

Research which investigated Financial Education in the latest editions of ENEM, CIBEM and SIPEM (2021/2022)

Abstract: This paper aims to identify and analyze the theme of Financial Education (EF) in academic research in the latest editions of ENEM, CIBEM and SIPEM. The methodological approach is qualitative of the bibliographical. We believe that the SBEM electronic database enabled a bibliographic survey of academic production. The results pointed to the need to promote discussions about EF in the school environment, recognizing its contribution to the integral and critical formation of the subject, its articulation with social, political, economic, environmental and cultural problems, making education a progressively active social force. They also highlighted the urgent need to implement continuing education programs that enable the planning and implementation of more assertive teaching practices in this area.

Keywords: Financial Education. ENEM. CIBEM. SIPEM.

Investigaciones que estudiaran el tema Educación Financiera en las últimas ediciones del ENEM, CIBEM y SIPEM (2021/2022)

Resumen: Este artículo tiene como objetivo identificar y analizar el tema Educación Financiera (EF) en investigación académica en las últimas ediciones de ENEM, CIBEM y SIPEM. El camino metodológico es un abordaje cualitativo de tipo bibliográfico. Consideramos que la base de datos electrónica de la Sociedad Brasileña de Educación Matemática (SBEM) permitió un levantamiento bibliográfico de la producción académica con mayor eficiencia. Los resultados resaltaron la necesidad de promover discusiones sobre EF en el ámbito escolar, reconociendo su contribución a/para la formación integral y crítica del sujeto, su articulación con problemas sociales, políticos, económicos, ambientales y culturales, haciendo de la educación una fuerza social progresivamente activo. Además, resaltaron la urgencia de implementar programas de educación continua que permitan planificar y ejecutar prácticas docentes más asertivas en esta área.

Palabras clave: Educación Financiera. ENEM. CIBEM. SIPEM.


Pesquisas que investigaram a temática Educação Financeira nas últimas edições do ENEM, CIBEM e SIPEM (2021/2022)

Resumo: Esse artigo objetiva identificar e analisar a temática Educação Financeira (EF) em pesquisas acadêmicas nas últimas edições do ENEM, CIBEM e SIPEM. O caminho metodológico é de abordagem qualitativa do tipo bibliográfica. Consideramos que o banco de dados eletrônicos da SBEM possibilitou um levantamento bibliográfico da produção acadêmica. Os resultados apontaram a necessidade de promover discussões sobre a EF no ambiente escolar, reconhecendo sua contribuição na/para a formação integral e crítica do sujeito, sua articulação com problemas sociais, políticos, econômicos, ambientais e culturais, fazendo da educação uma força social progressivamente ativa. Ainda, destacaram a urgência de implementação de programas de formação continuada que permitam o planejamento e a execução de práticas docentes mais assertivas nessa área.

Palavras-chave: Educação Financeira. ENEM. CIBEM. SIPEM.

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Article

1 Introduction

The National Committee for Financial Education (CONEF), the first in Brazil to establish guidelines for the Program *Financial Education in Schools*, during the term of the program and its actions, within the scope of the Estratégia Nacional de Educação Financeira — ENEF (National Strategy for Financial Education), based on art. 4, of Decree no. 7.397, of December 22, 2010 (Brasil 2010), considering the strategic redirection of the Program, as deliberated at the 25th meeting of CONEF, on September 29, 2016:

Art. 2: The guidelines for the implementation of the Financial Education in Schools Program are: I — universalization of the theme of financial education in schools, through its progressive inclusion in school curricula and integration into Brazilian school culture; II — focus on actions with a teacher as the protagonist of the process of disseminating the theme in schools, with training actions; III — participation of higher education institutions; IV — encouragement of decentralized production of educational content; and V — coordination with public education systems.

Art. 3: Establish as an objective for the implementation of the Program the integration, by 2024, of the theme “financial education” into Brazilian school culture, so that teachers, students and administrators develop and experience projects and activities on the theme in everyday school life. (Brasil, 2018)

The Base Nacional Comum Curricular [BNCC — National Common Curricular Base] (Brazil, 2017) proposes an organic and progressive set of essential knowledge, skills and abilities that all students should develop throughout the stages and modalities, from Early Childhood Education to High School and, among the novelties, it included Financial Education as one of the cross-cutting themes to be worked on in the different subjects:

It is up to education systems and networks, as well as schools, in their respective spheres of autonomy and competence, to incorporate into their curricula and teaching proposals the approach to contemporary issues that affect human life on a local, regional and global scale, preferably in a cross-cutting and integrative way. In the BNCC, these themes are included in the skills of the curricular components, and it is up to the education systems and schools, according to their specificities, to deal with them in a contextualized way. (Brasil, 2018, p. 19)

As soon as the law made it compulsory to develop Financial Education in schools, the teachers responsible for teaching basic education sought further training on the subject and, as a result, many academic course conclusion papers appeared at events on EF. Thus, the guiding question behind this study was: *What do the studies that investigated Financial Education in the latest editions of ENEM, CIBEM and SIPEM say?* Given this guiding question, we aimed to identify and analyze the academic research that investigated the theme of Financial Education in the latest editions of ENEM, CIBEM and SIPEM.

2 Financial Education in official documents

School Financial Education, according to Silva and Powell (2013), is a

set of information through which students are introduced to the world of money and stimulated to produce an understanding of finance and economics, through a teaching process that enables them to analyze, make reasoned judgments, make decisions and take critical positions on financial issues that involve their personal lives, families and the society in which they live. (p. 13)

For National Strategy for Financial Education (Brasil, 2010), assuming the definitions of the OECD (2005), Financial Education consists of the process through which citizens, and consequently society, in general, can improve their understanding of concepts related to financial products and thus develop the values and skills necessary to make more assertive decisions in the face of opportunities and risks involved, improving your well-being. With a higher level of awareness and criticality, such citizens become capable of contributing significantly to social transformation, projecting a better future for everyone.

The Financial Education, whether at school or not, is geared towards training individuals who are capable of making decisions. Thus, we can say that it provides the conditions to perceive information, understand it, evaluate it and make the best decisions that will lead to long-term well-being.

In view of this, Table 1 shows the objective and benefits of the Financial Education in Schools program, according to the National Committee for Financial Education.

Table 1: Description of the objective, benefits and initiatives — guideline, strategic redirection of the Financial Education in Schools program

Objectives	<p>1) To make the Financial Education in Schools program a public policy supported by the Brazilian curriculum reference (BNCC), inserting the theme into school culture while the current Plano Nacional de Educação (PNE — National Education Plan), approved by Law No. 13.005, of June 25, 2014, is still in force. Under the terms of Article 1 of the aforementioned law, the PNE is in force for 10 (ten) years and must be completed by 2024.</p> <p>2. “School culture” is understood as the “set of practices, norms, ideas and procedures, which are expressed in ways of doing and thinking, mentalities and behaviors — sedimented over time in the form of traditions, regularities and rules [...]” within schools.</p>
Benefits	<p>The following benefits are envisioned with the adoption of the change:</p> <ul style="list-style-type: none"> - valuing education professionals; - involvement of higher education institutions; - expansion of the regional presence of the Financial Education in Schools program; - reduced costs for printing and distributing books; - encouraging the decentralized production of educational content; and - coordination with public education systems.
Initiatives	<p>Planning and Institution of the EF Network in Schools: Guideline: to act jointly at national level, with the launch of a nationwide Financial Education network, articulated with Higher Education Institutions and education networks, aimed at training teachers, disseminating the Program to state and municipal networks (schools) and society, strengthening its articulation and contributing to the incorporation of the theme into school culture.</p>

Source: Brasil (2018, p. 9)

Thus, the creation of well-directed formal strategies, with clear specific objectives, represented a leap forward for EF in schools. However, how are EF contents being proposed for the organization of the Basic Education school curriculum according to the BNCC?

The BNCC is a normative document for education networks and their public and private institutions, a mandatory reference for drawing up school curricula and teaching proposals for Early Childhood Education, Primary Education and Secondary Education in Brazil. The BNCC aims to organize what every student in Basic Education should know.

The BNCC (Brasil, 2017) includes Financial Education as one of the Transversal

Contemporary Themes — TCT. The TCTs aim to develop practical, cognitive and socio-emotional skills that promote attitudes and values that enable the resolution of the demands of everyday life, the exercise of citizenship and professional life.

According to the BNCC, contemporary themes are divided into six groups, namely:

- Health: Food Education, Nutrition Education Health;
- Economy: Work, Financial Education and Tax Education;
- Environment: Environmental and Consumer Education;
- Multiculturalism: Cultural Diversity and Education to value multiculturalism in Brazil's historical and cultural matrices;
- Citizenship and Civics: Children's and Adolescent's Rights, Family and Social Life, Traffic Education, Human Rights Education and the aging process, respect and appreciation for the elderly;
- Science and technology: Science and Technology

3 Methodological design

The methodological approach is a qualitative bibliographical approach with an interpretative objective. As presented by Creswell (2007, p. 186), “qualitative research is fundamentally interpretive, in which the researcher interprets the data”. Therefore, we believe that the use of electronic databases, promoted by SBEM, would enable a more efficient bibliographic survey of academic production.

As such, the three events promoted by the Brazilian Society of Mathematics Education (SBEM) are recognized as eligible channels for consultation: National Meeting of Mathematics Education (ENEM, 14th edition, held in 2022), International Seminar on Research in Mathematics Education (SIPEM, 8th edition, held in 2021) and Ibero-American Congress of Mathematics Education (CIBEM, 9th edition, held in 2022). We justified the choice of events because they allow access to journals recognized for the credibility of their publications and are available on the Portal for download¹. The following were used as descriptors to map the production: Financial, Financial Mathematics and Financial Education, and we used the latest editions of the event as a time frame.

We screened the number of papers presented in the database and then began reading the title, abstract and keywords to identify the papers that would make up the *corpus* (resulting from the filtering), meeting at least one of the following inclusion criteria: correlating the topic to the area of EF; addressing empirical studies; or presenting some discussion that correlates to teaching and learning processes. Once we had confirmed the existence of some correlation between the research and the subject under investigation, we created a spreadsheet as a way of systematizing and organizing the results found in the publications consulted and proceeded to read the full text.

As data analysis procedures, we used Content Analysis (CA), from the perspective of Bardin (1977), who defines it as

a set of techniques for analyzing communications in order to obtain, by means of

¹ The proceedings of the XIV ENEM can be accessed [at this link](#); the proceedings of the IX CIBEM can be accessed [at this link](#); and the proceedings of VIII SIPEM can be accessed [at this link](#).

objective and systematic procedures for describing the content of messages, indicators (quantitative or not) that allow the inference of knowledge concerning the conditions of production/reception of these messages. (p. 42)

In the light of the Content Analysis movement, we carried out an interpretative analysis of the corpus based on a dialogical movement. Thus, we move on to the following sections where we present the analysis of the works that came closest to the object of this study.

In this way, the following categories were listed a posteriori: a) Financial Education is consolidated as a topic to be discussed in subjects; b) Financial Education is a trend with a fundamental role in Mathematics Education (Critical); c) Financial Education as a pedagogical tool in the training of mathematics teachers; and d) Financial Education as a basis for contextualization on current issues related to different contexts.

4 Results

After filtering, 31 papers were found that were close to the theme of 'Financial Education', and the terminologies T1, T2, T3, T4 and T31 were used to refer to the papers, as shown in the table below.

Table 2: List of works found using the searches *Financial*, *Financial Mathematics* and *Financial Education*

Event	Title of the Paper	Author	Code
ENEM	Elective curricular component of Financial Education: perspectives with the new High School	Cintia Schneider	A1
	An educational product for teaching critical Financial Education with the mediation of mobile applications for High School students	Décio de Oliveira Gröhs and Gilberto Francisco Alves de Melo	A2
	Financial Mathematics for 9th grade students: a digital commerce experience	Aline Augusta de Oliveira Vitória e Thiago Porto de Almeida Freitas	A3
	Environmental Education and Financial Education in a modeling proposal in Education	Esttefani Duarte Brum and Danusa de Lara Bonotto	A4
	Contexts in textbooks: Financial Education from the perspective of the Critical Mathematics Education trend	Cassiana Mallet Cerqueira Garcia e Aline Silva de Bona	A5
	Financial Education: conscious consumption and savings	Murillo Aurélio de Moura Araujo, Antonio Sales and José Luiz Magalhães de Freitas	A6
	School Financial Education and EJA: analyzing the meanings produced by students during investigative educational practices	Ana Paula Rodrigues da Costa, Solange Taranto de Reis and Rodolfo Chaves	A7
	Financial and Fiscal Education: an action based on Mesadinha and his class	Dioneia Maria Samua Vieira, Susana Schwartz Basso, Bruna Larissa Cecco, Cecilia Romitti Bondan and Luci Teresinha Marchiori dos Santos Bernardi	A8
	Financial Education in the neoliberal context: discussions	Ivan Bezerra de Sousa	A9

Event	Title of the Paper	Author	Code
	and implications based on Critical Mathematics Education	and José Joelson Pimentel de Almeida	
	Implementing and implementing Financial Education curriculum proposals in the states of Pará and São Paulo: a comparative study	Cláudia Fernandes Andrade do Espírito Santo, Cassio Cristiano Giordano and Marco Rodrigo da Silva Assis	A10
	Creative Financial Education: the experience of the online course "É da Sua Conta"?!	Adriana Santos Sousa	A11
	Considerations regarding the subject of Financial Education in the state of Paraná	Taynara Karoline dos Santos, Wellington Hermann and João Henrique Lorin	A12
	Possible differences between Financial Mathematics and Financial Education: meanings produced by Mathematics undergraduates	Lucca Jevaux Oliveira Bonatto	A13
	School Financial Education in activities from different areas of knowledge in High School: what are the prospects?	Danilo Pontual de Melo and Cristiane Azevedo dos Santos Pessoa	A14
	Critical Financial Education: possible problematizations based on exploration, proposition and problem solving	Maurício Alves Nascimento e Ivan Bezerra de Sousa	A15
	An investigation into the process of mathematical modeling and problem solving in a Financial Mathematics activity in the 3rd grade of High School	Felipe Miranda Mota, Jaciara de Abreu Santos and Claudia de Oliveira Lozada	A16
	Financial Education: a gamified experience	Guilherme Carvalho Rodrigues da Silveira, Fernando Celso Villar Marinho, Carla Elaine Oliveira de Moraes and Flávio de Azevedo Custódio	A17
	The potential of problem-based learning in the construction of argumentation in Financial Education problems in Middle School	Sidney Leandro da Silva Viana, Ewellyn Amâncio Araújo Barbosa and Claudia de Oliveira Lozada	A18
	Financial Education from the perspective of Critical Mathematics Education: a proposal for Youth and Adult Education	Natália Cristina Cal Andrade and Caroline Passos	A19
	Financial Education: different perspectives and their relationship with postgraduate students' understandings	Fabio Alves Menecucci	A20
CIBEM	Financial Education for the contextualization of Science and Mathematics teaching	Lucca Castro Ramos Antunes and Clarissa de Assis Olgin	A21
	Financial Education in debate: reports of a conversation about neoliberalism and its implications for Society and Education	Ivan Bezerra de Sousa and José Joelson Pimentel de Almeida	A22

Event	Title of the Paper	Author	Code
	7th grade students' knowledge of Financial Mathematics	Joana Luiz Marques, Larissa Pereira Menezes e Lilian Nasser	A23
	Higher Education students' perceptions of their knowledge of Financial Education	Reullyanne Freitas de Aguiar, Francisco Alexandre de Lima Sales, Raimundo Luna Neres and Iara da Silva Cantanhede	A24
	Mathematics Education and sustainable development: identifying links from the economic sphere	Claudia Vásquez e Israel García-Alonso	A25
	Financial Education and Financial Investments: the development of a didactic sequence for Basic Education	Laís Macedo de Almeida Nunes and Érica Marlúcia Leite Pagani	A26
	Making games: a “do it yourself” pedagogical proposal for teaching Financial Mathematics at a Higher Education institution	Robson dos Santos Costa	A27
	Tax Education in the context of the BNCC: exploring pedagogical approaches	Celso Ribeiro Campos and Andrea Pavan Perin	A28
	A problem-based learning approach to the discussion of consumption	Alexsandra Braga Horta, Paloma Ferreira dos Santos and José Fernandes da Silva	A29
SIPEM	Financial Education and Critical Mathematics Education: understandings and a bibliographical survey of Brazilian research	Andrei Luís Berres Hartmann and Marcus Vinicius Maltempi	A30
	Creative insubordination: an understanding through the lens of Sfard's theory based on incidents in Financial Mathematics	Maria Rachel Pinheiro Pessoa Pinto de Queiroz	A31

Source: Prepared by the authors (2023)

The first thematic category of production Financial Education is consolidated as a topic to be discussed in subjects, presenting 16 works among the 31 that bring theories of financial education as a curricular component. Reinforced by its applicability at different levels of education, as described in the Common Curricular Base — BNCC, which is a document of a normative nature that determines a minimum that must be addressed in schools, in terms of objects of knowledge, skills and competencies, of early childhood education to the completion of secondary education. Financial Education, according to the BNCC (Brazil, 2017), should be addressed as a transversal contemporary theme, both in regular classes and through projects. The National Education Council (CNE) determined that education networks must adapt basic education curricula, including financial education, by 2020.

Based on this premise, we reaffirm that Financial Education as a discipline should “provide participants with activities that provide moments of reflection on their development as citizens, stimulating entrepreneurial skills, and thus developing financial sustainability and improving quality of life” (Sella, 2013, p. 4). Corroborating this, Kliemann, Silva and Dullius (2011, p. 97) point out that “this information should be explored through play, simulations of buying and selling, writing a check, comic strips, theatrical performances, in short, anything that can contribute to the process of building learning for the student”.

Santo, Giordano and Assis (A10) sought answers to the following research question: *What are the possible advances in the curricular proposals for Financial Education in the states of Pará and São Paulo?*. In the light of the BNCC document, the results indicated that, even belatedly, EF in Basic Education, in a transversal way, as a subject, allows multiple approaches by different teachers, from different curricular components, placing it in the condition of a potential curricular articulator.

Santos, Hermann and Lorin (A12) carried out a survey of recent discussions about PE that may have influenced the creation of a Financial Education subject in the Paraná state primary school system. The results pointed to the need and relevance of discussions about Financial Education in the school environment, recognizing its contribution to the integral and critical formation of the subject.

In this way, it is possible to see that the 16 papers in this first category aimed at adverse discussions, with the greatest frequency emphasizing that EF should be part of the Basic Education curriculum, thus consolidating itself as a curricular subject or as the subject of a discipline, and therefore a field of teaching and research in Mathematics Education.

Another thematic category identified in the papers emphasizes that *Financial Education is a trend with a fundamental role in (Critical) Mathematics Education*, associated with primary documents A5, A9, A15, A19, A30 and A31. These are works that go beyond merely understanding the theorization of FE, but bring elements of mathematical content into the classroom, in a way that “expands these moments to critical reflections on economic and social aspects of students' reality, seeking a democratic movement” (Hartmann and Maltempi [A30]).

Approaching the concept of Critical Mathematics Education, that is, for teaching, research and extension to have critical characteristics “it must discuss basic conditions for obtaining knowledge, it must be aware of social problems, inequalities, suppression, etc., and it must try to make education a progressively active social force” (Skovsmose, 2001, p. 101).

The category *Financial Education as a pedagogical tool in math teacher training* has five papers associated with primary documents A13, A17, A20, A24 and A27. The discussions presented by the authors on mathematics teacher training in the papers analyzed also reveal that teachers' participation in training environments in/for PE, as a pedagogical tool in initial and continuing training, should be encouraged, allowing them to “understand transformative possibilities of experience, making them problematic and critical” (Skovsmose, 2008, p. 226).

In these works, we understand that it is important for teachers to go through training moments that include situations involving Financial Education during their initial training, so that it reaches the school space. Thus, in line with Civiero (2016, p. 33), we consider “the Critical Mathematics Education movement as a possibility for epistemological transformation in teacher training”. We would also point out that, through extension courses, mini-courses, workshops, specialization, as well as engagement in collaborative groups, according to Fiorentini (2006), they make it possible to socialize classroom experiences, so that the nuances of teaching and learning processes can be discussed and methodological strategies reflected upon.

With regard to the category *Financial Education as a basis for contextualizing current issues related to different contexts*, it is associated with primary documents A4, A21, A22, A25 and A28. The comprehensions explained in the discussions presented by the authors, on the pragmatism conceived by the EMC, work with themes that permeate different contexts. That is, through reflection-action-reflection on socio-economic, political, environmental and cultural issues, always envisaging new possibilities, because “education must be part of a process of

democratization [...], the educational process must be understood as a dialogue” (Skovsmose, 2001, p. 18). Since “one of the aims of education must be to prepare for critical citizenship” (Skovsmose, 1992, p. 16).

5 Final considerations

Academic production in EF has grown significantly in recent years, but it is still very little if we take into account that Brazil is the third worst country in terms of young people's financial skills, according to the Program for International Student Assessment (PISA), which evaluated 20 countries belonging to the Organization for Economic Cooperation and Development (OECD) and was only ahead of Peru, Georgia and Indonesia.

Among the most significant results, we found the need to broaden and deepen discussions about EF in the school environment, recognizing its contribution to the integral and critical formation of the subject, the articulation of EF with social, political, economic, environmental and cultural problems, making education a progressively active social force, as well as the urgency of implementing continuing education programs in Financial Education.

We believe that this literature review will be useful to other researchers in identifying existing gaps in national academic production in the field of Financial Education, as well as pointing out possible trends in this area, which is increasingly requested in Brazilian post-BNCC curricula.

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Referências

BARDIN, Laurence. *Análise de conteúdo*. Tradução de Luís Antero Reto Pinheiro. Lisboa: Edições 70, 1977.

BRASIL. Banco Central do Brasil. Comitê Nacional de Educação Financeira. [Deliberação n. 19, de 16 de maio de 2017](#). Estabelece diretrizes para o Programa Educação Financeira nas Escolas, durante a vigência do programa e ações de educação financeira no âmbito da Estratégia Nacional de Educação Financeira (ENEF). Brasília: Diário Oficial da União, 28 fev. 2018, Seção 1, p. 9.

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

BRASIL. Ministério da Educação. Secretaria de Educação Básica. [Base Nacional Comum Curricular: Educação Infantil e Ensino Fundamental](#). Brasília: MEC/SEB, 2017.

CIVIERO, Paula André Grawieski. [Educação Matemática Crítica e as implicações sociais da Ciência e da Tecnologia no processo civilizatório contemporâneo: embates para formação de professores de Matemática](#). 2016. 382f. Tese (Doutorado em Educação Científica e Tecnológica). Universidade Federal de Santa Catarina. Florianópolis.

CRESWELL, John. W. *Projeto de pesquisa: métodos qualitativo, quantitativo e misto*.

Tradução de Luciana de Oliveira da Rocha. 3. ed. Porto Alegre: Artmed, 2007.

FIORENTINI, Dario; LORENZATO, Sergio. *Investigação em Educação Matemática: percursos teóricos e metodológicos*. Campinas: Autores Associados, 2006.

KLIEMANN, Geovana Luiza; SILVA, Patrícia Fernanda; DULLIUS, Maria Madalena. [Relevância da Matemática Financeira no Ensino Fundamental](#). *Revista Destaques Acadêmicos*, v. 3, n. 4, p. 95-104, 2011.

OCDE — ORGANISATION ECONOMIC CO-OPERATION AND DEVELOPMENT. [PISA 2003: technical report](#). Paris: OCDE, 2005.

SELLA, Maria da Graça Marson. [Matemática Financeira e o empreendedorismo: uma possibilidade no Ensino de Jovens e Adultos \(EJA\)](#). *Cadernos PDE*, p. 1-33, 2013.

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

SKOVSMOSE, Ole. [Democratic competence and reflective knowing in Mathematics](#). *For the Learning of Mathematics*, v. 12, n. 2, p. 2-11, jun. 1992.

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

SKOVSMOSE, Ole. *Educação Matemática Crítica: a questão da democracia*. Tradução de Abigail Fregni Lins e Jussara de Loiola Araújo. Campinas: Papirus, 2001.