple, 1992).

If the TB conditions (Levy, 1997) the way the contents should be approached and is directed to the methodology, the teacher can follow the instructions present in this material without making objections, which can contribute to validating the principles and models presented in the book, as identified by Guimarães (2022) in the analysis of some of these resources. If the teacher is not attentive to the TB discourse, whether explicit or not, they may be contributing to the adjustment of their students, conditioning them and absolutizing the

power relations that structure society. Everyone involved in student education must seek methodological paths related to content and activities that promote learning and critical consciousness and choose books to achieve this objective.

We are not discussing the mathematical knowledge prescribed in textbooks here but the ideological marks that naturalize a conveyed view. Silva (2019) states that school mathematics is considered one of the most relevant subjects. Simultaneously, it appears harmless, as its teaching is believed not to offer space for social, economic, historical or philosophical discussions as it is excessively technical. However, the innocence of this curriculum component is apparent.

In this context, we argue that the moment the teacher chooses books directly impacts the students' critical formation process. TBs "constitute some of the most significant devices in pedagogical practice. They reveal curricular intentions, in their content, for the construction of student citizenship" (Valero et al., 2018, p. 3), and it is teachers who can recognize and understand which norms and values are being represented to negotiate and recreate the meanings and values present for their students to "denaturalize" these logics and not enhance the "dominated reading"⁷ (Apple, 1992) of what is stated in the TB. Critical education is essential to maintain or remove the veil that covers the teachers' reality or ideological cycle.

For this to be possible, teachers must have autonomy to choose textbooks. The restrictive conditions when teachers choose these resources must be transformed into spaces of freedom of action to guarantee their autonomy (Perovano, 2022). This autonomy recognizes that, despite the prescriptive limits to their work, teachers must be authors, sign "the authorship of their pedagogical work" (D'Ávila, 2008, p. 22), which will reverberate beyond the limits of their classroom.

In this sense, Lajolo (1996) argues that both the choice and the use of a textbook must result from a conscious exercise of the teacher's freedom in carefully planning curricular activities, which could strengthen the teacher's position as a subject in all practices that comprise their teaching, so that, by rewriting the textbook daily, they will reaffirm their position as a subject in their pedagogical practice, questioning the knowledge conveyed by the works.

The historical construction of knowledge is linked to social disputes in which the knowledge that triumphs is the one of interest to the dominant class. Thus, critical consciousness is considered important when choosing textbooks and how they will be used since the meanings conveyed can also question knowledge considered to be true (Lajolo, 1996), leading teachers to question their conceptions. In the Brazilian educational reality, where many teachers do not have the opportunity to critically reflect on the facts and determinations that affect their practice, textbooks, with their guaranteed presence in schools, can play a relevant role as an intervention agent in daily school life. It can help overcome the paradigmatic crisis faced by the school system (Lopes, 2000, p. 135).

However, it is essential to consider that TBs are also subject to government determinations. Due to Decree 9.099 (Brazil, 2017), TBs must support the implementation of the National Common Curriculum Base (BNCC). According to Santos (2022), this alignment of books with the Base can reinforce the consolidation of specific ideological brands. By determining it by decree, the possibility of offering approaches based on other knowledge matrices not based on the Eurocentric paradigm is limited. Thus, TBs are linked exclusively to a curricular model pre-established by the State, influenced by coloniality (Santos, 2022).

⁷ "Dominated reading" is, for Apple (1992), accepting the messages as they are presented in books.

Adapting the TBs to the BNCC is a form of control exercised over publishers and the agents that comprise and participate in the school space. Books thus become a means of controlling the behaviour of people and societies (Santos, 2019).

This criticism is because the BNCC was inspired by the Australian curriculum and the Common Core, a US base (Bigode, 2019), in addition to being created in an anti-democratic movement without the effective participation of the subjects that make up the school space and who, in fact, will work with those materials (Cássio, 2019). Furthermore, the decision that TBs follow the BNCC reinforces the pasteurization of the material, which requires the teacher to be attentive to what those books are proposing to avoid erasing the subjectivities of students and different school contexts. The very genesis of didactic work, if carried out under naive consciousness, also contributes to the maintenance of the dominant discourse since “to respond to the Notice [of the PNLD], a lot of care with citizenship, prejudices, differences, minorities (of all kinds) is taken). And what happens is that problems do not appear, but rather the hiding of many of those situations or invisibility and silencing” (Callai, 2016, p. 279, our addition).

Callai (2016) points out that there is still a lack of discussion that the curricula and content presented in the TBs are always chosen among others, which would contain different approaches than those exposed in the approved works, which can lead to a lack of diversity in the approaches and perspectives presented to students.

It is contradictory to note that the ideas contained in the Australian curriculum and the Common Core were imported. Nevertheless, they ignored Freire’s contributions to developing critical consciousness were ignored, although universities in Australia and the US were inspired by the author to create curriculum components, including teacher education. Critical consciousness is defended by Jemal and Bussey (2018) as being fundamental to the work and education of professionals in a given community, which is why it has been addressed in higher-level courses, such as in the elective subject Law Reform and Critical Consciousness⁸ from the Law course at Bond University (Australia) and the Critical Consciousness Development in Teacher Education project⁹, from the University of Cleveland (United States), which aim to develop critical consciousness in students on undergraduate courses focused on teacher education.

When presenting these examples, we do not intend to transplant ways of thinking about reality that are not authentically ours; we need to consider issues such as teacher education, curricular issues, and educational problems inherent to the Brazilian context, i.e., it is based on our reality, it is in our objective circumstances that we have to overcome naive consciousness and reach criticism. In this sense, we must reflect on the teachers’ role and education in promoting critical consciousness.

We regard it necessary to develop training actions that contribute to the promotion of critical consciousness, attentive to the following questions: How can a teacher challenge their students to think critically if they do not recognize their own social, cultural, political, and economic systems? How can they identify the dominant ideology that impacts their professional role? How can they choose TBs if they ignore the process and the tool that can help them in this role, if they do not access the books available to choose from? A formative process that aims to develop teachers’ critical consciousness enables them to develop teaching practices to promote this same education with their students so that they can reflect, analyze, and

⁸ In this course, students explored and critiqued the nature of legal reasoning and the dominant networks and norms that inform the current logic and values of law. For more information, visit <https://bond.edu.au/subject/laws13-122-law-reform-and-critical-consciousness>. Access on: 27 Aug. 2023.

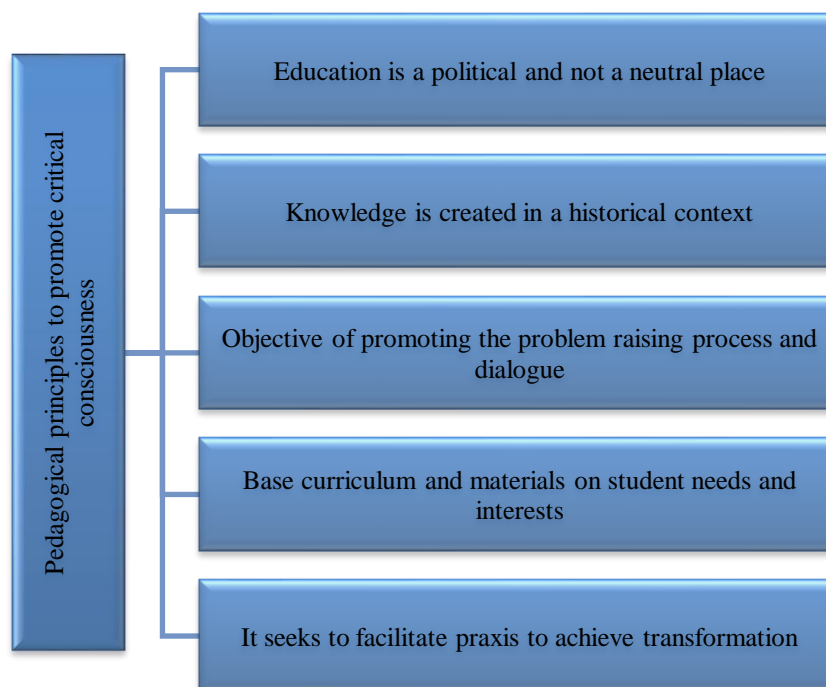
⁹ For more information, visit <https://cehs.csuohio.edu/cue/critical-consciousness-program>. Access on: 27 Aug. 2023.

problematize social, cultural and economic realities, making visible the structures that limit opportunities and restrict their lives.

4 Pedagogical principles to increase critical consciousness

Aiming to develop critical consciousness, King and Casanova (2021) developed a set of principles that guide and frame teaching. It is not a fixed idea but rather a reflection and some recommendations based on his studies. Such principles can be summarized in the following scheme.

Figure 2: Pedagogical principles to¹⁰ promote critical consciousness.



Source: Prepared based on King and Casanova (2021)

The first principle argues that education is a political, not neutral, action. Education is influenced by aspects of a given society and, in particular, the dominant elite.

This principle highlights that the interests of the dominant classes have always been fundamental in maintaining schools. According to Teixeira (1977, p. 27-29, highlights by the author),

no school system has ever been created to subvert the prevailing social stratification. [...] The schools thus reflected, per the old style, the Brazilian social dualism between the “advantaged” and the “disadvantaged”. For this reason, the typical school for everyone never came to be characterized or be, indeed, for everyone. The school was for the so-called elite. Its program, its curriculum, even in public school, was a program and curriculum for the “privileged”. The entire democracy of public schools consisted of allowing “poor people” an education through which they could

¹⁰ Researchers in critical pedagogy and psychology field have focused on studies on advances in the conceptualization and measurement of critical consciousness. For example, Diemer et al. (2015) presented three emerging instruments for measuring critical consciousness: Adolescent Critical Consciousness Measure, Critical Consciousness Inventory, and the Critical Consciousness Scale. From the authors' perspective, these instruments provide a 'conceptual anchor' for research on critical consciousness and expand the possibilities for quantitative studies.

participate in the elite.

In this sense, as Freire states, education is not neutral! Every action is essentially political — even if unconsciously — and can contribute both to reproducing the oppressive ideology and humanizing the world, seeking equity and social justice. The discursive strategy of depoliticizing education, a very current topic in our society, is a fallacy; it is a vision steeped in political and ideological choices that aim to serve the interests of a select group of people. Gutiérrez (1988, p. 22) asserts that “the school makes politics not only by what it says, but also by what remains silent; not only for what it does but also for what it does not do. Keeping silent about what must be shouted from the rooftops is one of the most frequent political forms among those who hold all the aces.

Thus, recognizing that education is not neutral is fundamental to reorienting teaching action, seeking a transformation of society in search of an end to social inequality and the privileges of the few. Not accepting or not seeing education as a political space limits teaching practice, contributing to the maintenance of the *status quo*; for example, practices that focus on test preparation and external assessments are “designed to limit opportunities to increase students’ critical consciousness” (King & Casanova, 2021, p. 4).

According to King and Casanova (2021), the second principle is that knowledge is produced within a specific historical context, which influences and shapes human experiences. This approach goes beyond the limits of schools and educational spaces, encompassing historical events and social and cultural practices of a particular community.

Accepting this perspective is recognizing that racial inequality, social injustice, and unsustainability are historically constructed by humans but can also be transformed by us.

This perspective provides a lens to not only challenge dominant narratives, such as those that emphasize historical development, but also to critically analyze conflicts, differences, and tensions in history that support students’ understanding of themselves as subjects of history and recognize that they can transform conditions of injustice. (King & Casanova, 2021, p. 5)

Promoting dialogue, encouraging problematization, and asking questions make up the third principle of King and Casanova (2021). Education should prepare individuals to question, to problematize situations, not just to answer questions, generally with unique and ready-made solutions. Students need to develop the ability to question, whether in the sense of not accepting something and fighting for changes or wanting to list new considerations about a given problem situation. Such problematization will only occur when linked to the dialogical space, in environments that allow individuals to express themselves and be heard, actively listen, and care about what is being said.

The process consisting of problematization and dialogue is diametrically opposed to that of “banking” education, in which “you educate yourself to archive what you deposit” (Freire, 2011, p. 49-50). One way to employ problem-posing and dialogue is to provide students with opportunities to facilitate classroom discussions, avoiding standard practices of formal presentations and banking education, where the instructor talks while students listen. Instead, teachers can ask questions that connect readings and activities to social, political, and ecological contexts, student identities, and historical events. They can also actively participate in student-led activities to foster an inclusive and equitable learning community (King & Casanova, 2021). In this context, the educator assumes the attitude of someone who seeks to know and transform

reality together with others, occupying the spaces for debates and decisions.

The fourth principle concerns the need to consider the subjectivities of students and the specificities of the school context in which they work, i.e., to organize the curriculum and materials according to the needs and interests of students and the entire school community so that multiple perspectives of the world for students are discussed.

This fourth principle is related to knowledge about students and their characteristics, which allows the teacher to know which curricular contents enhance human development and the skills and competencies necessary for the student to be able to reflect on their existential condition and promote their autonomy and personal liberation (Piva, 2020).

Bishop¹¹ (1990) presents the metaphor that books are like windows, doors, and mirrors. Books sometimes offer windows, the frames of which allow students to see real or imaginary, familiar or unfamiliar worlds. Windows can also be sliding glass doors through which they feel transported into the world of the narrative and feel part of the author's creation. When lighting conditions are adjusted, a window becomes a mirror, and students can see their lives and the experiences of others reflected in it as images.

Although students in a given class look at the same object, not everyone sees the same "landscape". Grant Snider, an American cartoonist, produced a cartoon (Figure 3) inspired by Bishop's ideas, expanding the perspective presented by the author.

Figure 3: Cartoon: "Books are..."



GRANT SNIDER (AFTER RUDINE SIMS BISHOP)

Source: <http://www.incidentalcomics.com/2018/06/books-are.html>. Accessed on April 3, 2022

¹¹ Known as the mother of multicultural literature.

The metaphor presented by Bishop (1990) referred to literature books in which, by reading, students could mirror themselves, seeing things from other points of view, which would help them construct their identity. In the context of the textbooks, these ideas can also be applied. In addition to serving as mirrors, windows, and sliding doors, TBs can be vital in promoting critical thinking and understanding among students.

By presenting diverse perspectives and experiences, these materials can help students develop their ability to analyze and evaluate information and think critically about the world around them. For example, TBs can include content that challenges students to think critically about social, cultural, political, and economic systems. By providing multiple perspectives on a given topic, they can encourage students to consider different points of view and participate in critical discussions with their peers. TBs can also include activities and exercises that promote critical thinking skills. For example, they may contain questions that require students to analyze and evaluate information or apply their knowledge to real-world situations. By participating in these activities, students can develop their ability to think critically and make informed decisions.

Corroborating this reflection, Sosniak and Perlman (1990) state that the power of textbooks lies in their ability to serve as resources that introduce their readers and users to worlds that are not immediately obvious or cannot be experienced directly. In the Brazilian context, these books are the only ones most people know until they complete basic education (Martins, Sales, & Souza, 2009). Therefore, this type of book stands out as a powerful tool. We note that such considerations can also be applied to mathematics textbooks, which occasionally provide contexts and perspectives that “assume the role of contributing to the characterization of mathematics and, together with this, providing the student with broader and deeper development and training in what concerns this curriculum component” (Litoldo, 2021, p. 118) and the worldviews related to this material.

The last principle is to develop praxis, always aiming to achieve transformations. For Freire (2013), awareness cannot exist outside of praxis. The author also states that praxis is the “reflection and action of men on the world to transform it” (Freire, 2013, p. 40). He establishes praxis as an act, conditioned by reasoning, overcoming contradictions in the struggle to transform the world. Praxis creates a space for students and teachers to work together in solidarity to critically reflect on their reality and transform it through collective actions. This involves dealing with tensions and changes in their ideologies and seeking changes in specific educational and social spaces, historically and geographically (King & Casanova, 2021).

In King and Casanova’s (2021) view, these principles guide more meaningful engagement with racial equity and social justice concerning sustainability in higher education. The authors argue that teaching and learning strategies to address these issues can be linked to social transformation within higher education institutions themselves to better meet the needs of their students and the community. Knowing the pedagogical principles can help in choosing textbooks, highlighting the ideological direction that this material carries.

5 The importance of critical consciousness and the choice of TBs

Critical consciousness is a fundamental skill for everyone, especially those involved in education. It allows people to critically analyze and evaluate information, question structures of power and inequality, and make informed decisions. The conscious action of the teacher, in a critical attitude, allows him to not only act as an implementer of public policies but also as a builder of learning experiences that consider students’ subjectivities and do not distance from the objective circumstances of their context. In education, critical consciousness is crucial for

choosing textbooks. These materials are essential in students' education by providing information and perspectives that can shape their understanding of the world. Therefore, teachers must be conscious of the ideologies and values underlying TBs and make informed choices when selecting them for classroom use.

Contemporary formulations of critical consciousness indicate that it comprises three elements: critical reflection, political effectiveness, and critical action. Critical reflection involves a social analysis and rejection of social, economic, racial/ethnic, and gender inequalities that limit well-being and human agency (Watts, Diemer, & Voight, 2011), including the perception of contradictions (Diemer, Rapa, Voight, & McWhirter, 2015) and experienced discrepancies. It is the process of learning to question the projects orchestrated by specific agents and systems that perpetuate structures of inequality. Political efficacy, also called critical motivation, is the perceived ability and commitment to promote social or political change through activism (Diemer et al., 2016; Watts, Diemer, & Voight, 2011). It is the perception of injustices and the sense of agency to address them. It is also the awareness of ideological influences and the critical position taken towards them.

When people feel they can create change, they become more likely to engage in critical action, according to Watts, Diemer, and Voight (2011). For these authors, critical action involves engagement to change aspects of society perceived as unfair, such as institutional policies and practices (Diemer et al., 2016). These actions are aimed at combating identified injustices.

We can think that critical consciousness begins with critical reflection, which supports understanding situations, questioning them, and eventually rejecting societal discrepancies and inequalities. There is an awareness of the projected ideological veil that was previously unnoticed. Then, individuals begin to think about actions that can transform the identified discrepancies and inequalities; this is critical motivation or political efficacy. Finally, there are the attitudes and actions aimed at combating the identified injustices: critical action.

Although describing a beginning and end may suggest a linearity in the stages of critical consciousness, understanding that it is constituted in a dialectical way is crucial. As Fáveri (2019, p. 132) states, it is "doing while thinking and thinking by doing [that] define a dialectical process of constructing oneself and the closest world for man to live his existence with dignity". Freire (2016a) says the relationship between critical reflection and critical action is reciprocal. The analysis of social conditions precedes social change and, as people understand and criticize the reality they experience, they feel they can do something to promote the transformation of social conditions.

The struggle for transformation and change begins by becoming critically conscious and intolerant of the oppressions to move towards new ways of knowing and being in the world. This means that individuals start to question the structures of power and inequality surrounding them and look for ways to bring about positive changes. In education, this may involve the conscious choice of TBs that promote a critical understanding of the world and pedagogical practices that empower students to become agents of change.

Hence, developing critical consciousness is fundamental to helping people, especially teachers, think and act to transform reality. Through this analysis, teachers can question their role when realizing their functions in the school, paving the way for a better understanding of their role in this environment.

Teachers bring to their work their life experiences, which are shaped by historical, sociocultural, economic, and political factors in society. By developing a critical consciousness, they can understand the limitations and restrictions that affect their teaching activities and find

ways to transform social conditions. This process operates on the teacher's subjectivity, providing a path of reflection that expands the possibilities of their professional development; at the same time, it configures the actions to be carried out so that this development takes place in practice.

History shows that qualifying the choice of textbooks by teachers and indicating a list of books evaluated by experts have been important since the creation of the Technical Book and Textbook Commission (Comissão do Livro Técnico e do Livro Didático — COLTED) in 1966. However, research indicates that teachers face difficulties when choosing these teaching materials (Silva, Silva, & Tizzo, 2010; Sousa, Senger, & Oliveira, 2011), with a lack of knowledge about those involved in the process and their policies and guidelines, as well as lack of preparation to select these materials (Mandarino & Belfort, 2004; Thomaz, 2013).

Who benefits from this lack of knowledge? Why is this process not addressed in initial teacher education? Reports show that the time allocated to this process is insufficient for a more conscious choice (Freitas & Ortigão, 2012; Macêdo, Brandão, & Nunes, 2019). Why are there no actions aimed at extending this time? Why isn't the teachers' workload, which does not include moments of analysis and reflection on their own work, considered?

Teachers have difficulty challenging choice processes about which they know little. How can they discuss issues related to this process with their colleagues and promote campaigns to analyze books if their workload does not allow them to reflect on their actions? This is a challenging question that highlights the obstacles teachers face. If one obstacle feeds another, the teacher may feel powerless before this scenario. Low salaries that impair exclusive dedication to a school or shift and changes to regulatory documents without proper training also create difficulties.

Before teachers even consider students' needs and particularities, including their cultural singularities, they are already included in an education system with official texts, precise programs, and textbooks. These prescriptions can restrict teachers' actions, as they are presented as content to be followed, determining the time and sequence of steps to be completed (D'ávila, 2008).

Knowing this framework allows the teacher to identify the book as a reference for their action or as an adjustment tool, which can compromise their autonomy. By understanding how the education system works and how textbooks are selected and used, teachers can make more informed decisions about how to use these resources in the classroom. This can help them balance the demands of the system with students' needs, promoting more meaningful and relevant learning.

Furthermore, teachers can become active agents in transforming education by developing critical consciousness of the educational system and teaching materials. They can question curricular prescriptions and find ways to adapt content to meet students' needs. In education, this may involve the selection of TBs that promote a critical understanding of the world and pedagogical practices that empower students to become agents of change.

At the same time, teachers need to be aware of the limitations of the educational system and work to overcome them. This may involve engaging in critical dialogues with colleagues, administrators, and policymakers to promote positive changes in the education system. It can also include working with students to develop critical skills and enable them to become active agents in transforming education.

In short, critical consciousness is fundamental for teachers when choosing textbooks and promoting pedagogical practices that empower students to become agents of change. By

developing a critical understanding of the educational system and teaching materials, teachers can make informed decisions about using these resources in the classroom and work to overcome the limitations of the system. This can help them promote more meaningful and relevant learning for their students.

6 Final considerations

Textbooks are a resource that can contribute to students' critical formation as long as teachers can choose and use them with autonomy. Teachers' active and critical participation in selecting textbooks (TBs) is essential, not limited to fulfilling a formality but seeking to understand and evaluate the proposals presented in the books. These materials reveal curricular intentions and social values that teachers can question or recreate according to students' needs and interests.

We argue that teachers must exercise their freedom and authorship in pedagogical practice, rewriting the TB daily and not being restricted to the contents prescribed in the works, especially today, when TBs are prepared to contemplate the BNCC. We highlight that teachers face many difficulties and obstacles in choosing textbooks, such as lack of knowledge, time, training, and support. We suggest that teachers know how the teaching system works and the criteria for selecting and using textbooks to exercise their freedom and authorship in pedagogical practice, rewriting the textbook daily according to students' needs and particularities.

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